

Research Article

Addressing reproductive healthcare disparities: strategies for achieving health equity

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Abstract

Reproductive health care disparity is a significant public health issue that affects many populations. This disparity stems from various factors, including race, ethnicity, socioeconomic status, geographic location, and education level. Such inequality results in adverse health outcomes such as unintended pregnancy, infertility and sexually transmitted infections among certain populations. Therefore, addressing reproductive health care disparities requires increasing access to affordable and comprehensive reproductive health services, promoting culturally competent care, improving access to family planning services and addressing barriers to care. Furthermore, promoting comprehensive sexuality education and addressing the root causes of inequality are also crucial in eliminating reproductive health care disparities. By addressing these disparities, we can ensure that all individuals have equal access to quality reproductive health care and services, leading to improved health outcomes for everyone.

Introduction

Reproductive healthcare, including access to reproductive endocrine treatments, is a complex and important issue in the United States. Infertility is often not given the same level of recognition or treatment as other medical conditions, which can lead to a lack of resources and support for those struggling with infertility. It's important for society to recognize that infertility is a medical condition that can have a significant impact on individuals' lives and that there should be greater efforts to provide access to comprehensive fertility care and support. By recognizing infertility as a disease, there may be more funding for research, insurance coverage for fertility treatments, and greater public awareness of the issue.

Fertility health disparities refer to differences in access to and outcomes of fertility treatments among certain population groups, such as those based on race, ethnicity, socioeconomic status, or location. These disparities can result from a combination of factors, including differences in access to healthcare, financial resources and cultural attitudes toward fertility. These disparities in access to infertility treatment can have significant consequences for individuals and families. Infertility can cause emotional and psychological distress and lack of access to treatment can exacerbate this distress [1,2].

Materials and methods

Following the Preferred Reporting Items for Systematic

More Information

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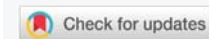
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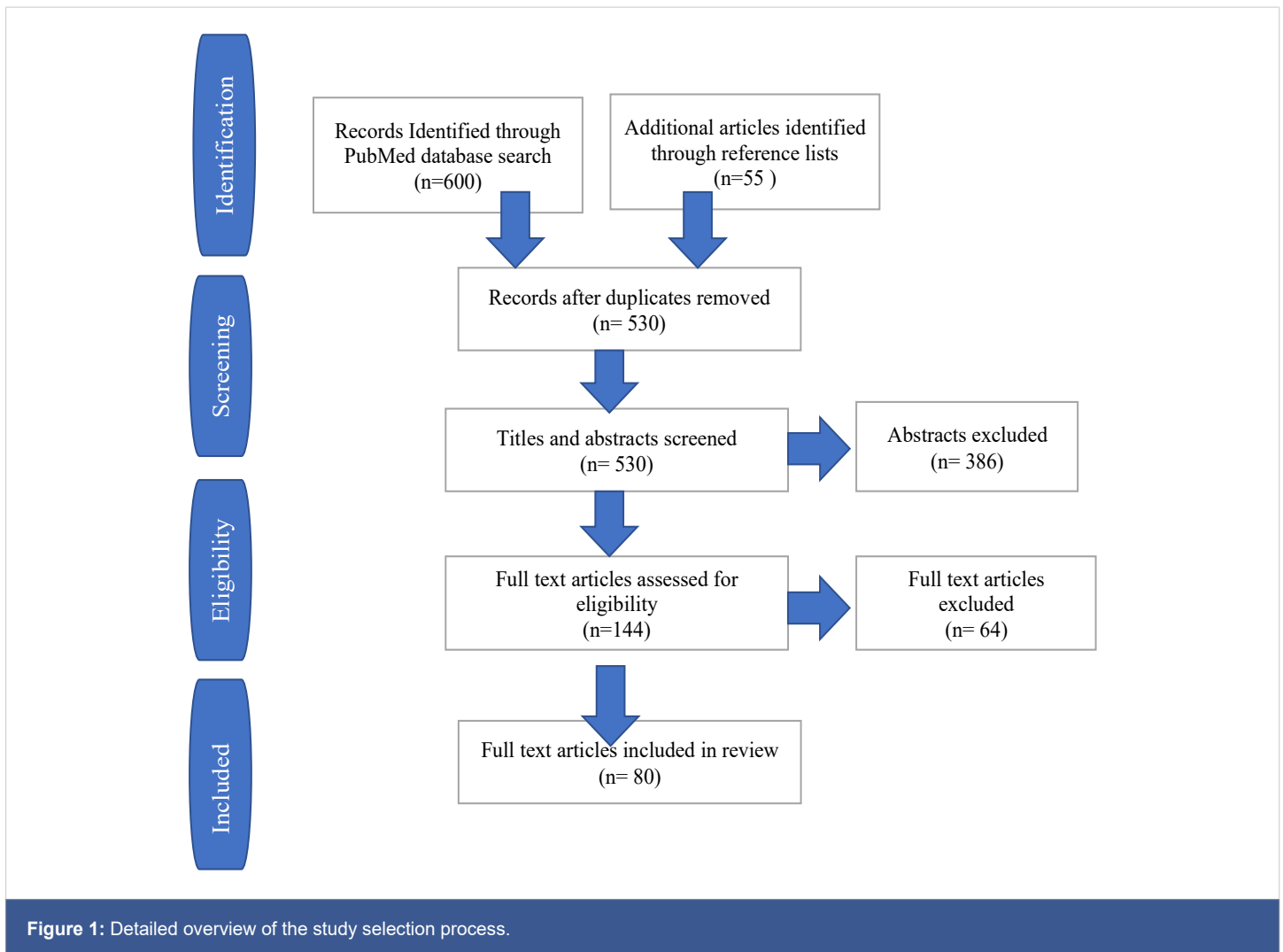
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Reviews and Meta-analyses (PRISMA) guidelines, we conducted a systematic review. A comprehensive search of the PubMed database was performed using the keywords "reproductive health" and "disparity" from 1996 to February 2023. Only articles published in English were included. A total of 200 articles were initially identified. The reference lists of relevant articles and review articles were also evaluated and relevant documents were reviewed for eligibility for inclusion. Articles that focused on the effect of disparity on reproductive health were included in the review. Please refer to Figure 1 for a detailed overview of the study selection process.

A review of the available research has demonstrated that lack of access to infertility treatment can lead to delayed childbearing and reduced fertility, resulting in a poor quality of life and increased healthcare costs. Some examples of specific fertility health disparities include higher rates of infertility among certain racial and ethnic groups and disparities in access to *in vitro* Fertilization (IVF) among low-income individuals. Despite progress in recent years, significant disparities remain in access to these treatments for marginalized communities, including low-income individuals and individuals from racial and ethnic minority groups.

One of the primary barriers to access to reproductive endocrine treatments is the cost. These treatments can be expensive and many individuals, particularly those from low-income families or without insurance coverage, may not



be able to afford them. People from lower socioeconomic backgrounds may face financial barriers to accessing fertility treatments and they may also experience higher stress levels that can affect fertility. A study published in the *New England Journal of Medicine* in 2016 found that the out-of-pocket cost for one cycle of IVF can range from \$12,000 to \$17,000 (Mandating Coverage for Fertility Preservation) [3]. Studies have shown that uninsured women are less likely to receive fertility treatments than insured women and have lower live birth rates from these treatments.

Similarly, low-income women are less likely to receive fertility treatments than higher-income women and have lower live birth rates from these treatments [4-6]. Racial and ethnic disparities also contribute to unequal access to reproductive endocrine treatments. Studies have shown that individuals from minority groups, such as African American and Hispanic individuals, have less access to these treatments than white individuals [7-14]. Additionally, certain racial and ethnic groups may face cultural barriers to seeking fertility treatment or may be underrepresented in clinical research on fertility. Multiple studies have found that African American women were less likely to receive fertility treatments than

white women, even when controlling for income and insurance status [2,10,15]. Similarly, a study published in the journal *Sterility Fertility* found that Hispanic women were less likely to receive infertility treatments than white women and had lower live birth rates from these treatments [9].

Geographic disparities can also have significant consequences for individuals and families. Rural and low-income areas may have fewer healthcare providers who specialize in reproductive endocrine treatments, making it difficult for individuals in these areas to access these services. The lack of access to infertility specialists can lead to delayed diagnosis and treatment, which can reduce the chances of successful pregnancies. Additionally, individuals living in rural or low-income areas may not have access to the same range of treatments and technologies as those living in urban areas which can also reduce the chances of successful pregnancies. Several studies have shown significant geographic disparities in access to infertility specialists in the United States. These studies revealed that the density of infertility specialists was higher in urban areas compared to rural areas, and higher in states with higher median household incomes. As a result, individuals living in rural or low-income areas may have to



travel long distances to see an infertility specialist, which can be costly and time-consuming. [16-25] Several studies have demonstrated the existence of fertility health disparities affecting different groups of individuals. For instance, research published in the *American Journal of Obstetrics and Gynecology* in 2020 and *Contraception* found that states with more restrictive abortion laws had fewer infertility specialists, making it difficult for people to access fertility services [26,27].

Additionally, a study published in the *Journal of Health Care for the Poor and Underserved* in 2020 revealed that rural women were less likely to receive fertility treatments and had lower live birth rates than urban women, compounded by financial barriers in accessing care in certain regions [28]. Further, a 2021 study published in the *Journal of Assisted Reproduction and Genetics* showed that individuals living in rural areas were less likely to receive infertility treatment than those in urban areas and also had lower live birth rates [20]. Other studies indicated that areas with healthcare provider shortages also experienced lower live birth rates from infertility treatments [29,30].

LGBT+ individuals and couples may also face unique challenges to starting a family, including a lack of legal recognition for non-biological parents and access to fertility treatments that cater to their specific needs. Studies demonstrate that LGBTQ+ individuals are less likely to receive infertility treatment than cisgender and heterosexual individuals [31-37]. Similarly, individuals with disabilities are less likely to receive infertility treatment than those without disabilities, which can pose challenges for starting families [38,39]. Women, who are more likely to experience infertility than men, may face societal and cultural pressures to have children, with Indigenous women, LGBTQ+ individuals, and incarcerated women being disproportionately affected [40]. Immigrants may also experience barriers to accessing infertility treatments due to a lack of insurance coverage and cultural and linguistic challenges [41].

Another group disproportionately affected by fertility health disparities is cancer survivors who have undergone chemotherapy and radiation. These treatments can lead to infertility, and these individuals may face additional challenges in accessing fertility preservation options such as egg or sperm freezing. Studies have shown that cancer patients may have limited access to fertility preservation, and may experience financial, psychological, and logistical barriers to preserving their fertility [42-50]. Fertility health disparities also affect men, as male infertility is a significant issue caused by a variety of factors such as environmental toxins, genetic conditions, and lifestyle factors. Men may face barriers to accessing care and support for their infertility, and research on male infertility is less well-developed than research on female infertility [51-53]. Lack of knowledge and awareness about reproductive endocrine treatments among marginalized communities, as well as cultural and

language barriers, can also be significant barriers to access [54]. Disparities in fertility centers exist due to differences in the availability and quality of fertility care and treatments among different geographic regions and population groups. These disparities can result from differences in access to healthcare, financial resources and cultural attitudes toward fertility. It is important to note that not all fertility facilities are the same, and the services and treatments offered can vary depending on the facility. When looking for a fertility facility, it is important to research the facility's success rates, the qualifications of its staff, and the services they offer [55]. Differences in the availability and quality of fertility care provided by fertility doctors also exist among different geographic regions and population groups. These disparities can result from differences in access to healthcare, financial resources, and cultural attitudes toward fertility. For example, certain areas may have a shortage of fertility specialists, which can make it difficult for individuals in those areas to receive the care they need. Research has shown that people of color are underrepresented among fertility specialists, which can make it more difficult for patients from these communities to find a doctor who understands their unique needs and cultural perspectives. A study published in the *Journal of Fertility and Sterility* in 2021 found that Underrepresented Minority (URM) residents were less likely to apply and match into infertility fellowships compared to non-URM residents. The study also found that URM residents who did match into fellowships were more likely to withdraw or not complete the program compared to non-URM residents [56]. Another study published in the *Journal of Women's Health* in 2021 found that women were underrepresented in infertility fellowship programs, with only 20% of fellows being female. The study also found that female fellows were less likely to be hired for academic positions after completing the fellowship, compared to male fellows. These studies suggest that there may be disparities in the acceptance and completion of infertility fellowship programs for underrepresented groups, including minority residents and women [57]. Several studies found that fewer infertility fellowship programs were offered in rural areas compared to urban areas, which can make it difficult for individuals living in these areas to access these training opportunities [58-63]. Addressing fertility health disparities requires a multi-faceted approach. One solution is to increase access to fertility care and treatments by implementing programs such as Medicaid funding for fertility treatments and increasing the representation of diverse populations in clinical research on fertility. Additionally, addressing the underlying social determinants of health, such as poverty and racism, can also help reduce fertility health disparities [64-67]. Another crucial aspect of addressing fertility health disparities is increasing education and awareness about fertility and fertility treatments, particularly among groups that may be disproportionately affected by these disparities. This may involve collaborating with community-based organizations, healthcare providers, and other stakeholders



to provide information and resources on fertility. It's also important to address common misconceptions and cultural attitudes that can impact access to care. Providing culturally sensitive care and addressing language barriers is also essential in reducing fertility health disparities. This can include having a diverse staff, translation services and providing patient education materials in multiple languages. It's crucial to involve patients and community members in the design, implementation, and evaluation of programs and policies aimed at addressing fertility health disparities. Engaging with affected communities can help ensure that interventions are tailored to their specific needs and are more likely to be effective. This can involve working with healthcare providers, community-based organizations and policymakers to address the underlying social determinants of health that impact access to fertility care.

Additionally, partnerships between fertility centers and community-based organizations can provide education, resources, and support to underserved communities. A coordinated and collaborative approach is also important in addressing fertility center disparities. Increasing access to telemedicine services in rural and underserved areas is another strategy that can help overcome some of the barriers that patients in these areas may face when trying to access fertility care. Telemedicine can connect patients with specialists remotely, improving access to care [68,69].

Finally, increasing research on fertility and infertility among diverse populations is critical. This can include increasing the diversity of participants in clinical trials, as well as conducting research specifically on the fertility needs and experiences of underserved communities. Such research can help identify specific disparities and barriers that affect these communities and inform the development of targeted interventions to improve access to fertility care [70].

It is crucial to have an inclusive and equitable approach to running fertility centers. This entails implementing policies that ensure patients are not discriminated against based on factors such as race, ethnicity, gender, sexual orientation, religion, or any other background and that they have access to the same level of care. Increasing awareness about the availability of financial assistance programs for fertility treatments, as well as alternative financing options like loans, grants and crowdfunding can enable those who cannot afford treatments to access them. Insurance companies have also started to cover infertility treatments, which can be particularly beneficial for low-income individuals and families who may have been unable to afford treatments otherwise [71,72]. Furthermore, making affordable and accessible housing available for low-income individuals and families is essential, as studies have shown that stable housing can positively impact fertility [73]. Similarly, providing affordable and accessible childcare can also positively impact fertility, particularly for low-income individuals and families [74].

Advocating for policies that promote work-life balance, such as paid parental leave, flexible work hours, and affordable childcare, can help individuals and couples plan for and start families.

It is equally important to increase access to mental health services for individuals and couples dealing with infertility. Providing counseling, support groups, and other resources can help patients cope with the emotional and psychological impact of infertility. This is especially crucial for underrepresented groups who may face additional stressors related to their race, ethnicity, socioeconomic status, or other factors [75]. Community-based resources and support groups can also be helpful for individuals and couples dealing with infertility, as they can connect them with others who are going through similar experiences.

Raising awareness about the impact of environmental toxins and lifestyle factors on fertility, as well as advocating for policies that promote environmental health, can help to regulate toxins and chemicals known to affect fertility and promote healthy lifestyles to maintain fertility [76]. Increasing the transparency and accountability of fertility centers by publishing their success rates and staff qualifications can help patients make informed decisions about where to receive care and encourage centers to improve their quality of care [77,78]. Another solution is to increase the availability of alternative fertility treatments, such as acupuncture, herbal medicine, and other traditional medicine, for individuals who may not have access to conventional treatments or prefer not to use them [19]. It is also crucial to increase access to education and training for individuals and couples who wish to conceive using natural methods such as natural family planning, timed intercourse, and fertility awareness [79]. Moreover, providing education and resources for individuals and couples who wish to conceive using adoption or surrogacy can help [80]. It's also important to address the impact of systemic racism and discrimination on fertility center disparities. This can include advocating for policies and practices that address racism and discrimination within the healthcare system, as well as working with community-based organizations to provide education and resources on these issues.

Addressing fertility doctor disparities is a complex issue, and a multifaceted approach will be necessary to address the different factors that contribute to these disparities. It's worth noting that a collaborative effort between healthcare providers, policymakers, community-based organizations and patients themselves is necessary to address disparities. Solutions that may help address fertility doctor disparities include increasing fellowship spots for reproductive infertility is one potential strategy that could help address fertility doctor disparities which need increasing public and private funding for research and education on fertility and infertility among diverse populations. This can include funding for basic science research on the causes of infertility,



as well as funding for clinical research on new treatments and technologies. Implement targeted recruitment and retention efforts for underrepresented groups: This can include offering mentorship and networking opportunities, a diverse selection committee in the fellowship program, providing support for work-life balance and family-friendly policies and offering scholarships or other financial incentives to help underrepresented groups attend and complete the programs.

Additionally, creating partnerships between fertility clinics and community-based organizations to provide education, resources, and support to underserved communities can be helpful. Fertility disparities are a multifaceted issue that requires a comprehensive approach. This paper explores several solutions to address fertility disparities, including increasing access to care, addressing financial, sociocultural, and emotional barriers, increasing funding for research and education, increasing the diversity of the healthcare workforce, addressing the underlying social determinants of health, increasing the availability of community-based resources and support groups, having a comprehensive and inclusive approach, encouraging insurance companies to cover fertility treatments, increasing transparency and accountability of fertility clinics, advocating for policies that promote work-life balance and environmental health, increasing the availability of affordable and accessible housing, providing education and resources for individuals and couples who wish to conceive using adoption or surrogacy, creating partnerships between fertility clinics and community-based organizations, increasing the number of fellowship spots for reproductive infertility, building a comprehensive database to track fertility disparities and success rates across different population groups, providing culturally-appropriate interventions and communication methods, providing training and education for healthcare providers, implementing policies and programs to address the underlying social determinants of health, providing education and resources on fertility preservation options, increasing funding for research and education on fertility, partnering with community-based organizations and advocacy groups, encouraging the inclusion of diverse perspectives in the development of policies and programs related to fertility and infertility, increasing accessibility and affordability of fertility treatments, providing education and resources on egg freezing and sperm freezing options, providing education and resources on fertility options for LGBT individuals and couples, and encouraging greater representation of marginalized communities in scientific research and clinical trials. These solutions should be used in a coordinated and collaborative way.

Conclusion

In conclusion, addressing fertility disparities is a complex issue that requires a multifaceted approach that addresses the various factors that contribute to these disparities. Solutions

to addressing fertility disparities include increasing access to care, addressing financial barriers, addressing socio-cultural and emotional barriers, increasing funding for research and education, increasing awareness and education, increasing the diversity of the healthcare workforce, addressing the underlying social determinants of health, increasing the availability of community based resources and support groups, having a comprehensive and inclusive approach, encouraging insurance companies to cover fertility treatments, increasing transparency and accountability of fertility clinics, advocating for policies that promote work-life balance, advocating for policies that promote environmental health, increasing the availability of affordable and accessible housing, providing education and resources for individuals and couples who wish to conceive using adoption or surrogacy, creating partnerships between fertility clinics and community-based organizations, increasing the number of fellowship spots for reproductive infertility, building a comprehensive database to track fertility disparities and success rates across different population groups, providing culturally-appropriate interventions and communication methods, providing training and education for healthcare providers, implementing policies and programs to address the underlying social determinants of health, providing education and resources on fertility preservation options, increasing funding for research and education on fertility, partnering with community-based organizations and advocacy groups, encouraging the inclusion of diverse perspectives in the development of policies and programs related to fertility and infertility, increasing accessibility and affordability of fertility treatments, providing education and resources on egg freezing and sperm freezing options, providing education and resources on fertility options for LGBT individuals and couples, and encouraging greater representation of marginalized communities in scientific research and clinical trials. All these solutions should be used in a coordinated and collaborative way.

Finally, it's important to have a comprehensive and inclusive approach to addressing fertility center disparities that consider the unique needs and experiences of different population groups. This can include engaging with patients and community members to understand their perspectives and develop interventions that are tailored to their specific needs. Addressing fertility center disparities is not just a healthcare issue, but also requires addressing the underlying social and economic issues that impact access to care, such as poverty, discrimination and lack of education, which are also fundamental determinants of health and well-being.

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Supplemental Table



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