

# More than Cramps in Scrubs: Exploring Dysmenorrhea among Women Healthcare Workers

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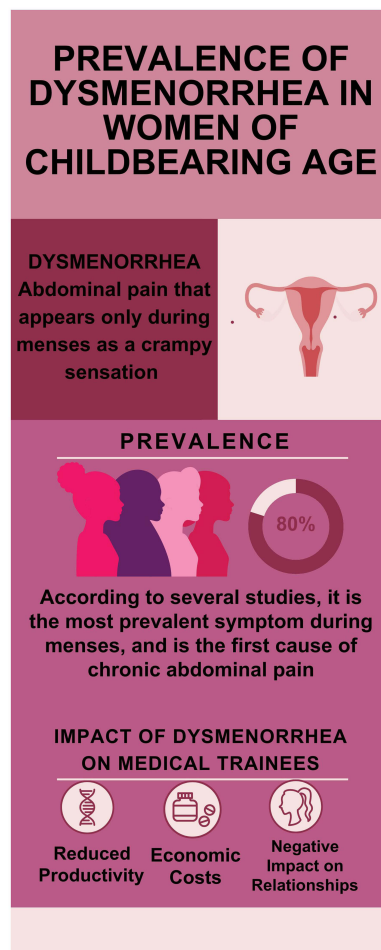
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**Abstract:** Though understudied, dysmenorrhea, a painful cramping sensation occurring near and during menses, is the most prevalent gynecological disorder among women of reproductive age, affecting 50–90% of the global population. Contributing factors of this disorder include poor medical assessment, lack of consciousness, gender bias, moderate to high levels of stress, and depression and anxiety. Among school students and healthcare trainees, dysmenorrhea contributes to short-term absenteeism, lower productivity, creativity, and job performance. Among medical trainees, dysmenorrhea has been found to impact daily activities to a disabling degree in nearly one third of instances, resulting in difficulties in relationships and even self-isolation. Dysmenorrhea further produces substantial global economic losses and higher healthcare costs. To begin to alleviate the extensive issue of dysmenorrhea, we must increase awareness to fully understand its prevalence, risk factors, and potential for effective, affordable, and accessible treatments. Concurrently, our clinical environment must adopt a standard description and assessment tool to prevent, measure, and monitor dysmenorrhea, while on a global scale, we must develop and widely disseminate nationwide labor regulations that address the workforce impact due to the effects of dysmenorrhea.

**Keywords:** women healthcare workforce, impact, gynecological disorder, menstrual pain

Though one may imagine that pain is a topic often discussed within the medical community, it is in fact a commonly overlooked subject, particularly for women. Dysmenorrhea is a painful cramping sensation often accompanied by other biological symptoms, including sweating, tachycardia, headaches, nausea, vomiting, diarrhea, tremulousness, breast tenderness, fatigue, and emotional changes, all occurring near menses (Figure 1).<sup>1–3</sup> Though understudied, dysmenorrhea is the most prevalent gynecological disorder among women of reproductive age.<sup>4</sup> It affects 50–90% of the global population, with higher rates among younger women,<sup>5</sup> though research has found that women over 30 years old who work rotating shifts (such as nurses, residents, and fellows) have a 2.5 greater risk of suffering from dysmenorrhea than other populations.<sup>6</sup> Physical disturbances, including insomnia, mood changes, and irritability, are also present in nearly 50% of women.<sup>2</sup> Though intense pain has been reported in 30% of women with dysmenorrhea,<sup>7</sup> studies conducted among healthcare providers report moderate to severe pain in 86% of cases, suggesting symptoms heightened to an even greater extent.<sup>8</sup>

Protective factors for dysmenorrhea include parity and use of oral contraceptives,<sup>7</sup> while risk factors include younger age, nulliparity,<sup>7</sup> familiar history of dysmenorrhea, young age at menarche (<12 years), longer cycles, irregular cycles, heavy menstrual flow, and even smoking, which has been linked to increased duration of symptoms.<sup>9</sup> Other contributing factors may include moderate to high levels of stress,<sup>8,10</sup> sleep disorders,<sup>10</sup> history of sexual abuse, as well as depression and anxiety. In fact, extensive research has shown that the presence of depression not only decreases the pain threshold of dysmenorrhea but also intensifies the sensation of menstrual pain.<sup>11</sup> Notably, all of these risk factors have a higher frequency in physicians and other healthcare workers in training.<sup>12</sup> Such reports are particularly alarming due to how



**Figure 1** Overview of dysmenorrhea.

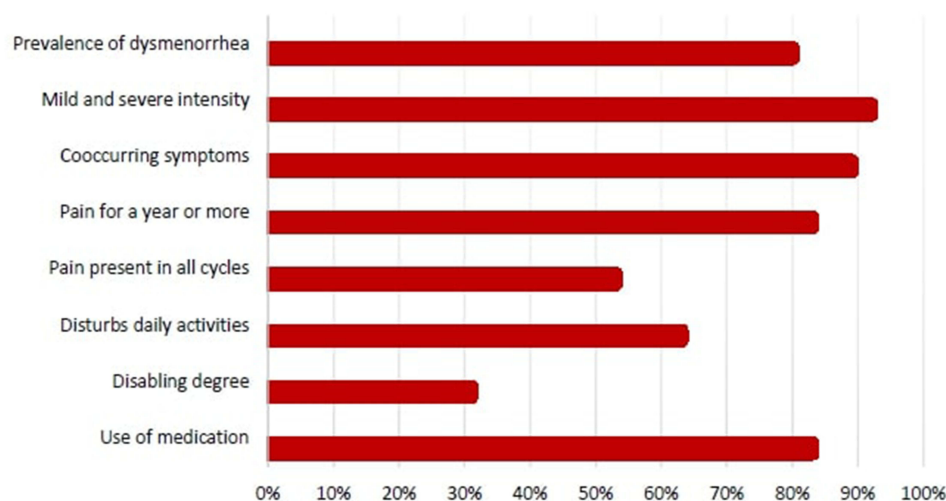
a 2016 meta-analysis already revealed a depression prevalence rate of 28% among medical trainees, with figures as high as 55% documented in certain constituent studies,<sup>13</sup> and that being a woman has been considered a risk factor for developing depression in healthcare workers.<sup>12</sup> By contrast, the prevalence of depression in the general population stands at 3.8%.<sup>14</sup> Similarly, the prevalence of anxiety among women healthcare workers is reported to be 44%<sup>15</sup> and as high as 65% in health sciences students,<sup>16</sup> whereas only one-quarter of the general population is estimated to be susceptible to anxiety.<sup>17</sup> As such a wide range of factors may contribute to this pressing disorder, clinicians, supervisors, and faculty must proactively look for dysmenorrhea routinely in order to make a diagnosis, identify risk factors, and address possible solutions to mitigate its impact. However, several barriers to doing so persist, particularly for young women in medical training and the healthcare workforce.

One contributing factor to poor medical assessment of dysmenorrhea is that primary dysmenorrhea, contributing to 2/3 of overall cases,<sup>18</sup> lacks an underlying pathological explanation; this absence of a specific disease tends to delegitimize the pain. Unsurprisingly then, healthcare providers report that only 30% of women with dysmenorrhea ever consult a physician about their symptoms,<sup>7</sup> while studies of healthcare trainees report how the proportion may be as low as 6% for this population. Furthermore, while nearly 55% of women practice self-care management, less than half utilize analgesics,<sup>3</sup> and even if used, at least 73% of healthcare trainees misuse them;<sup>19</sup> one systematic review found that the most used analgesic was paracetamol, which has not demonstrated superiority over placebo.<sup>20</sup> Furthermore, dysmenorrhea is understudied as relatively few reports of this topic exist, with many including various menstrual symptoms or general pelvic pain. Gender bias could be a potential contributing factor as to why dysmenorrhea remains understudied, as it is considered “the tax” that women must pay, instead of a pressing medical disorder.<sup>21</sup> This lack of consciousness is

in fact another impediment to effectively diagnosing and managing dysmenorrhea, as the main sources of menstrual information are family, friends, and teachers, accounting for 63%, 52%, and 23% of informational sources, respectively.<sup>3</sup> The consideration of menstrual pain as “normal” is only exacerbated due to its association with family history.<sup>3</sup>

Among school students, menstrual pain is the primary cause of short-term absenteeism, attributed to both the intensity of the pain itself and the presence of its associated symptoms.<sup>8</sup> While the prevalence of dysmenorrhea is reported to be similar in high-income countries (HICs) and low- and middle-income countries (LMICs), women in LMICs experience a higher prevalence of absenteeism (26%-52%<sup>22</sup> vs 12%<sup>2</sup>). Among healthcare personnel, evidence suggests that female healthcare workers perceive that pain is not a sufficient reason for absenteeism, expressing fear of potential repercussions from their professors and superiors for such issues. In medical training environments, reluctance to admittance of having mental health issues may be conveyed to medical students in a “hidden curriculum”, as well as in faculty members’ licensing and privileging of certain applications that may more outwardly display principles of “patient safety”, only perpetuating stigma.<sup>23</sup> These factors contribute to presenteeism, the culture of employees continuing to work even when they are not fully functioning, which occurs to 93% of women health providers and is particularly prevalent among the female experiencing more severe menstrual pain.<sup>24</sup> In fact, many medical trainees occult their symptoms so that they are not perceived as “weak” or “lazy” by their peers, for in healthcare training, “sacrifice” is often synonymous with “dedication”.<sup>3</sup> Such strategies are not surprising, given the abundance of stigma and shame surrounding menstruation on a global scale, as well as media depictions of how menstruating women are stereotyped as “violent, irrational, emotionally labile, out-of-control, and physically or mentally ill”, thereby subjecting them to ridicule, dismissal, and trivialization.<sup>25</sup>

Resultingly, among female healthcare trainees suffering from dysmenorrhea, diminished concentration levels of nearly 50% and a reduction of other academic activities by over 30% have been reported.<sup>2</sup> It has been found that these workers experiencing recurrent dysmenorrhea also have lower productivity, creativity, and job performance.<sup>22</sup> One study among nurses found dysmenorrhea to relate to poor work motivation in 72% of nurses, communication problems between teammates and patients in at least 40% of nurses, negative impact on service quality in 70% of cases, and even increased team workload (69%), conflict with executives (26%), and increased exploitation (51%).<sup>8</sup> More so, in a novel study examining dysmenorrhea among medical students in Colombia, an 80% prevalence of menstrual pain was identified, impacting daily activities in 63% of cases and even reaching a disabling degree in 31% of instances (Figure 2), allowing us to recognize that this disorder does not discriminate based on country of origin or trainee level.<sup>26</sup> Given how high rates of burnout and attrition already characterize our healthcare workforce, the potential impact of dysmenorrhea becomes even more concerning.<sup>6</sup>



**Figure 2** The prevalence and characteristics of dysmenorrhea among medical students in Colombia from *Prevalencia de Dismenorrea en Mujeres en Edad Fértil* (Yáñez-Sarmiento et al, 2023).<sup>26</sup> Highlights the percentage of students who experienced dysmenorrhea, its intensity, concurring symptoms, pain length, pain presence in all cycles, disruption, the degree to which dysmenorrhea symptoms were disabling, and the use of medication.

For women everywhere, the impact on social functioning remains high, with the degree of dysmenorrhea symptom severity being positively associated with the magnitude of impact on daily life.<sup>27</sup> A reduction of over 37% has been reported in activities such as practicing sports and social outings,<sup>2</sup> while another study found that over 20% of health science trainees over their 20s, experiencing dysmenorrhea, faced difficulties in their relationships, with a notable 78% resorting to self-isolation.<sup>19</sup> Financial toxicity is prominent as well; though there remains a lack of specific studies regarding economic losses due to dysmenorrhea, few studies describe costs related to menstrual disturbances. One 2022 systematic review reported that combined costs (health care, prescription, and indirect costs) of chronic pelvic pain (dysmenorrhea is the first cause of this type of pain) in the US ranged from \$1,367- \$7,043 per woman per year.<sup>28</sup> With 15% of women requiring 1–3 days off from work because of pain severity,<sup>29</sup> dysmenorrhea is responsible for losing at least 140 million work hours yearly in the US, producing an estimated yearly loss of at least \$2.8 billion.<sup>28</sup> Healthcare costs, too, are 2 to 3 times higher in women with dysmenorrhea than in women who do not present this symptom.<sup>30</sup>

To begin to alleviate the extensive issue of dysmenorrhea, our first step must be to increase awareness. Not until we undo the association of dysmenorrhea as a normal condition can we fully understand the symptom's prevalence, risk factors, and potential for effective, affordable, and accessible treatments. Concurrently, our clinical environment must adopt a standard description and assessment tool to routinely prevent, measure, and monitor dysmenorrhea development, routinely screening for risk factors such as familial history, lifestyle factors, and mental health disorders to better provide education and potential treatment options. On a global scale, we must acknowledge the issue of school and workplace absenteeism and advocate for developing and widely advertising nationwide labor regulations that rapidly address the workforce impact due to the effects of dysmenorrhea. Such governance will not only aid in mitigating disparities in academic and occupational settings, as this problem contributes to perpetuating gender inequity, but may also reduce the resultant economic impact of workforce absenteeism if policies regarding attendance and productivity are effectively implemented. Nations with public policies regarding menstrual issues include Japan, Taiwan, China, South Korea, Indonesia, Zambia, and Mexico, though some professional organizations in the UK, India, and Australia have also implemented policies.<sup>31</sup> Notably, it has been found that nurses in Taiwan prefer to not exercise their rights associated with such laws due to concern regarding pay cuts, emphasizing the importance of creating widely applicable public policies that account for potential institutional barriers to using an official leave of absence for dysmenorrhea.<sup>8</sup>

As the substantial issue of dysmenorrhea encompasses women's functioning, physical, and mental well-being, with resulting workforce and financial repercussions on a global scale, we must collectively and collaboratively increase discussions, workforce policies, labor regulations, and actionable clinical assessment tools to improve the management of this under-discussed disorder, particularly in the healthcare setting. In this way, we may contribute to a more equitable clinical landscape, workforce, and society, astutely addressing and improving symptoms that have historically been overlooked and undertreated.

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