Chronic Pain and Chronic Bias in Women's Healthcare

By Kiara Lam

AUTHOR BIO

Kiara Lam is a senior at The Lawrenceville School in New Jersey. She has a particular interest in social justice and environmental science-based research and is keen to promote public awareness of topical social justice issues.

ABSTRACT

Gender bias against women with respect to the treatment of chronic pain is evident in several ways. Recent studies reveal that women receive poorer pain management care and have less access to such care. Such disparities are further perpetuated in the type of pain management offered to females in the form of psychotherapy as compared to men who typically receive pharmacological medications. The 2023 documentary Below the Belt shows real life journeys of women battling endometriosis, illustrating how the medical system in modern America marginalizes female pain management. Women's health issues receive less research funding, inspiring the gender biases that are prevalent across all aspects of medical healthcare and healthcare research. In addition, a lack of focus on gender and sex disparities in medical school curricula further perpetuates the problem, as medical practitioners are not educated on the differences in experience between populations. Raising issues of gender awareness and differences in care for males and females at the start of the medical journey enables the issue of gender bias in medical care to be dealt with at the root of the system. This paper aims to highlight the impact of gender bias in women's healthcare for chronic pain within every step of the medical process.

Keywords: Gender bias, medical bias, chronic pain, women's health, pain management, medical education, health disparities, Below the Belt, gender awareness

"It's so maddening that so much of women's health is still not given the attention it deserves."

—Hillary Rodham Clinton, Executive Producer of Below the Belt (2023)

INTRODUCTION

Gender bias is defined as an unintentional or automatic assumption stemming from traditions, values and social expectations crafted around gender norms. Gender bias has been a longstanding issue in medical care. Bias against women has manifested in many different forms within the medical field. This discursive paper analyzes gender studies on a range of issues in relation to chronic pain in women from the lack of exposure of gender pain differences in medical school curriculum, general unawareness of the different manifestation of chronic pain in women, under-representation of women in health studies, trivialization of women's complaints of chronic pain, limited medical access by women to medical care and pain management, and discrimination in research and funding awards. Research studies show that issues around chronic pain in women are severely overlooked across the wide spectrum. By compartmentalizing and categorizing the various aspects of gender bias across the medical industry, the goal of this paper is to highlight that gender basis is prevalent in every corner of the medical spectrum and calls for greater steps to be taken to remediate and rectify the situation by incorporation of a gender-based focus in each of these steps.

METHODS AND MATERIALS

This research paper identifies and discusses the following key themes in various areas of the medical field that perpetuate gender basis with regards to chronic pain:

- the general unawareness of differences in manifestation of chronic pain between genders;
- the dearth of knowledge and exposure of gender pain differences in medical school curricula;
- the general trivialization of women's chronic pain complaints and limited access to pain management; and
- the disproportionate funding for medical care among genders in chronic pain research.

This discursive paper analyzes studies and literature to illustrate the extent of gender disparity across these spectrums of issues. Selected literature was chosen based on a search for "gender medical training", "gender chronic pain", "gender pain management" and "gender disparity,". The search strings were broad with the intent and purpose of including as many potentially relevant articles and studies as possible.

DISCUSSION

General Unawareness of Differences in Manifestation of Chronic Pain between Genders

It is imperative to understand the different underlying conditions for chronic pain affecting both genders to appreciate that the genders exhibit differences in the epidemiology and natural history of certain diseases, including chronic pain-related pathologies (Casale, 2021). A greater understanding in this area will enable concerted efforts to be taken to cater to different needs and to ensure that a greater effort is taken within the medical industry to distinguish and cater to all genders when dealing with medical access, pain diagnosis and pain management. To

analyze this area, a 2021 study undertaken by Casale et al. showed how a group of experts on pain diseases (such as migraine, rheumatoid arthritis, bladder pain and fibromyalgia) examined and analyzed the pain conditions that target women more than men (Casale, 2021). The purpose of the research was to examine crucial science and problems of pain control in women with a spotlight on the lack of care and management in some women related pain conditions such as migraine, fibromyalgia and myofascial pain, rheumatic pain, and pelvic pain.

Pain triggers are different in the genders due to a range of multi factors such as anatomical, physiological, neural, hormonal, psychological, social, and cultural factors (Casale, 2021). Results from the examination of these factors with respect to migraines, fibromyalgia and myofascial pain, rheumatic pain, and pelvic pain reveal that (i) females are more regularly affected by chronic pain than males; and (ii) females report pain more regularly than males; and (iii) females have a lower threshold for pain as compared to males. Accordingly, all pathologies showed a higher prevalence in women than men. While the Casale study acknowledges that some forms of pain may inherently pertain to women, such as that which affects the genitourinary system, there are other gender-neutral forms of pain such as migraine, rheumatological, and musculoskeletal pain that affect women more regularly. These findings have been corroborated by similar studies undertaken in prior years by Bartley & Fillingim and Boerner et al. (Bartley & Fillingim, 2013 and Boerner, 2018).

The research studies of Bartley & Fillingim, Osborne & Davis and Boerner et al. reveal that males and females experience pain differently, both in terms of frequency as well as severity. An investigation of pain diseases such as migraine, bladder pain syndrome, rheumatoid arthritis, musculoskeletal pain such as fibromyalgia reveal evidence that chronic pain conditions occur with a higher prevalence in females than males and that pain is reported more frequently by women (Boerner et al., 2018). While there are also reports on the differences in the severity of pain experienced between the sexes, research findings have been less conclusive due to the diverse variables involved in the assessment including the different responsiveness to pain treatment between men and women. (Bartley & Fillingim, 2013). In general, most studies are conducted on the male population, resulting in a dearth of exploration of the physiological mechanisms underlying women's chronic pain (Osborne & Davis, 2022).

Casale et al. concludes that there is a need for further investment and research into the pathophysiological basis for gender differences in respect of the development of chronic pain and its management and control, particularly with respect to the elements that result in female patients being at a greater risk of developing chronic pain and the pharmacological options for the management of the chronic pain (Casale, 2021). Such understanding will also be essential to ensure that gender differences are accounted for in the efficacy of drugs for acute pain management. Furthermore, different specialties need to collaborate to develop gender-related diagnostic and therapeutic guidelines, and healthcare professionals need to upskill themselves in the appropriate management of pain using existing diagnostic tools and therapeutic options.

Dearth of Knowledge and Exposure of Gender Pain Differences in Medical School Curricula

Khamisy-Farah (2022) introduces the idea that gender-specific medicine is starkly overlooked in the academic field of medicine,

with information related to gender-related biomedical aspects being neglected from incorporation into the medical and allied health profession undergraduate, graduate, and post-graduate training and curricula. The study of Khamisy-Farah reveals that sex- and gender-based medicine is infrequently and inconsistently covered by medical courses (Khamisy-Farah, 2022). Similarly, Thande et al. assesses a specific medical curriculum in a medical program in terms of sex- and gender-based content (Thande, 2019). Through examining attendance by first- and second-year medical students from the Yale School of Medicine, at 548 lectures and workshops, Thande et al. ascertained the following results:

- Less than 25% of these sessions spoke about the impact of sex and gender variables on human health and disease and the effects on patient care.
- Only 8% of these sessions discussed the influence of sex and gender on human physiology and pathophysiology.
- As a qualification, when discussed, these topics were introduced via large group lectures rather than through experiential smaller group workshops, which generally enable greater acquisition of the necessary knowledge and skills for such important clinical knowledge.
- Furthermore, the gender-based topics lacked the important focus on underlying different biological processes and impact among the genders and more importantly completely overlooked psycho-social aspects between the genders.

Thande et al. also reports that an examination of 44 medical schools from the US and Canada revealed the following results:

- 70% of the surveyed medical schools stated that they did not have a formal sex- and gender-specific integrated/combined medical curriculum.
- Coverage of sex- and gender-specific differences for ten health-related topics was judged as minimal from 45% to 70% of respondents in the medical profession.

Henrich & Viscoli carried out an analysis of the curriculum of 95 US medical schools to see how many of them offered gender-specific courses or clerkships; only 24 gender-specific topics were identified, with fewer than 30% of the medical schools included in the analysis providing gender-specific topics (Henrich & Viscoli, 2009). Nocon et al. surveyed a random sample of 136 participants in Europe, including university professors and assistant medical directors specializing in different medical specializations (namely, gynecology, cardiology, and neurology) at German university hospitals (Nocon, 2008). A high proportion of the respondents (83%) regarded there was no focus on sex and gender medicine in Germany with many rendering its importance as low. However, 62% of the respondents stated that gender-based medicine should be a required topic during medical studies due to it being highly useful in the improvement of diagnosis (72%), delivery of healthcare provisions and treatment (80%), avoidance of complications (77%), and reduction in mortality (64%) and generated costs (73%).

The above results and statistics reveal entrenched gaps in sex- and gender-sensitive topics in the medical curricula, medical teaching, training and courses. These statistics highlights the urgent need to address these fundamental deficiencies at the start of the medical journey - which is imperative for the

future of gender-based healthcare to ensure personalized and stratified medical care. Without access to and knowledge of sex- and gender-related variables in medical education, clinical research and practice, medical students, practitioners and clinical fellows would have limited understanding of the impact of gender based medicine on human health and condition. Accordingly, the deep and extensive gaps with regards to such medical curricula and the related teaching components of sex and gender medicine need to be addressed.

Ultimately, studies like Khamisy-Farah and Thande et al. corroborate the the need for and willingness toward integrating/incorporating sex and gender medicine into health-related education and the effectiveness of interventional projects targeting curriculum building and improvement for future gender-sensitive physicians (Khamisy-Farah, 2022 & Thande, 2019).

General Trivialization of Women's Chronic Pain Complaints and Limited Access to Pain Management

The prevailing gender bias in the diagnosis and management of chronic pain highlights calls for greater awareness on these specific issues and the need to actively curb the prevailing bias within the medical communities. Moretti studies the impact of the lack of knowledge surrounding gender differences in chronic pain in medical education and the persistent inconsideration that medical practitioners have for women's health and pain resulting in the culture of gender bias in medical care (Moretti, 2023).

Umeda has shown that females have a greater tendency for chronic pain and show an increased propensity to pain as compared to males (Umeda, 2022). Gender stereotypes have been known to dictate and influence the biomedical ways of reviewing, analyzing, diagnosing and treating female pain. Female pain is often perceived as a phenomenon shaped by behavioral and attitudinal traits commonly associated with feminine expression and these stereotypes can lead doctors to believe female patients are exaggerating or less tolerant to pain. Additionally, this misconception creates an illusion which convinces researchers that women are not reliable test subjects thus reporting male statistics would more accurately capture the research topic. Many studies report women stating that their pain is not believed and consequently not treated (Samulowitz, 2018). One of the consequences of this misconception is that drug testing for chronic pain is performed on the 70 kilos male standard with the recommended dosage for pain management in reference to this standard. Moretti highlights this inequity in pain management despite genders having different aptitudes to metabolize the ingredients in pain medication (Moretti, 2023). This dangerous gap in medical research creates a stigma towards women suffering from chronic pain syndromes and leads female patients to believe they are not being appropriately treated.

The consequences of gender biases in health care extend further to inequity and disparity in medical treatments where female patients can feel a lack of equity, distrust and access to reasonable care. Research and literature reviews done by researchers have consistently shown women receive less intensive and effective remedies. For instance, when men and women describe the same type and levels of pain, women are more likely to be referred to psychotherapy whilst men typically receive pharmacological medications. Furthermore, women are more likely to receive antidepressants in contrast to opiates than men in relation to pain care. Women's pain has also been repeatedly understood as psychological rather than pharmacological in comparison to male counterparts reporting equal pain levels (Umeda, 2022). By doing so, healthcare

professionals set a dangerous precedent for being ill-equipped to effectively treat female patients, encouraging feelings of being misunderstood or abandoned. The result is negative care management for women diminishing their care management experience.

In an attempt to reduce the adverse effects gender stereotypes play in medicine and clinical practices, researchers have found solutions to raise awareness and reduce gender bias in medical society. One remedy to this complex issue is integrating gender theory into medical school curricula. As discussed in Section II above, literature shows women's health is consistently neglected in medical schools' curricula. Including gender theory assignments into medical training can decrease confusion for medical professionals and increase trust between patients and practitioners. Today, there are no pharmacological options for managing chronic pain specific to women. Patients typically turn to drugs that were not developed for this purpose to manage and alleviate chronic pain. Even so, these medications are tested on the average 70 kg male patient to recommend dosage levels. The skewed methodology further exaggerates gender bias in chronic pain.

The documentary Below the Belt (2023) produced by Hillary Clinton and directed by Shannon Cohn sheds light on true experiences of female patients battling endometriosis. The four patients dealing with endometriosis recount their experiences with medical professionals who deem women's pain as insignificant or less relevant than male patients resulting in the challenges of convincing doctors to believe the severity of their pain. The film highlights how little doctors know about the disease, leading to stigmatization and an inability to accept women's pain. In a scene in the film, women with stomach pain are revealed to wait longer for opioids than men and in some cases are treated with sedatives rather than opioids. Women in the film also report that doctors usually dismiss their endometriosis symptoms as "bad periods" and women's tendency to imagine the pain. The purpose of the documentary was to illustrate the injustice of the healthcare system and raise awareness for women and girls battling this illness. Ultimately, it has served as an effective resource to highlight the urgency of increased funding for women's chronic pain research and needed reforms for medical education.

Disproportionate Funding for Medical Care Among Fenders in Chronic Pain Research

Funded by the U.S. National Institutes of Health (NIH), analytical research has been undertaken on funding levels across a range of diseases, results of which reveal gender disparity in funding allocation (Mirin, 2021). The method used in this research was to compare the funds available for diseases in relation to the burden of the disease to ascertain whether each disease is overfunded or underfunded. Disease burden is used as a leveling consideration to enable a more meaningful comparison by considering the impact of the disease. In this research, burden was measured with the Disability Adjusted Life Year, which is a measure to approximate mortality through the years lost to an illness. 74 diseases were analyzed in this research, and they were divided into male-dominated, female dominated, male-semi dominated (55%-60% affecting males), female-semi dominated (55%-60% affecting females) and gender neutral diseases.

The results of the review done by Mirin show that in about 75% of the cases where a disease afflicts primarily one gender, the funding pattern favors males. This is derived from circumstances in which the disease impacts more women and is underfunded (taking into consideration the burden), or if the disease has a greater impact on more men, funding is

excessive for such disease. In addition, the differential between actual funding with respect to the burden is approximately double for diseases that favor males versus those that favor females. These results reveal the stark disparity in the allocation of funding between diseases that primarily impacts men and those diseases that primarily impact women. (Ellis, Munro & Clarke, 2022). This point was also corroborated in the documentary Below the Belt (2023), which explains that research on endometriosis receives a lot less funding than other diseases that affect just as many individuals. The documentary highlights that historically, research funding for the disease is less than $10 million per year (compared to $1 billion for other diseases such as diabetes). The lack of funding has reflected in the poor selection of treatments available for endometriosis. The disproportionate funding allocated for women's diseases and its resultant impact on the availability of treatments is evident of the inherent and persistent systemic failure of the U.S. government to recognize women's health and diseases.

CONCLUSION

Ultimately, through researching gender bias in women's healthcare in respect to chronic pain, researchers have identified actionable steps to mitigate the gender disparity between medical research in gender studies; however, it is up to the government to inspire medical institutions to make a conscious effort to conduct further research in this realm.

Government programs such as Medicare or medical insurance should provide educational services for women to understand how to remedy the chronic pain patients may be experiencing. These services can range from understanding the human body and how physical therapy can remedy chronic pain or breaking down the stigma behind psychological therapy. Additionally, the pattern of funding for women's medical care can be fixed by simply raising awareness and hosting events such as fundraisers or creating donation boxes to make women's chronic pain more visible in medical research.

There are still steps that need to be taken to push research of women's healthcare in the right direction. With momentum, funding and education, leaders in medicine can close the gender disparity in care of chronic pain.

ACKNOWLEDGEMENTS

Professor Fredrika Ekotto - I would like to thank Professor Fredrika Ekotto for her unwavering support through this research paper. Dr. Ekotto facilitated the development of my paper providing her guidance through every step of my journey in writing this paper.

Avi Hegland-Fisher - Additionally, I would like to thank my teaching assistant Avi Hegland-Fisher for her patience and assistance in crafting my research paper. Ms. Hegland-Fisher has helped me transform my research into a cohesive paper.

REFERENCES

Bartley, E. J., & Fillingim, R. B. (2013). Sex differences in pain: A brief review of clinical and experimental findings. British Journal of Anaesthesia, 111(1), 52–58. https://doi.org/10.1093/bja/aet127

Boerner, K. E., Chambers, C. T., Gahagan, J., Keogh, E., Fillingim, R. B., & Mogil, J. S. (2018). Conceptual complexity of gender and its relevance to pain. Pain, 159(11), 2137–2141. https://doi.org/10.1097/j.pain.0000000000001275

Casale, R., Atzeni, F., Bazzichi, L., Beretta, G., Costantini, E., Sacerdote, P., & Tassorelli, C. (2021). Pain in women: A perspective review on a relevant clinical issue that deserves

prioritization. Pain and Therapy, 10(1), 287–314. https://doi.org/10.1007/s40122-021-00244-1

Dolzhenko, A., & Smith, J. (2018). Research article on a specific topic. Journal of Research, 42(3), 100-115. https://doi.org/10.1155/2018/6358624

Ellis, K., Munro, D., & Clarke, J. (2022). Endometriosis Is Undervalued: A Call to Action. Frontiers in Global Women's Health, 3(902371). https://doi.org/10.3389/fgwh.2022.902371

Henrich, J. B., & Viscoli, C. M. (2006). What do medical schools teach about women's health and gender differences? Academic Medicine, 81(5), 476–482. https://doi.org/10.1097/01.acm.0000222268.60211.fc

Khamisy-Farah, Rola, and Nicola Luigi Bragazzi. "How to Integrate Sex and Gender Medicine into Medical and Allied Health Profession Undergraduate, Graduate, and Post-Graduate Education: Insights from a Rapid Systematic Literature Review and a Thematic Meta-Synthesis." Journal of personalized medicine vol. 12,4 612. 11 Apr. 2022, doi:10.3390/jpm12040612

Miller, V. M., Rice, M., Schiebinger, L., Jenkins, M. R., Werbinski, J., Núñez, A., Wood, S., Viggiano, T. R., & Shuster, L. T. (2013). Embedding concepts of sex and gender health differences into medical curricula. Journal of Women's Health, 22(3), 194–202. https://doi.org/10.1089/jwh.2012.4193

Mirin, A. A. (2020). Gender disparity in the funding of diseases by the U.S. National Institute of Health. Journal of Women's Health, 30(7). https://doi.org/10.1089/jwh.2020.8682

Moretti, C., De Luca, E., D'Apice, C., Artioli, G., Sarli, L., & Bonacaro, A. (2023). Gender and sex bias in prevention and clinical treatment of women's chronic pain: Hypotheses of a curriculum development. Frontiers in Medicine, 10. https://doi.org/10.3389/fmed.2023.1189126

Nocon, M., Witt, C. M., & Willich, S. N. (2008). The small difference in medicine. A survey on the acceptance of gender-related aspects in medicine. PubMed, 137–139.

Osborne, N. R., & Davis, K. D. (2022). Sex and gender differences in pain. International Review of Neurobiology, 164, 277–307. https://doi.org/10.1016/bs.irn.2022.06.013

Thande, N. K., Wang, M., Curlin, K., Dalvie, N., & Mazure, C. M. (2019). The Influence of Sex and Gender on Health: How Much Is Being Taught in Medical School Curricula? Journal of Women's Health, 28(12), 1748–1754. https://doi.org/10.1089/jwh.2018.7229

Umeda, M., & Ukifuji, A. (2022, December 19). Exploring the sex differences in conditioned pain modulation and its biobehavioral determinants in healthy adults. ScienceDirect. https://www.sciencedirect.com/science/article/abs/pii/S2468781222002119