LEVERAGING TECHNOLOGY AND INNOVATION TO ADVANCE WOMEN'S HEALTH RESEARCH

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Abstract:
In the quest to advance women's health research, the embrace of technology and innovation stands as a beacon of hope and transformation. This journey is not just about introducing cutting-edge devices or sophisticated algorithms into the medical field; it's about fundamentally changing the narrative around women's health. For too long, the intricacies of women's health issues have been underrepresented and inadequately addressed in scientific studies, leading to a knowledge gap that affects half of the world's population. Technology and innovation offer a powerful toolkit for bridging this divide, enabling researchers to delve deeper into female-specific health conditions, improve diagnostic accuracy, and tailor treatments to the unique physiological characteristics of women. From wearable tech that monitors menstrual cycles and predicts fertility windows, to AI-driven platforms that analyze vast datasets for patterns specific to women's health, the potential is limitless. This embrace of technology also extends to creating more inclusive and accessible health solutions, ensuring that women from all walks of life can benefit from these advancements. By integrating these innovative tools, we're not just enhancing women's health research; we're paving the way for a future where healthcare is more personalized, equitable, and attuned to the needs of women worldwide.

1. Introduction

The landscape of women's health research has long been fraught with challenges and disparities, carving a history that underscores the necessity for a shift towards more inclusive and comprehensive approaches. Historically, women's health research was often relegated to a niche category, primarily focused on reproductive health, with significant aspects of women's overall well-being overlooked. This narrow scope has perpetuated a knowledge gap, leaving many health conditions that disproportionately affect women under-researched and poorly understood. Additionally, funding disparities have further exacerbated these issues, with women's health studies historically receiving less financial support compared to their male counterparts. This lack of representation and support has hindered advancements in diagnosing, treating, and understanding health conditions unique to or more prevalent in women.

1.1 Background on Women's Health Research
1.1.1 Historical Challenges
The journey of women's health research is marked by significant historical challenges. For decades, women were significantly underrepresented in clinical trials and health research, leading to a dearth of data on how diseases manifest differently in women. This exclusion was partly due to misguided attempts to protect women of childbearing potential from potential research-related risks, but it resulted in a one-size-fits-all approach to medicine that often doesn't fit women.

1.1.2 Funding Disparities
Funding disparities have further widened the gap in women's health research. Studies focusing on diseases prevalent among women, outside of those directly related to reproductive health, have struggled to secure funding at the same levels as research into conditions that affect men or are considered gender-neutral. This financial imbalance has stifled innovation and delayed advancements in critical areas of women's health.

1.1.3 Traditional Focus Areas
Traditionally, women's health research has concentrated on reproductive and maternal health, often overlooking broader issues such as cardiovascular disease, mental health, and autoimmune diseases, which affect women uniquely and disproportionately. While reproductive health is undoubtedly vital, the historical oversight of other areas has left significant gaps in our understanding and treatment of women's health as a whole.

1.2 The Importance of Technology and Innovation

In this era, technology and innovation emerge as pivotal forces in transforming women's health research. The integration of digital tools, artificial intelligence (AI), and wearable technology has the potential to address existing gaps, enhance research methodologies, and improve health outcomes for women.

Addressing Existing Gaps: Innovative technologies can offer new insights into conditions that are unique to, more prevalent, or present differently in women. For instance, AI can analyze patterns in vast datasets to identify risk factors for diseases that disproportionately affect women, improving early detection and prevention strategies.

Enhancing Research Methodologies: Digital health tools and wearable devices facilitate real-time health monitoring and data collection outside traditional clinical settings. This approach not only provides a more comprehensive view of women's health but also encourages the inclusion of more diverse populations in research studies.

Improving Health Outcomes: Personalized medicine, powered by genomics and data analytics, holds the promise of tailored treatments that take into account the unique physiological differences between women and men. By focusing on individualized care, technology can pave the way for more effective interventions and better health outcomes.

1.3 Objectives of the Article

This article aims to explore the transformative potential of technology and innovation in advancing women's health research. By delving into the historical context and current challenges in the field, we seek to underscore the importance of integrating these modern tools into our approach to women's health.

Exploring Types of Technologies and Innovations: We will examine various technological advancements, including AI, machine learning, wearable tech, and telehealth services, and their applications in women's health research.

Implications for Women's Health: The article will discuss the implications of these technologies for improving access to care, enhancing the accuracy of diagnoses, and developing more effective treatments for conditions that affect women.

Future Directions: Lastly, we will explore the future directions of women's health research in the context of technological innovation, considering both the opportunities and challenges that lie ahead.

2. Overview of Current Technologies in Women's Health Research

The dynamic landscape of women's health research is witnessing an unprecedented revolution, spurred by technological advancements. These innovations are not just transforming the methodologies of research; they are redefining the very essence of women's healthcare. From wearable devices that track physiological changes to the utilization of big data for predictive analytics, technology is at the forefront of pioneering a new era in healthcare tailored to the unique needs of women.

2.1 Digital Health Solutions

Digital health solutions represent a cornerstone of modern women's health research, offering tools that empower both patients and healthcare providers.

● **Wearables:** The rise of wearable technology represents a significant leap forward in women's health. No longer just for fitness enthusiasts, these devices now cater to a wide array of women's health needs. Wearables have transformed into sophisticated health monitors, tracking everything from menstrual cycles and fertility windows to the myriad changes that occur during pregnancy. This shift towards comprehensive health monitoring allows for a deeper understanding of the female body, offering real-time insights into the cyclical and life-changing events unique to women. By providing data directly from the source, wearables empower women to become active participants in their health journey, armed with information that was once difficult to track.

● **Mobile Health Apps:** The explosion of mobile health apps has democratized access to health information and support, making it easier for women to manage various aspects of their well-being. These applications cover a broad spectrum of health needs, from reproductive health to mental wellness, each designed to cater to the unique health questions and concerns that women may have throughout their lives. What makes these apps particularly powerful is their dual role as both a personal health assistant and a portal to communities of women with shared experiences. Through these platforms, women can find not only tailored health information but also support and understanding, making the often solitary health journey feel more communal and supported.

● **Telehealth Services:** Perhaps one of the most transformative digital health solutions has been the advent of telehealth. By enabling consultations and health services over the internet, telehealth has effectively broken down the geographic and logistical barriers that once made healthcare inaccessible for many. This is particularly beneficial for women's health, where privacy, comfort, and timely access to specialists like gynecologists and maternal health experts can significantly impact outcomes. Telehealth extends the reach of specialized care to the comfort of one's home, ensuring that more women can access the care they need, when they need it, without the constraints of location or the traditional burdens of healthcare systems.

2.2 Data Analytics and Big Data

The transformative power of data analytics and big data in women's health research heralds a new dawn, marked by unprecedented capabilities to dissect, understand, and enhance the health and well-being of women globally. The meticulous analysis of diverse health data sets opens doors to personalized, predictive, and proactive healthcare strategies that promise not only to refine women's health care but also to revolutionize it.

●**Understanding Health Trends:** At the heart of data analytics lies the capacity to mine and interpret vast amounts of health data, drawing out patterns and trends that are unique to women's health. This analytic prowess is instrumental in shining a light on conditions that disproportionately affect women—many of which have historically been overlooked or under-researched. By tapping into data from varied sources, researchers can now chart a course that moves from reacting to health issues as they arise to anticipating and preventing them, fundamentally shifting the paradigm of women's healthcare towards a more proactive model.

●**Personalizing Healthcare:** The era of one-size-fits-all healthcare is being eclipsed by the dawn of personalization, thanks to big data. This wealth of information enables a holistic view of health that accounts for the genetic, physiological, and environmental nuances influencing women's health. The result is a highly customized healthcare experience, where interventions and treatments are not just applied but finely tuned to meet the individual needs of each woman. This precision in care not only enhances the effectiveness of health interventions but also respects and responds to the unique health journey of every woman.

●**Predictive Analytics:** Perhaps one of the most exciting prospects of data analytics is predictive analytics. This technology's ability to sift through data and predict health outcomes before they manifest offers a groundbreaking approach to women's health. Early detection and timely intervention become the cornerstones of this approach, enabling healthcare providers to offer preemptive care that can halt or mitigate health issues before they fully develop. For women, this means a significant shift towards better health outcomes, with the potential to preempt conditions to which they may be genetically or environmentally predisposed.

2.3 Innovative Research Methodologies

The evolution of research methodologies in women's health is steering us towards a future where healthcare is not only more inclusive and effective but deeply attuned to the nuanced needs of women. By leveraging innovations such as virtual trials, patient-centered research designs, and artificial intelligence (AI), the field is witnessing a seismic shift in how research is conducted, promising outcomes that are both transformative and resonant with the lived experiences of women.

●**Virtual Trials:** Virtual trials represent a leap forward in democratizing participation in women's health research. By removing geographical and logistical barriers, this approach widens the gateway for diverse groups of women to contribute valuable data about their health experiences. Virtual trials facilitate long-term observation and data collection on women's health conditions that are often missed or underrepresented in traditional clinical settings. This method not only enriches the research with a broader data spectrum but also aligns with the modern lifestyle, making participation in health studies more feasible for women everywhere.

●**Patient-Centered Research Designs:** The pivot towards patient-centered research designs marks a significant evolution in aligning studies with the actual needs and experiences of women. This methodology ensures that research questions, design, and outcomes are directly relevant to the patients' health concerns and daily realities. By focusing on what truly matters to women, these research designs foster the development of interventions and treatments that are not just theoretically effective but practical and impactful in the real world. This approach embodies a respectful partnership between researchers and women, valuing their insights as integral to shaping research agendas and outcomes.

●**Artificial Intelligence (AI):** Artificial intelligence is transforming the landscape of women's health research with its ability to sift through and analyze complex datasets at unprecedented speeds. AI's capacity to identify patterns, risk factors, and potential treatments opens up new vistas for addressing diseases that disproportionately affect women. From enhancing diagnostic accuracy to crafting personalized treatment plans, AI stands at the forefront of innovative research methodologies, offering a powerful tool in the quest to understand and improve women's health. The implications of AI in research extend beyond operational efficiencies; they herald a future where healthcare solutions are increasingly tailored, timely, and attuned to the specific health trajectories of women.

3. Analysis of Technological Impacts on Women's Health Research

The infusion of technology into women's health research heralds a new era marked by enhanced efficiency, expanded scope, and improved access and equity. The technological revolution is not merely a matter of advanced gadgets and software but represents a fundamental shift in how women's health issues are researched, understood, and addressed. This analysis delves into the multifaceted impacts of technology on women's health research, underscored by real-world examples that highlight significant advancements and outcomes.

3.1 Enhancing Research Efficiency and Scope

The integration of technology into women's health research is a game-changer, propelling the field into an era where efficiency, scope, and accessibility are significantly enhanced. This technological revolution transcends the mere use of advanced gadgets and software; it marks a paradigm shift in the methodology and philosophy of health research. By employing digital tools, artificial intelligence (AI), and other technological innovations, researchers can now tackle women's health issues with a depth and breadth that were previously unattainable.

●**Broadening Research Scope:** The advent of wearable devices and mobile health applications has transformed the landscape of data collection in women's health research. These tools facilitate continuous, real-time monitoring of health metrics, offering insights into menstrual cycles, fertility, pregnancy, and more. Such detailed data collection empowers

researchers to uncover trends, patterns, and health anomalies with a level of detail that was once beyond reach. Moreover, the application of genomic sequencing and bioinformatics is revolutionizing our understanding of the genetic underpinnings of diseases that disproportionately impact women, including breast and ovarian cancers. These technologies are expanding the scope of research, enabling the exploration of new questions and hypotheses that can lead to groundbreaking discoveries in women's health.

●**Enhancing Efficiency:** Artificial intelligence and machine learning are at the forefront of increasing research efficiency. By analyzing vast datasets with precision and speed, AI can identify risk factors, disease markers, and potential treatments much more swiftly than traditional research methods. This acceleration in the pace of discovery is invaluable in the fast-evolving domain of women's health, where timely insights can lead to effective interventions and therapies. Furthermore, the use of virtual trials and electronic health records streamlines the research process, reducing both the time and financial costs associated with clinical studies. These innovations not only make research more efficient but also enable more complex, multi-site collaborations that can tackle the multifaceted nature of women's health issues.

The technological revolution in women's health research is not just about making existing processes faster or more comprehensive; it's about reimagining what's possible in the field. From the granular monitoring of individual health parameters to the global collaboration in multi-disciplinary studies, technology is opening new frontiers in understanding and improving women's health. The impact of these technological advancements is profound, offering the promise of more personalized, effective, and accessible healthcare solutions for women around the world. As we continue to harness the power of technology, the future of women's health research looks brighter than ever, poised to uncover new insights and deliver transformative health outcomes for women globally.

3.2 Improving Access and Equity

The infusion of technology into women's health research is reshaping the landscape of access and equity, heralding an era where the barriers that once limited participation and benefits from health research are being dismantled. This transformation is not merely about making health information and services more available; it's about fundamentally altering who can participate in and benefit from the advancements in women's health research.

●**Expanding Access to Research:** The advent of telehealth and mobile health platforms stands out as a critical factor in widening the door to clinical research participation. By leveraging these technologies, women from remote or under-resourced areas, those facing economic hardships, and individuals with mobility issues can now contribute to and benefit from health research. This digital bridge makes it possible for a more diverse array of women to engage in studies, enhancing the richness and applicability of research data across different populations. The inclusivity fostered by telehealth and mobile platforms ensures that the findings of women's health research reflect the experiences and needs of a broader spectrum of women, making the outcomes more universally beneficial.

●**Promoting Equity:**One of the most significant impacts of technology on women's health research is its potential to target and uplift underserved and marginalized populations. Digital health initiatives have the unique capability to reach into communities that have traditionally been left out of the health research narrative, offering tailored health interventions and participatory research opportunities. By focusing on the specific health needs and challenges of these groups, technology acts as a lever for equity, ensuring that the benefits of health research and interventions are more evenly distributed. Such targeted efforts are crucial for addressing long-standing disparities in health access and outcomes, moving closer to a world where every woman, regardless of her background or circumstances, has equal opportunities for health and well-being.

3.3 Case Studies

Several real-world examples underscore the transformative impact of technology on women's health research and outcomes:

●**Wearable Technology for Maternal Health:** A study utilizing wearable devices to monitor pregnant women in remote areas provided real-time data on maternal and fetal health. This initiative enabled early detection and intervention for complications such as preeclampsia, significantly improving maternal and neonatal outcomes in communities with limited access to traditional healthcare services.

●**AI in Breast Cancer Detection:** Advances in artificial intelligence have led to the development of more accurate breast cancer screening tools. AI algorithms trained on thousands of mammograms can now detect subtleties in breast tissue images that might be missed by the human eye, leading to earlier diagnosis and treatment with improved survival rates.

●**Mobile Health Apps for Menstrual Health:** The proliferation of menstrual tracking apps has empowered women with valuable insights into their reproductive health, leading to better-informed discussions with healthcare providers. These apps have also facilitated large-scale data collection on menstrual health, contributing to research and awareness of conditions like polycystic ovary syndrome (PCOS) and endometriosis.

4. Challenges and Ethical Considerations

Integrating technology into women's health research offers transformative potential; however, it also introduces a complex web of challenges and ethical considerations. The rapid pace of technological advancement and its application in healthcare necessitates a careful examination of privacy, data security, the digital divide, and regulatory frameworks to ensure that innovation serves the greater good without compromising individual rights or exacerbating existing inequalities.

4.1 Privacy Concerns and Data Security

The collection, analysis, and storage of health data through digital means raise significant privacy concerns. Women's health data, particularly concerning reproductive health, menstruation, and conditions like endometriosis or breast cancer, are not only sensitive but deeply personal. Ensuring the confidentiality and integrity of this data is paramount.

●**Data Security Risks:** With the increasing adoption of electronic health records (EHRs), wearable devices, and health apps, there is a heightened risk of data breaches. Such incidents can lead to the unauthorized disclosure of personal health information, eroding trust in digital health solutions.

●**Consent and Control:** Ethical considerations demand that women have control over their health data, including how it's used and who has access. Ensuring informed consent, especially in research utilizing digital tools, is critical. Participants must fully understand what data is collected, how it will be used, and the potential risks involved.

4.2 Digital Divide and Equitable Health Research

The digital divide—the gap between those with easy access to digital technology and those without—presents a significant barrier to the equitable application of technology in women's health research. This divide spans geographic, socioeconomic, and educational lines, potentially excluding large segments of the population from the benefits of digital health innovations.

●**Access and Inclusion:** Limited access to internet services, lack of digital literacy, and the unavailability of affordable digital devices can hinder the participation of underserved populations in digital health research. This exclusion risks perpetuating or even worsening existing health disparities.

●**Implications for Equity:** Addressing the digital divide is crucial for ensuring that technological advancements in women's health research benefit all women, not just those with the means and knowledge to participate. Efforts to make digital health tools more accessible and user-friendly are vital for promoting inclusivity.

4.3 Regulatory Challenges and Ethical Frameworks

The regulatory landscape for digital health technologies and data use is continuously evolving, struggling to keep pace with innovation. Establishing regulatory frameworks that support innovation, while ensuring the safety, effectiveness, and ethical use of technology, is a complex but essential endeavor.

●**Adapting Regulatory Frameworks:** Existing regulations may not adequately address the unique challenges posed by digital health technologies. For instance, the use of AI and big data in health research introduces questions about accountability, bias, and the validation of research findings derived from these methods.

●**Supporting Innovation While Ensuring Safety:** Balancing the need for rigorous regulatory oversight with the desire to foster innovation is challenging. Regulators must ensure that digital health solutions are not only safe and effective but also ethically deployed. This includes considering the long-term implications of technology use in healthcare, such as the potential for AI to automate decisions in ways that could replicate or amplify biases.

4.4 Ethical Considerations in Technological Application

Beyond privacy and regulatory challenges, the ethical application of technology in women's health research encompasses a broader set of considerations. This includes respecting autonomy, ensuring justice and fairness, and addressing potential biases in technological design and application.

●**Bias and Representation:** Technologies, including AI algorithms, are not immune to the biases of their creators. Ensuring that digital health tools and research methodologies are designed and tested in diverse populations is crucial for avoiding bias and ensuring that findings are applicable to all women.

●**Ethical Design and Deployment**: Ethical considerations should be integrated into the design and deployment of digital health technologies from the outset. This includes prioritizing user-centric design principles, transparency, and the ethical use of data.

5. Future Directions and Recommendations

The horizon of women's health research is bright with the promise of emerging technologies. These advancements, from blockchain to more sophisticated forms of artificial intelligence (AI), hold the potential to revolutionize how we understand, approach, and improve women's health. However, realizing this potential requires concerted efforts from all stakeholders involved—researchers, policymakers, healthcare providers, and the technology community. This discourse aims to navigate the future directions these technologies might take us and offers recommendations for leveraging these innovations to their fullest potential.

5.1 Potential for Emerging Technologies
5.1.1 Blockchain in Health Data Security

Blockchain technology offers a transformative approach to securing health data. By decentralizing the storage of data, blockchain can provide a secure and immutable ledger, reducing the risk of breaches while ensuring patient privacy. For women's health research, blockchain could facilitate the secure sharing of health data across research institutions, enabling collaborative studies without compromising the privacy and security of sensitive information.

5.1.2 Advanced AI and Machine Learning

AI and machine learning are already making waves in health research, but their future applications could be even more profound. Advanced AI could lead to more accurate predictive models for diseases that disproportionately affect women, such as breast cancer or autoimmune diseases. Furthermore, AI has the potential to personalize healthcare at an

unprecedented level, tailoring treatments and preventive measures to the individual's genetic makeup, lifestyle, and environmental factors.

5.2 Recommendations for Stakeholders

5.2.1 For Researchers

●**Leverage AI for Predictive Analytics:** Researchers should explore the capabilities of AI and machine learning in uncovering patterns and predictions that elude traditional analytical methods. This can lead to breakthroughs in understanding risk factors and disease progression in women.

●**Incorporate Blockchain for Data Sharing:** Implement blockchain technologies to facilitate secure data sharing across research entities. This will not only enhance the integrity of research data but also enable a collaborative and holistic approach to women's health research.

5.2.2 For Policymakers

● **Create Inclusive Regulations:** Develop and adapt policies that encourage the ethical use of emerging technologies in healthcare while ensuring they benefit all segments of the population equally. This includes regulations that address the digital divide, ensuring equitable access to technology-enabled health solutions.

● **Support Innovation Through Funding:** Allocate resources and funding towards initiatives that explore the use of blockchain, AI, and other emerging technologies in health research. Special emphasis should be placed on projects that aim to close the gender gap in healthcare research and delivery.

5.2.3 For Healthcare Providers

●**Adopt Technology-Enabled Solutions:** Integrate digital health solutions, such as AI-driven diagnostic tools or blockchain-based patient records, into clinical practice. This can improve diagnostic accuracy, enhance patient privacy, and streamline healthcare delivery.

●**Promote Digital Literacy Among Patients:** Healthcare providers should play an active role in educating patients about the benefits and risks associated with digital health technologies. Empowering women with knowledge about these tools will enable informed decision-making regarding their health.

5.3 Call to Action

The integration of emerging technologies in women's health research is not just a pathway to more advanced healthcare solutions; it is a critical step towards achieving equity in healthcare. The unique health challenges faced by women globally demand innovative approaches that these technologies can provide. However, the path forward requires more than technological innovation alone; it requires a paradigm shift in how we fund, conduct, and regulate health research.

5.3.1 Continued Investment

Investment in technology for women's health research must be sustained and expanded. This includes both public and private funding, emphasizing interdisciplinary projects that combine healthcare, technology, and social sciences to address the complex challenges of women's health.

5.3.2 Collaboration Across Disciplines

The future of women's health research lies in collaboration. Bridging the gap between technologists, healthcare professionals, researchers, and policymakers can catalyze the development of solutions that are innovative, scalable, and equitable. Collaboration can also ensure that technologies are developed and implemented in a way that truly meets the needs of women.

5.3.3 Innovation with a Purpose

As we venture further into the realm of digital health, the focus must always remain on the goal of improving health outcomes and closing the equity gap in healthcare. Innovation should not just aim at technological advancements but also at creating solutions that are accessible, affordable, and applicable to diverse populations of women worldwide.

6. Conclusion

6.1 Transformative Potential of Technology in Women's Health Research

The integration of technology into women's health research marks a pivotal shift towards addressing the complex health needs of women with innovative solutions. Wearable devices, digital health platforms, and advanced data analytics are revolutionizing how we gather and interpret health data, offering insights into conditions uniquely affecting women. This technological evolution promises to enhance research efficiency, expand the scope of studies, and personalize healthcare, setting a new standard for how women's health issues are understood and treated.

6.2 Societal, Economic, and Health Impacts

Advancements in women's health research, propelled by technology, have profound implications across societal, economic, and health domains. Societally, they promote a more inclusive understanding of health needs. Economically, investing in technology-driven health research can lead to significant savings by optimizing healthcare delivery and focusing on prevention and early detection. Health-wise, the use of technology in research is a game-changer for women

worldwide, potentially leading to breakthroughs in the treatment and understanding of female-specific health issues, ultimately improving quality of life and health outcomes.

6.3 The Path Forward: Collaboration, Investment, and Innovation

The future of women's health research is bright, underscored by the necessity for continuous collaboration across sectors, substantial investment in innovation, and a commitment to ethical and inclusive technology deployment. The collective effort to support and leverage technology in women's health research must prioritize closing the gender gap in healthcare, ensuring equitable access to technological advancements, and fostering an environment where innovative thinking thrives. This path forward is not merely aspirational but essential, demanding action and dedication to reshape the landscape of women's health for the better.

7. References

1. Pinn, V. W. (2013). Women's health research: current state of the art. Global Advances in Health and Medicine, 2(5), 8-10.
2. Chokshi, D. A., & Rajkumar, R. (2007). Leveraging university research to advance global health. JAMA, 298(16), 1934-1936.
3. Miller, V. M., Rice, M., Schiebinger, L., Jenkins, M. R., Werbinski, J., Núñez, A., ... & Shuster, L. T. (2013). Embedding concepts of sex and gender health differences into medical curricula.
4. Marsch, L. A. (2012). Leveraging technology to enhance addiction treatment and recovery. Journal of addictive diseases, 31(3), 313-318.
5. Yano, E. M., Bastian, L. A., Frayne, S. M., Howell, A. L., Lipson, L. R., McGlynn, G., ... & Fihn, S. D. (2006). Toward a VA women's health research agenda: Setting evidence-based priorities to improve the health and health care of women veterans. Journal of General Internal Medicine, 21(Suppl 3), S93-S101.
6. Antes, A. L., & Schuelke, M. J. (2011). Leveraging technology to develop creative leadership capacity. Advances in Developing Human Resources, 13(3), 318-365.
7. Riley, W. T. (2012). Leveraging Technology for Multiple Risk Factor Interventions: Comment on "Multiple Behavior Changes in Diet and Activity". Archives of internal medicine, 172(10), 796-798.
8. Wood, S. F., Blehar, M. C., & Mauery, D. R. (2011). Policy implications of a new national institutes of health agenda for women's health research, 2010–2020. Women's Health Issues, 21(2), 99-103.
9. Bierman, A. S. (2003). Climbing out of our boxes: advancing women's health for the twenty-first century. Women's Health Issues, 13(6), 201-203.
10. Hankivsky, O., Cormier, R., & De Merich, D. I. (2009). Moving women's health research and policy forward. Vancouver: Women's Health Research Network.
11. Board on Population Health, Public Health Practice, & Committee on Women's Health Research. (2010). Women's health research: Progress, pitfalls, and promise. National Academies Press.
12. Stone, J., Pinn, V. W., Rudick, J., Lawrence, M., & Carlyn, M. (2006). Evaluation of the first 10 years of the Office of Research on Women's Health at the National Institutes of Health: Selected findings. Journal of Women's Health, 15(3), 234-247.
13. Mosca, L., Allen, C., Fernandez-Repollet, E., Kim, C., Lee, M., McAuley, J. W., & McLaughlin, M. (2001). Setting a local research agenda for women's health: The National Centers of Excellence in Women's Health. Journal of women's health & gender-based medicine, 10(10), 927-935.
14. Frost, C. J., Murphy, P. A., Shaw, J. M., Jones, K. P., Varner, M., Mihalopoulus, N., ... & Digre, K. (2013). Reframing the view of women's health in the United States: Ideas from a multidisciplinary National Center of Excellence in Women's Health Demonstration Project. Clinics in Mother and Child Health, 11(1), 1-3.
15. Shaver, J., Olshansky, E., Woods, N. F., & Women's Health Expert Panel of the American Academy of Nursing. (2013). Women's health research agenda for the next decade. A report by the Women's Health Expert Panel of the American Academy of Nursing. Nursing Outlook, 61(1), 16-24.