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Madill, A orcid.org/0000-0002-9406-507X, Gittins, R and Teck, J (2022) Examining the gender dimension in the non-medical use of over the counter and prescription only medication. *Drug Science, Policy and Law*, 8. pp. 1-7. ISSN 2050-3245

<https://doi.org/10.1177/20503245221132548>

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Opinion: Examining the gender dimension in the non-medical use of over the counter and prescription only medication

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Drug Science, Policy and Law, Volume 8: 1–7

DOI: 10.1177/20503245221132548

Abstract

There is concern regarding gender differences in problematic non-medical over the counter (OTC) and/or prescription only medication (POM) use. This issue has traditionally been considered a predominantly male and/or younger persons' problem, but more recent transnational evidence shows that women across their life-course are increasingly and often more severely affected. Nevertheless, the bulk of research, policy and treatment services continue to be focused on men. This suggests the need for increased awareness, a shift in research and policy agenda and improved treatment access and engagement approaches, informed by a robust examination of the gender dimension. We present here a summary of current evidence around the epidemiology of non-medical use of OTC and POM and highlight the gender differences across the domains of healthcare interactions, changes across the life-course, experiences of trauma and barriers to obtaining support.

We conclude by proposing a re-gendering agenda to challenge the "male by default" tendency when designing, delivering and evaluating treatment services. For example, utilising co-production with a strengths-based approach has been found to balance gender power with positive outcomes for participants (Randall, et al., 2022). Such approaches can help to address stigma and marginalisation, by embedding the lived experiences and voices of women in designing and providing treatment services, safe spaces and gender-sensitive treatment programs. It also means promoting coordinated, holistic, multidisciplinary and multi-agency approaches, and establishing a research strategy to fill knowledge gaps around the experiences of women. These changes should improve engagement with treatment services and consequent outcomes, especially in relation to OTC/POM.

Introduction

Health systems and behaviours are not gender neutral and neglecting their role in substance use disorder (SUD) risks impairing effective practice and policy responses (Morgan, et al., 2016). Recent evidence highlights a health gap, particularly in the United Kingdom (UK), in which women are poorly served (Winchester, 2021). Specific shortcomings include effective analgesia provision (Chen, et al. 2008) and profound inequalities accessing specialist treatment services (Tweed, et al., 2022; Ashley, et al., 2003). Women are also under-represented in research in this field (Hankivsky, et al., 2009; Hughes, et al., 2020; Meyer, et al., 2019). Moreover, enduring societal and cultural norms, such as responsibility for child rearing, act to stigmatise and discriminate against women who experience SUD, inhibiting many from seeking help (Schamp, et al., 2021; Becker, et al., 2016).

The non-medical use of over the counter (OTC) and prescription only medication (POM) refers to the consumption of these pharmaceutical products in unsanctioned ways or by someone other

than the person for whom it was intended (UNODC, 2011). For some this may result in SUD and a vast array of different medicines for a variety of clinical indications may be involved, including analgesics, antidepressants, antihistamines, antipsychotics, anxiolytics, steroids and stimulants. In fact, such medicines have been identified as the third most common problem in relation to SUD, after cannabis and alcohol, and have an upward trend in overdose, emergency room visits and accidental death (Peteet, 2019). The United States (US) “opioid epidemic”, a subject of intense political debate, media attention and scientific research is a case in point. The US has experienced a fall in opioid prescribing but in parallel with a rise in overdose deaths from unregulated supply (Jayawardana, et al., 2021; Tyndall, 2020). Contemporaneously, the UK has become the top consumer of opioid medications when measured by morphine milligram dose equivalents per 1,000 inhabitants per day (Jayawardana, et al., 2021).

While there is an acknowledged shortfall in detailed epidemiological data on gender differences in drug related deaths worldwide, trends indicate that the rate amongst women has risen more steeply than amongst men (Lynn, et al., 2021). A systematic review of transnational trends in non-medical use of prescription medications suggests that it is a major problem among women of all age groups worldwide, disputing the myth that the primary correlates are being male and/or younger (Peteet, 2019). A worldwide scoping review indicates a gender difference in the medicines involved, and prescribed opioids and benzodiazepines predominate as causative agents in the death of women (Lynn, et al., 2021). There are also higher rates of prescribing amongst women for medication associated with dependency and withdrawal (PHE, 2019; Marsden, et al., 2019; Goetz, et al., 2021; Simoni-Wastila, 2000; Henricson, 1999). Although these medicines are a major pathway to SUD, men continue to predominate specialist treatment services (Goetz, et al., 2021; PHE, 2020). Moreover, when women do access services, their needs are often different to that of men. For example, while OTC/POM are associated with deliberate self-harm amongst women, interventions for men are more likely to need to target concomitant alcohol use (Hulse, et al., 2001; Matsumoto, et al., 2011).

The call for evidence to develop a women's health strategy is welcome; however, we believe there is already sufficient rationale to support a re-gendering of SUD services. By this we mean that greater awareness is needed of the "male by default" tendency. This is particularly pertinent to OTC/POM given the challenges engaging this group in treatment and the predominance of women in this population. To draw meaningfully on the extant literature, we utilise here a conception of gender as binary; however, we fully recognise the health disparities and barriers to treatment for intersex, transgender, and gender non-binary people and the need to redress the woeful lack of research on how best to support these individuals (Safer, et al., 2016).

Interactions with healthcare

Women suffer more than men from anxiety and pain, perhaps explaining their preference for opioid analgesics and tranquillisers (Simoni-Wastila, 2000; Knight, 2017). As a group they also more frequently present with pain as a primary complaint and the more prevalent co-prescribing of medicines such as benzodiazepines compounds the risk of adverse events including SUD (Goetz, et al., 2021; Knight, 2017). In fact, a large review of prescribing patterns across the UK identified that women receive more medicines such as opioid analgesics and z-drugs which could result in dependency and physical withdrawal and for longer periods (Tyndall, 2020; Marsden, et al., 2019). Similar prescribing patterns have been identified in the US and elsewhere in Europe (Goetz, et al., 2021; Simoni-Wastila, 2000; Henricson, 1999).

Women experiencing chronic pain, particularly if they are of colour, are more often referred to mental health services, and/or prescribed antidepressants, rather than have their pain managed

in the same way as men (Samulowitz, et al., 2018). In relation to SUD, antidepressants, especially those with sedating side-effect profiles are at high risk of diversion, and women are often prescribed such medicines for “non-clinical symptoms” such as grief, life events or stress and for relatively long periods (Clarke, 2015).

As a group, women have a greater propensity for non-medical OTC/POM use (including anxiolytics such as benzodiazepines and opioid analgesics) with significant harm at lower doses and for shorter durations when compared to men, resulting in a greater frequency of negative outcomes including emergency department admissions (Simoni-Wastila, 2000; Greenfield, et al., 2010; Seaman, et al., 2014; Feingold and Lev-Ran, 2017; Carey, et al., 2014; Ford, et al., 2014; Scholz, et al., 2019).

The complexities of women’s interactions with healthcare in relation to OTC/POM is further demonstrated in a study by the US Veterans Health Administration which identified the greatest rise in long-term opioid use and overdose-related mortality among women in midlife (Gibson, et al., 2019). Specifically, they found a complex interaction between chronic pain, comorbid mental and physical health issues, menopause-related physiological changes, menopausal symptoms and opioid prescribing (Alexander, et al., 2020). Hence, women in midlife are being prescribed more potent opioids at increasing dose and duration, often alongside other central nervous system depressants such as benzodiazepines and gabapentinoids, with increasing numbers of non-fatal and fatal overdoses. This picture is further complicated by the substantial global heterogeneity in the use of opioids by women (Jayawardana, et al., 2021). Whilst there are localised socio-cultural contexts and differences in healthcare provision, it should be observed that there is greater use amongst American women of anxiolytics and analgesics; tranquilisers amongst those in Australia; benzodiazepines in Pakistan; and anxiolytics, sedatives and analgesics amongst Grecian women, with the evidence base especially underdeveloped in the UK context (Simoni-Wastila, 2000; Iqbal, et al., 2011; NADK, 2021; Papazisis, et al., 2018; Gittins, et al., 2021).

Women are significantly less likely than men to access treatment services and those with problematic non-medical use of OTC/POM are a hidden population (Ramlagan, et al., 2010; Brady and Lydiard, 2021). Hence, understanding gender-related barriers to accessing support is needed to help reduce disparities in service provision and treatment outcomes. Moreover, evidence of the need for gender-sensitive engagement approaches is supported by Summers, et al., (2014) who demonstrate that women are more likely to be discharged from services for using substances on top of their prescribed intervention, especially relating to POM opioids, and this puts them at greater risk of poor outcomes (Summers, et al., 2014). Therefore, to reduce barriers to accessing support and maximise engagement with treatment services, strength-based co-production must be embedded as an approach, where individuals with lived experience are involved in service design and consequent evaluation from the outset (Randall, et al., 2022).

Biological/life-course factors and related barriers to treatment

Hormonal changes across a woman’s life-course means that age itself is a factor in the vulnerability to, and impact of, OTC/POM (Becker, et al., 2016; Iqbal, et al., 2011; Ramlagan, et al., 2010). Hormonal cycles and other biological changes are associated with, and complicated by, challenging life events which can lower resilience to SUD (Carbone-Lopez and Miller, 2012; Fink and Galea, 2015; Koenen, et al., 2013; Agorastos, et al., 2019; Gladwin, et al., 2011). This includes navigating menarche and adolescence; pregnancy, menopause and longer life expectancy experienced with poorer health (Cusack and Mander, 2021; Zakiniaiez and Potenza, 2018).

Several studies and reviews support a differential female response to substances and treatment, influenced by hormonal changes associated with menstruation, pregnancy, breastfeeding and menopause (Tweed, et al., 2022). Sex hormones have also been found to affect women more significantly regarding their impact upon craving and hypothalamic-pituitary-adrenal reactivity and consequent relapse risk (Sinha, et al., 2007). Furthermore, older age and menopause is associated with anxiety, depression, fatigue, stress, sleep disturbance and social impairment any of which may trigger the onset, perpetuate, or exacerbate SUD, including for OTC/POM such as triptans (Alexander, et al., 2020; Braunstein, et al., 2015; Milic, et al., 2018).

Additionally, as menopausal women more frequently experience comorbid chronic pain and mental health challenges, they are more often prescribed opioids at relatively high dose and duration, resulting in diversion liability and tragic overdose rates (Gibson, et al., 2019). Multiple comorbidities also create problems sustaining engagement, for example due to frequent appointments and complicated medication regimens. To further complicate matters, clinicians may have difficulty differentiating between menopausal symptoms and non-medical OTC/POM use, such as hot/cold flushes, sweating and insomnia (Tuchman, 2003).

Women's vulnerability to SUD in later-life is supported by a 2018 review which examined the evidence for gender differences in experiences, particularly the gender-related phenomenon known as "telescoping" whereby women engage in potentially addictive behaviours later in life, but then encounter more problems, including physical, psychological, employment and family challenges with greater severity and related complications than do men (Zakiniæiz and Potenza, 2018; Hernandez-Avila, et al., 2004). For example, women's increased risk of alcohol use disorder in midlife complicates the ageing clinical picture with issues like musculoskeletal pain and polypharmacy with consequent harms from drug interactions especially pertinent in concomitant non-medical OTC/POM use (Milic, et al., 2018).

Socio-cultural factors (including the 'maternal role') and related barriers to treatment

Socio-cultural expectations can also predispose to SUD (including OTC/POM), due to gender stereotypes, biases in educational and employment opportunities as well as parenting and caregiving responsibilities (Simoni-Wastila, 2000; Iqbal, et al., 2011; Jiménez, et al., 2014; Ramlagan, et al., 2010; Nielsen, et al., 2015; MacDonald, 2018).

Expectations of the 'maternal' role remain embedded into societal perceptions and therefore stigma and lack of social support are key barriers to women receiving the treatment they need (Becker, et al., 2016). For example, gender role expectations, such as to be a good mother, and to take the lead in caring for others can make it risky for a woman to seek support from her immediate social network and wider community, and exacerbates secrecy, even towards healthcare providers (Clarke, 2015; Yang, et al., 2017). This is compounded by the fear experienced by many women, particularly in the context of OTC/POM, that they may lose custody of their children (Ramlagan, et al., 2010; Taylor, 2010).

Lack of social support for caring responsibilities and lack of childcare facilities at services, particularly during school holidays, can make attendance difficult (Taylor, 2010). This is exacerbated by inability to pay for childcare or, in some cases, even for transport to attend treatment. In fact, specifically in relation to non-medical OTC/POM use, socio-economic status corollaries have been identified, given that women are disproportionately affected by benefits and social welfare policy changes, employment status and long shift work (Simoni-Wastila, 2000; Iqbal, et al., 2011; Ramlagan, et al., 2010; Nielsen, et al., 2015; MacDonald, 2018).

Additionally, understandable unwillingness to be separated from family, and their centrality to family functioning, may limit opportunities for women to engage with residential rehabilitation (Brady and Lydiard, 2021). Concern for their own safety can also be a deterrent to treatment, which includes fear of encountering a violent ex-partner.

Experience of trauma, mental health comorbidities and related barriers to treatment

Over 50% of women with SUD issues have experienced physical and/or sexual abuse and, as a result, many also suffer post-traumatic stress disorder (Bailey, et al., 2019). In fact, women with SUD are more likely to suffer multiple comorbidities, and those with mental health disorders more often have a history of trauma when compared to men (Brady and Lydiard, 2021; Nwabueze, et al., 2021). Indeed, Serdarevic, *et al.* (2019) found that, amongst older women, concurrent hazardous alcohol and opioid use was significantly associated with depression and anxiety, highlighting the need to tailor interventions accordingly (Serdarevic, et al., 2019).

Men often refer to enjoyment or novelty seeking as a motivation for recreational use of substances and Clarke *et al.* (2015) found that women are more likely to cite social reasons, stress, emotional or physical pain, or to having a partner who uses drugs (Clarke, 2015). While trauma such as sexual and/or physical abuse, childhood neglect and/or parental SUD is experienced by people of every gender, they are thought to be more common for women (Neale, et al., 2014; Briere, et al., 2010; Ellsberg, et al., 2008; Martin and Callaway, 2009). Trauma can sustain and exacerbate SUD or induce relapse and intimate partner violence and violence in association with sex work are more prevalent stressors for women (Neale, et al., 2014; Briere, et al., 2010; Ellsberg, et al., 2008; Martin and Callaway, 2009; Devries, et al., 2014).

A particularly insidious scenario is where women rely on men to source and/or inject drugs, including OTC/POM, becoming powerless to choose whether to use, what to take, and when, and to avoid sharing equipment (Simmons, 2012). Consequently, gender-related power imbalances can increase harms for women, including hepatitis C and HIV transmission (Simmons, 2012). Additionally, experience of gender-based violence can make it difficult for women to feel safe seeking treatment where women-only spaces are not available (Ashley, et al., 2003; Gatz, et al., 2007).

Representation in research

There is a paucity of OTC/POM research when compared to other SUD, and the bulk of research is male-oriented (Meyer, et al., 2019). This is extremely relevant given that physiological differences mean that pharmacological studies skewed towards men may not provide adequate evidence of efficacy, adverse outcomes or risk-benefit ratios for women (Meyer, et al., 2019). Relatively few studies examining non-medical use of OTC/POM include comparative samples of women or gender stratification (Lynn, et al., 2021) and is especially lacking regarding individuals who do not identify with traditional gender roles. When the focus has been on women, it has been on child-bearing years and connected with child welfare or pregnancy (Brady and Lydiard, 2021).

Similar research gaps exist for epidemiological research of non-medical use of medications including around prevalence, risks and protective factors that are specific for women (Petee, 2019). For example, demographic correlates such as marital status, age-related preference for different medicines such as benzodiazepines, access to healthcare in different geographic settings and the role of social networks all require closer examination (Simoni-Wastila, 2000;

Iqbal, et al., 2011; Ramlagan, et al., 2010; Nielsen, et al., 2015). Where this research has been conducted, it has tended to be within specific geographic and healthcare settings, primarily North American, with arguably limited cultural transferability to other nations and health systems (Peteet, 2019).

Many studies which have examined the role of gender more closely have tended to focus on opioids, leaving a deficit of understanding in relation to other POM and OTC use and their concurrent use with alcohol and illicit substances (Brady and Lydiard, 2021). Where gender differences have been identified, these require further exploration. For example, whilst the Committee on Health Care for Underserved Women identified that when used for non-medical purposes, POM are most frequently sourced through sharing or theft from friends or family (AOG, 2012), and therefore a greater understanding of women's motives and in comparison to men is needed to facilitate prevention and harm reduction interventions.

As discussed earlier, ageing is a significant factor for women suffering SUD yet research has not typically considered the life-course, and women in their middle years are often under-represented. Indeed, ageing women with comorbid neurodegenerative disorders and SUD represent a significant research gap (Gipson and Bimonte-Nelson, 2021). This is particularly concerning because there is an ageing cohort of people who use substances (including OTC/POM) and a lack of understanding of the telescoping phenomenon in this context. Additional gaps in knowledge include improving an understanding of the types of medication involved and patterns of use (Gittins, et al., 2021), and how this may vary by gender.

Discussion

We propose that a re-gendering of knowledge generation, policy development and treatment services is required. However, an intersectional approach is important to avoid the assumption that gender is always the most important factor in shaping a person's experience. Other factors affected by inequalities include race, age and sexuality. Indeed, we support a *gender-sensitive* or *gender-informed* approach which can benefit all individuals. We suggest the following practical approaches for service provision and research regarding the gender dimension in the non-medical use of OTC and POM:

Implications for service providers:

- Design, deliver and evaluate services in collaboration with women with lived experience
- Forefront empowerment and a strengths-based approach which addresses stigma, particularly the fear of being labelled an unfit parent
- Enable an environment in which all genders feel safe
- Provide child- and family-sensitive facilities
- Where employability, educational, training, volunteering, detoxification and rehabilitation opportunities are offered, account for caregiving responsibilities
- Facilitate a coordinated, multidisciplinary and multi-agency approach that incorporates, at the very least, housing, social care, probation, employment, legal and financial advice
- Provide education to reduce the bias towards higher risk prescribing patterns for females
- Offer a gender-concordant clinician and/or recovery staff where this is preferred by the individual
- Implement interventions that are trauma-informed and tailored to life stage
- Utilise network-based interventions which involve partner agencies such as sexual health clinics

- Ensure responsiveness to ongoing risk of abuse, violence and exploitation, including initiatives for early detection, prevention and intervention
- Provide outreach and enhanced support at critical points of increased vulnerability such as following a non-fatal overdose, bereavement, prison release, hospital discharge, during and after child protection processes, contact with the police, significant life change such as pregnancy and childbirth and when adapting to changes in service provision.

Implications for researchers:

- Improve understanding of epidemiological gender differences and ensure inclusivity of under-represented groups such as women in rural areas, bisexual/lesbian, and/or ethnic or religious minorities.
- Consider the needs and opinions of women across different demographics (including age and comorbidities)
- Meaningfully involve women as research partners
- Further explore differing prevention, engagement and treatment strategies for women, especially in the context of the telescoping phenomenon

Furthermore, service provision and research developments which are dependent upon the different type of OTC/POM being used is important since there may be a need for different approaches dependent upon the medication of concern. It is essential to increase public and treatment service provider awareness of non-medical OTC/POM use and bring the gendered and intersectional dimension very much to the forefront in formulating research protocols and developing and evaluating services. We believe that making these changes will enable women to more effectively access and engage with treatment for non-medical OTC and POM, and consequently improve outcomes and the associated health and socio-economic effects, for them, their friends, family and the wider community.

References

- Agorastos A, Pervanidou P, Chrousos GP, Baker DG (2019) Developmental Trajectories of Early Life Stress and Trauma: A Narrative Review on Neurobiological Aspects Beyond Stress System Dysregulation. *Frontiers in Psychiatry* 10:118.
- Alexander LL, LaRosa JH, Bader H, Garfield S, Alexander W (2020) *New dimensions in women's health*. 8th edition. Jones and Bartlett.
- Ashley OS, Marsden ME, Brady TM (2003) Effectiveness of substance abuse treatment programming for women: a review. *American Journal of Drug and Alcohol Abuse* 29(1):19–53.
- Bailey K, Trevillion K, Gilchrist G (2019) What works for whom and why: A narrative systematic review of interventions for reducing post-traumatic stress disorder and problematic substance use among women with experiences of interpersonal violence. *Journal of substance abuse treatment* 99:88-103.
- Becker JB, McClellan M, Reed BG (2016) Sociocultural context for sex differences in addiction. *Addiction Biology* 21(5):1052–1059.
- Brady KT, Lydiard JB (2021) Women and addiction. In: *Textbook of Addiction Treatment* Springer p.1395–405.
- Braunstein D, Donnet A, Pradel V, Sciortino V, Allaria-Lapierre V, Lantéri-Minet M, Micallef J (2015) Triptans use and overuse: A pharmacoepidemiology study from the French health insurance system database covering 4.1 million people. *Cephalalgia : an international journal of headache* 35(13):1172-80.

- Briere J, Hodges M, Godbout N (2010) Traumatic stress, affect dysregulation, and dysfunctional avoidance: a structural equation model. *Journal of traumatic stress* 23(6):767-74.
- Carbone-Lopez K, Miller J (2012) Precocious role entry as a mediating factor in women's methamphetamine use: Implications for life-course and pathways research. *Criminology* 50(1):187–220.
- Carey J, Boyle KL, Rhyee S (2014) Gender differences in prescription medication abuse. Society for Academic Emergency Medicine Annual Meeting, Dallas. Available at: https://www.acmt.net/Library/Toxic/FINALsaemabstract_for_Toxic.pdf (accessed 18 February 2022).
- Chen EH, Shofer FS, Dean AJ, Hollander JE, Baxt WG, Robey JL, Sease KL, Mills AM (2008) Gender disparity in analgesic treatment of emergency department patients with acute abdominal pain. *Academic Emergency Medicine* 15(5):414-8.
- Clarke M. (2015) The gender dimension of non-medical use of prescription drugs in Europe and the Mediterranean region. Conseil de l'Europe. Available at: <https://rm.coe.int/the-gender-dimension-of-non-medical-use-of-prescription-drugs-in-europ/168075bac0> (accessed 18 February 2022).
- Committee on Health Care for Underserved Women, The American College of Obstetricians and Gynecologists (AOG) (2012) Committee opinion no. 538: nonmedical use of prescription drugs. *Obstetrics and gynecology* 120(4):977-82.
- Cusack J, Mander T (2021) Postreproductive disability-free life expectancy – An increasing gender gap. *Post reproductive health* 27(2):59–61.
- Devries KM, Child JC, Bacchus LJ, Mak J, Falder G, Graham K, Watts C, Heise L (2014) Intimate partner violence victimization and alcohol consumption in women: a systematic review and meta- analysis. *Addiction* 109(3):379–91.
- Ellsberg M, Jansen HA, Heise L, Watts CH, Garcia-Moreno C (2008) WHO Multi-country Study on Women's Health and Domestic Violence against Women Study Team. Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: an observational study. *Lancet* 371(9619):1165-1172.
- Feingold D, Lev-Ran S (2017) Primary Addictive Substances Used among Patients Treated in a Hospital-Based Addiction Medicine Service. *Israel journal of psychiatry* 54(2):41-46.
- Fink DS, Galea S (2015) Life Course Epidemiology of Trauma and Related Psychopathology in Civilian Populations. *Current Psychiatry Reports* 17(5):31.
- Ford JA, Reckdenwald A, Marquardt B (2014) Prescription drug misuse and gender. *Substance use & misuse* 49(7):842-851.
- Gatz M, Brown V, Hennigan K, Rechberger E, O'Keefe M, Rose T (2007) Effectiveness of an integrated, trauma-informed approach to treating women with co-occurring disorders and histories of trauma: the Los Angeles site experience. *Journal of Community Psychology* 35(7):863.
- Gibson CJ, Li Y, Huang AJ, Rife T, Seal KH (2019) Menopausal Symptoms and Higher Risk Opioid Prescribing in a National Sample of Women Veterans with Chronic Pain. *Journal of general internal medicine* 34(10):2159-2166.
- Gipson CD, Bimonte-Nelson HA (2021) Interactions between reproductive transitions during aging and addiction: promoting translational crosstalk between different fields of research. *Behavioural Pharmacology* 32(2&3):112-122.
- Gittins R, Missen L, Maidment I (2021) Misuse of medication in adult substance misuse services: a systematic review protocol. *BMJ Open* 11(6):e047283.

- Gladwin TE, Figner B, Crone EA, Wiers RW (2011) Addiction, adolescence, and the integration of control and motivation. *Developmental cognitive neuroscience* 1(4):364–376.
- Goetz TG, Becker JB, Mazure CM (2021) Women, opioid use and addiction. *Federation of American Societies for Experimental Biology* 35 (2) e21303.
- Greenfield SF, Back SE, Lawson K, Brady KT (2010) Substance abuse in women. *The Psychiatric clinics of North America* 33(2):339-55.
- Hankivsky O, Cormier R, De Merich D (2009) Intersectionality: Moving women's health research and policy forward. Women's Health Research Network Vancouver. Available at: <https://bcewh.bc.ca/wp-content/uploads/2012/05/2009-IntersectionalityMovingwomenshealthresearchandpolicyforward.pdf> (accessed 18 February 2022).
- Henricson K, Carlsten A, Ranstam J, Rametsteiner G, Stenberg P, Wessling A, Melander, A (1999) Utilisation of codeine and propoxyphene: geographic and demographic variations in prescribing, prescriber and recipient categories. *European Journal of Clinical Pharmacology* 55(8):605-11.
- Hernandez-Avila CA, Rounsaville BJ, Kranzler HR (2004) Opioid-, cannabis- and alcohol-dependent women show more rapid progression to substance abuse treatment. *Drug and Alcohol Dependence* 74(3):265-72.
- Hughes TL, Veldhuis CB, Drabble LA, Wilsnack SC (2020) Research on alcohol and other drug (AOD) use among sexual minority women: A global scoping review. *PLoS One* 15(3):e0229869.
- Hulse GK, Robertson SI, Tait RJ (2001) Adolescent emergency department presentations with alcohol- or other drug-related problems in Perth, Western Australia. *Addiction* 96(7):1059-67.
- Iqbal SP, Ahmer S, Farooq S, Parpio Y, Tharani A, Khan RA, Zaman M (2011) Benzodiazepine use among adults residing in the urban settlements of Karachi, Pakistan: a cross sectional study. *Substance abuse treatment, prevention, and policy* 6:19.
- Jayawardana S, Forman R, Johnston-Webber C, Campbell A, Berterame S, de Joncheere C, Aitken M, Mossialos E (2021) Global consumption of prescription opioid analgesics between 2009-2019: a country-level observational study. *EclinicalMedicine* 42:101198.
- Jiménez AM, Molina MIS-M, García-Palma MB (2014) Gender Bias in Addictions and their Treatment. An Overview from the Social Perspective. *Procedia - Social and Behavioural Sciences* 132:92–99.
- Knight KR (2017) Women on the Edge: Opioids, Benzodiazepines, and the Social Anxieties Surrounding Women's Reproduction in the U.S. "Opioid Epidemic". *Contemporary drug problems* 44(4):301-320.
- Koenen KC, Rudenstine S, Susser E, Galea S (2013) *A life course approach to mental disorders*. Oxford University Press
- Lynn E, Cousins G, Lyons S, Bennett KE (2021) Trends in drug poisoning deaths, by sex, in Ireland: a repeated cross-sectional study from 2004 to 2017. *BMJ Open* 11(9):e048000.
- MacDonald EM (2018) The gendered impact of austerity: Cuts are widening the poverty gap between women and men. British Politics and Policy at LSE. Available at: <https://blogs.lse.ac.uk/politicsandpolicy/gendered-impacts-of-austerity-cuts/> (accessed 18 February 2022).
- Marsden J, White M, Annand F, Burkinshaw P, Carville S, Eastwood B, Kelleher M, Knight J, O'Connor R, Tran A, Willey P, Greaves F, Taylor S (2019) Medicines

associated with dependence or withdrawal: a mixed-methods public health review and national database study in England. *Lancet Psychiatry* 6(11):935-950.

- Martin S, Callaway A (2009) Women, conflict and trafficking: towards a stronger normative framework for protection. In: *Women, Migration, and Conflict*. Springer. p. 47–61.
- Matsumoto T, Ozaki S, Kobayashi O, Wada K (2011) [Current situation and clinical characteristics of sedative-related disorder patients in Japan: a comparison with methamphetamine-related disorder patients]. *Seishin shinkeigaku zasshi = Psychiatria et neurologia Japonica* 113(12):1184-98.
- Meyer JP, Isaacs K, El-Shahawy O, Burlew AK, Wechsberg W (2019) Research on women with substance use disorders: Reviewing progress and developing a research and implementation roadmap. *Drug and Alcohol Dependence* 197:158-163.
- Milic J, Glisic M, Voortman T, Borba LP, Asllanaj E, Rojas LZ, Troup J, Kieft-de Jong JC, van Beeck E, Muka T, Franco OH (2018) Menopause, ageing, and alcohol use disorders in women. *Maturitas* 111:100-109.
- Morgan R, George A, Ssali S, Hawkins K, Molyneux S, Theobald S (2016) How to do (or not to do)...gender analysis in health systems research. *Health Policy and Planning* 31(8):1069-78.
- National Alcohol and Drug Knowledgebase (NADK) (2021) Do men or women in Australia use pharmaceutical drugs for non-medical purposes more often? Available at: <https://nadk.flinders.edu.au/kb/pharmaceuticals/use-patterns/do-men-or-women-in-australia-use-pharmaceutical-drugs-for-non-medical-purposes-more-often> (accessed 17 April 2022).
- Neale J, Nettleton S, Pickering L (2014) Gender sameness and difference in recovery from heroin dependence: a qualitative exploration. *International Journal of Drug Policy* 25(1):3-12.
- Nielsen S, Murnion B, Dunlop A, Degenhardt L, Demirkol A, Muhleisen P, Lintzeris N (2015) Comparing treatment-seeking codeine users and strong opioid users: Findings from a novel case series. *Drug and Alcohol Review* 34(3):304-11.
- Nwabueze C, Elom H, Liu S, Walter SM, Sha Z, Acevedo P, Liu Y, Su BB, Xu C, Piamjariyakul U, Wang K (2021) Gender differences in the associations of multiple psychiatric and chronic conditions with major depressive disorder among patients with opioid use disorder. *Journal of Addictive Diseases* 0:1-11.
- Papazisis G, Tsakiridis I, Pourzitaki C, Apostolidou E, Spachos D, Kouvelas D (2018) Nonmedical Use of Prescription Medications Among Medical Students in Greece: Prevalence of and Motivation for Use. *Substance use & misuse* 53(1):77-85.
- Petet BJ (2019) Psychosocial risks of prescription drug misuse among U.S. racial/ethnic minorities: A systematic review. *Journal of Ethnicity in Substance Abuse* 18(3):476-508.
- Public Health England (PHE) (2019) Dependence and withdrawal associated with some prescribed medicines: an evidence review. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/940255/PHE_PMR_report_Dec2020.pdf (accessed 18 February 2022).
- Public Health England (PHE) (2020) Substance misuse treatment for adults: statistics 2019 to 2020: report. Available at: <https://www.gov.uk/government/statistics/substance-misuse-treatment-for-adults-statistics-2019-to-2020> (accessed 17 April 2022).
- Ramlagan S, Peltzer K, Matseke G (2010) Epidemiology of drug abuse treatment in South Africa. *South African Journal of Psychiatry* 16(2):40-49.

- Randall K, Tayleur S, Allamby W (2022) A case study: using an appreciative inquiry model to co-produce a gender-informed women's only access to drug and alcohol treatment space. *Housing, Care and Support*. Vol. ahead-of-print No. ahead-of-print.
- Safer JD, Coleman E, Feldman J, Garofalo R, Hembree W, Radix A, Sevelius J (2016) Barriers to healthcare for transgender individuals. *Current opinion in endocrinology, diabetes, and obesity* 23(2):168-71.
- Samulowitz A, Gremyr I, Eriksson E, Hensing G (2018) "Brave Men" and "Emotional Women": A Theory-Guided Literature Review on Gender Bias in Health Care and Gendered Norms towards Patients with Chronic Pain. *Pain research & management* 6358624.
- Schamp J, Simonis S, Roets G, Van Havere T, Gremeaux L, Vanderplasschen W (2021) Women's views on barriers and facilitators for seeking alcohol and drug treatment in Belgium. *Nordisk Alkohol & Narkotikatidskrift* 38(2):175-189.
- Scholz I, Schmid Y, Exadaktylos AK, Haschke M, Liechti ME, Liakoni E (2019) Emergency department presentations related to abuse of prescription and over-the-counter drugs in Switzerland: time trends, sex and age distribution. *Swiss medical weekly* 149:w20056.
- Seaman EL, Levy MJ, Jenkins JL, Godar CC, Seaman KG (2014) Assessing pediatric and young adult substance use through analysis of prehospital data. *Prehospital and disaster medicine* 29(5):468-72.
- Serdarevic M, Gurka KK, Striley CW, Vaddiparti K, Cottler LB (2019) Prevalence of Concurrent Prescription Opioid and Hazardous Alcohol Use Among Older Women: Results from a Cross-Sectional Study of Community Members. *Journal of community health* 44(1):172-177.
- Simmons J, Rajan S, McMahon JM (2012) Retrospective accounts of injection initiation in intimate partnerships. *International Journal of Drug Policy* 23(4):303-311.
- Simoni-Wastila L (2000) The use of abusable prescription drugs: the role of gender. *Journal of women's health & gender-based medicine* 9(3):289-297.
- Sinha R, Fox H, Hong KI, Sofuoglu M, Morgan PT, Bergquist KT (2007) Sex steroid hormones, stress response, and drug craving in cocaine-dependent women: implications for relapse susceptibility. *Experimental and clinical psychopharmacology* 15(5):445-52.
- Summers P, Martin C, Quidgley-Nevaras A (2014) Opioid treatment agreement violations: An institutional experience. *Journal of Pain* 15 (4) S40.
- Taylor OD (2010) Barriers to Treatment for Women With Substance Use Disorders. *Journal of Human Behaviour in the Social Environment* 20:393-409.
- Tuchman E (2003) Methadone and Menopause: Midlife Women in Drug Treatment. *Journal of Social Work Practice in the Addictions* 3(2):43-55.
- Tweed EJ, Miller RG, Schofield J, Barnsdale L, Matheson C (2022) Why are drug-related deaths among women increasing in Scotland? A mixed-methods analysis of possible explanations. *Drugs* 29(1):62-75.
- Tyndall M (2020) Safer opioid distribution in response to the COVID-19 pandemic. *International Journal of Drug Policy* 83:102880.
- United Nations Office on Drugs and Crime (UNODC) (2011) The non-medical use of prescription drugs: Policy direction issues. Available at: <https://www.unodc.org/documents/drug-prevention-and-treatment/nonmedical-use-prescription-drugs.pdf> (accessed 17 April 2022).
- Winchester N (2021) Women's health outcomes: Is there a gender gap? Available at: <https://lordslibrary.parliament.uk/womens-health-outcomes-is-there-a-gender-gap/> (accessed 18 February 2022).

- Yang LH, Wong LY, Grivel MM, Hasin DS (2017) Stigma and substance use disorders: an international phenomenon. *Current Opinion in Psychiatry* 30(5):378-388.
- Zakiniaez Y, Potenza MN (2018) Gender-related differences in addiction: a review of human studies. *Current Opinion in Behavioural Sciences* 23:171–175.