

Understanding Reproductive Health in Later Life: Perspectives on Aging, Sexual Health, and Wellness for Older Adults

Yenni Ariestanti¹, Titik Widayati¹, Dinni Agustin^{2,3}, Dewi Nawang Sari¹, Della Erriani Akaputri¹, Lina Herlina¹

¹Faculty of Health Sciences, Program Study of Midwifery Universitas Respati Indonesia

²Faculty of Manajemen and Bisnis Universitas Respati Indonesia

³Centre for Family and Ageing Studies Universitas Respati Indonesia

Abstract: As the global population ages, understanding reproductive health in later life has gained increasing importance. Traditionally focused on younger populations, reproductive health research has often overlooked the unique needs of older adults. Aims: The primary objectives of this review are to examine the physiological and psychosocial aspects of reproductive health in older adults, and to evaluate the effectiveness of healthcare systems in addressing these needs. Methods: A systematic literature search was conducted across multiple databases, including PubMed, Psyc INFO, and Scopus, using keywords related to aging, reproductive health, and sexual wellness. Studies were selected based on relevance, quality, and recentness. Data was extracted and synthesized to identify key themes and trends. Key Findings: Physiological changes such as hormonal fluctuations significantly impact sexual function and satisfaction in later life. Psychosocial factors, including societal attitudes and personal beliefs about aging, play a crucial role in shaping sexual well-being. Additionally, healthcare systems often fall short in addressing the specific reproductive health needs of older adults due to gaps in provider training and service availability. Conclusions: Reproductive health remains a critical component of overall wellness for seniors. There is a need for enhanced research focusing on the unique reproductive health challenges faced by older adults and for improvements in healthcare practices and policies to better support this demographic. Addressing these issues will improve quality of life and foster a more inclusive approach to sexual health in later life.

Keyword: Reproductive Health, Aging, Sexual Health, Wellness, Older Adults

I. Introduction

As societies globally experience significant demographic shifts towards aging populations, there is an increasing recognition of the importance of understanding reproductive health across the lifespan. Traditionally, reproductive health has been a focus of younger demographics, but recent scholarship underscores the necessity of addressing reproductive health issues in older adults. This literature review aims to explore the intersection of aging, sexual health, and wellness for seniors, shedding light on the evolving nature of reproductive health in later life.

Aging brings about a multitude of physiological changes that impact reproductive health. For instance, hormonal fluctuations associated with menopause in women and testosterone decline in men are well-documented, affecting sexual function and desire (Santoro, 2016; Mikhail, 2021). These physiological changes can influence sexual health outcomes and overall quality of life for older adults. Furthermore, research indicates

that sexual activity and satisfaction remain important aspects of well-being in later life, challenging prevailing stereotypes about sexuality in older age (Hays & Nichols, 2005).

The psychosocial dimensions of reproductive health are also critical. Attitudes towards sexuality in older adults can be complex, influenced by societal norms, personal beliefs, and the dynamics of intimate relationships (Levy & Myers, 2004). Studies have shown that despite physiological changes, many older adults maintain active and fulfilling sex lives, and sexual satisfaction continues to be a significant component of overall well-being (Karraker & DeMaris, 2015).

Healthcare systems play a pivotal role in addressing reproductive health needs in older adults. Access to appropriate healthcare services and the quality of care provided can significantly impact sexual health outcomes for seniors. Research highlights gaps in healthcare provider training and the need for more inclusive and responsive health services that address the specific needs of older patients (Naughton et al., 2012; Levine, 2015).

This review will synthesize current research on these issues, focusing on three main areas: physiological changes related to aging and their impact on reproductive health, psychosocial aspects of sexual health in later life, and the role of healthcare systems in supporting seniors' sexual health. By integrating findings from diverse studies, this review aims to provide a comprehensive overview of reproductive health in later life and identify areas where further research and intervention are needed.

Understanding reproductive health in later life not only contributes to improved individual well-being but also informs policy and practice to better support aging populations. As such, this review seeks to advance knowledge in this field and promote a more nuanced understanding of reproductive health for seniors.

II. Methods

A systematic literature search was conducted across multiple databases, including PubMed, PsycINFO, and Scopus, using keywords related to aging, reproductive health, and sexual wellness. Studies were selected based on relevance, quality, and recency. Data was extracted and synthesized to identify key themes and trends.

III. Literature Review

3.1. Physiological Aspects of Reproductive Health in Later Life

As individuals age, various physiological changes impact reproductive health, influencing sexual function, hormonal levels, and overall well-being. This review explores the key physiological changes associated with aging and their effects on reproductive health for both men and women.

1. Hormonal Changes

1.1. Menopause and Postmenopausal

Menopause marks the end of a woman's reproductive years, typically occurring between ages 45 and 55. This transition is characterized by a significant decline in ovarian hormone production, particularly estrogen and progesterone (Santoro, 2016). Postmenopausal women experience a range of symptoms including vaginal dryness, decreased libido, and hot flashes, which can affect sexual health and quality of life (Freedman, 2014). Estrogen replacement therapy (ERT) has been used to mitigate some of these symptoms, though its long-term use is debated due to potential risks (Manson et al., 2013).

Women who have had a hysterectomy (surgery to remove the uterus) with removal of the ovaries may experience menopause later faster than they would naturally. After all, every woman those approaching middle

age can expect hormonal changes soon occurs and the menopause process begins (Delamater & Santoro, 2018; Endocrine Society, 2022; Minkin, 2019; Süß & Ehlert, 2020).

Estrogen levels generally decrease during perimenopause. Decline Estrogen production starting in perimenopause may influence sexual function directly, such as through vaginal dryness. This matter can also occur indirectly, in the form of hot flashes and night sweats, which can drain energy and consequently weaken the desire to have sex. (The North American Menopause Society (NAMS), 2022). When women enter the perimenopause phase until menopause, the ovaries produce less estrogen and progesterone. The ovaries become smaller responsive to control hormones secreted by the pituitary gland in the brain – FSH (Follicle-Stimulation Hormone) and LH (Luteinizing Hormone) – produces higher levels of control hormones.

As the process progresses, women will experience menopause symptoms addition:

1. Lower sexual desire.

2. Vaginal dryness.

When estrogen levels decrease, vaginal tissue loses lubrication and elasticity, making sexual intercourse smooth and painful. Low estrogen can also make you more susceptible against urinary tract or vaginal infections. Loss of tissue tone can cause urinary incontinence.

3. Painful sex due to vaginal dryness.

4. Low libido.

5. Irregular menstruation.

6. Depression, sadness, or anxiety

Many post-menopausal people experience moodiness, anxiety, and depression. This can be caused by stress, sexual tension or other life challenges that have occurred during this time. Some people feel sad that their reproductive years are over. Mood symptoms can also be caused by a decrease in hormone levels.

7. Sudden or frequent urination

8. Higher risk for bone loss and fractures

As estrogen levels decrease, bone loss occurs more rapidly rather than to replace it, increasing the risk of osteoporosis - a disease that causes brittle bones. (Marlynda, H.N.Sari, 2022).

1.2. Andropause

In men, a gradual decline in testosterone levels occurs with age, often referred to as andropause. This decline can result in decreased sexual desire, erectile dysfunction, and reduced muscle mass (Snyder et al., 2012). Unlike menopause, the decline in testosterone is gradual rather than abrupt, leading to subtle changes in sexual function and overall health (Kaufman, 2002).

1.3. Sexual Function

1. Changes in Female Sexual Function

Aging affects female sexual function in various ways. Decreased estrogen levels can lead to thinning of vaginal tissues and reduced lubrication, causing discomfort during intercourse (Gordon et al., 2012). Furthermore, there is evidence that aging is associated with decreased sexual arousal and orgasmic difficulties, which may be related to hormonal changes and other age-related factors (Miller et al., 2018).

2. Changes in Male Sexual Function

For men, aging is often associated with erectile dysfunction (ED) and reduced ejaculatory volume. Studies indicate that the prevalence of ED increases with age, with vascular changes and reduced testosterone levels being significant contributing factors (Wang et al., 2007). Additionally, older men may experience longer refractory periods and decreased sexual satisfaction (Kumar et al., 2014).

3.2. Reproductive Health Conditions

1. In Women

Postmenopausal women are at increased risk for certain health conditions such as osteoporosis and cardiovascular disease, which are influenced by the loss of estrogen (Kanis et al., 2013). These conditions can indirectly impact reproductive health by affecting overall physical health and mobility.

Decreased estrogen hormones in menopausal women may cause various complaints as follows:

a. Coronary heart disease

Sufficient estrogen levels can protect women from coronary heart disease. Reducing the hormone estrogen can reduce levels of good cholesterol (HDL) and increase levels of bad cholesterol (LDL) which increases the incidence of coronary heart disease

b. Osteoporosis

Osteoporosis is a reduction in bone density in women due to decreased levels of the hormone estrogen, so that bones become brittle and break easily.

c. Eye disorder

The eyes feel dry and sometimes itchy because tear production is reduced.

d. Dementia (Alzheimer's type dementia)

Estrogen deficiency also affects the central nervous system and brain. A decrease in the hormone estrogen causes difficulty concentrating, difficulty sleeping, anxiety, depression and even Alzheimer's type dementia. Alzheimer's type dementia can occur if estrogen deficiency has been going on for a long time and is severe, which is influenced by hereditary factors. (Pratiwi, 2021).

2. In Men

Older men are also at higher risk for conditions such as benign prostatic hyperplasia (BPH) and prostate cancer, which can affect sexual function and quality of life (Barry et al., 2002). BPH, in particular, can cause urinary symptoms that may interfere with sexual activity (McConnell et al., 2003).

The physiological changes associated with aging have significant implications for reproductive health. Menopause and andropause introduce hormonal fluctuations that impact sexual function and overall well-being. Additionally, aging-related conditions can further complicate reproductive health. Understanding these physiological changes is essential for developing effective strategies to manage and improve sexual health in later life.

3.3. Psychosocial Dimensions of Reproductive Health in Later Life

Understanding the psychosocial aspects of reproductive health in later life is crucial for a holistic view of sexual well-being in older adults. This review explores how societal attitudes and personal beliefs influence sexual health, factors affecting sexual satisfaction, and the impact of aging on intimate relationships.

1. Attitudes Towards Aging and Sexuality

1.1. Societal Attitudes

Societal perceptions of aging and sexuality significantly impact older adults' sexual health. Prevailing stereotypes often depict older adults as asexual or uninterested in sex, which can lead to stigmatization and internalized ageism (Levy & Myers, 2004). Such attitudes can discourage older individuals from seeking help for sexual health issues or expressing their sexual desires openly.

Research indicates that negative societal attitudes can affect the self-esteem and sexual self-concept of older adults. For instance, older adults who perceive themselves as less attractive or sexually desirable due to their age may experience diminished sexual satisfaction and lower overall well-being (Dixon et al., 2003). Conversely, positive societal attitudes and a more inclusive view of sexuality can promote better sexual health and self-esteem among older individuals (Friedman & Langer, 2009).

1.2. Personal Beliefs

Personal beliefs about aging and sexuality also play a critical role in sexual health. Some older adults may hold traditional views that limit their sexual expression or may struggle with reconciling their sexual desires with societal expectations (Kimmel, 2008). On the other hand, those with more progressive beliefs about sexuality in later life often report higher levels of sexual satisfaction and engagement (Davis et al., 2009).

2. Sexual Satisfaction

2.1. Factors Affecting Sexual Satisfaction

Sexual satisfaction in older age is influenced by a variety of factors, including physical health, psychological well-being, and relationship quality. Physiological changes, such as decreased hormone levels and sexual function, can impact sexual satisfaction (Miller et al., 2018). Additionally, psychological factors such as depression and anxiety are linked to lower sexual satisfaction and diminished sexual desire (Heiman, 2002).

Relationship dynamics also play a crucial role. Couples with strong emotional bonds and good communication are more likely to experience higher sexual satisfaction. Studies have found that sexual satisfaction is often correlated with relationship satisfaction, highlighting the importance of both emotional and physical intimacy (Meyer & Marks, 2016).

2.2. Intimacy and Sexual Expression

The ability to maintain intimacy and sexual expression in later life is closely related to how well couples manage the changes that come with aging. Research suggests that open communication about sexual needs and maintaining a sense of closeness are key factors in sustaining sexual satisfaction and intimacy (Sprecher & Regan, 2002).

3. Impact on Relationships

3.1. Aging and Intimate Relationships

Aging can affect intimate relationships in several ways. Physical health problems, such as chronic illnesses or mobility issues, may limit opportunities for sexual activity and intimacy (Naughton et al., 2012). Moreover, the emotional and psychological impact of aging—such as dealing with loss and adjusting to retirement—can strain relationships and affect sexual expression.

3.2. Sexual Expression

The capacity for sexual expression often evolves with age, influenced by both physical changes and emotional adjustments. Older adults may face challenges in maintaining sexual activity due to health issues, but many also find ways to adapt and continue to enjoy intimate relationships. Studies show that maintaining sexual activity

and exploring new forms of intimacy can contribute positively to overall relationship satisfaction and personal well-being (Karraker & DeMaris, 2015).

The psychosocial dimensions of reproductive health in later life reveal the profound impact of societal attitudes, personal beliefs, and relationship dynamics on sexual health. Understanding these factors is essential for improving sexual satisfaction and supporting intimate relationships among older adults. Addressing societal stigma and fostering open communication about sexual health can enhance the quality of life for older individuals and contribute to a more inclusive approach to sexual well-being.

3.4. Healthcare Systems and Support for Reproductive Health in Later Life

Addressing reproductive health in older adults requires a comprehensive understanding of healthcare access, provider training, and relevant interventions and policies. This review examines these critical aspects to highlight the challenges and opportunities in supporting seniors' reproductive health.

1. Healthcare Access

1.1. Availability of Healthcare Services

Access to healthcare services for reproductive health in older adults can be limited by various factors, including geographic location, financial constraints, and the availability of specialized care. Studies indicate that older adults often face challenges in accessing appropriate healthcare services due to provider shortages, especially in rural areas (Jones et al., 2019). Furthermore, the availability of services specifically tailored to the reproductive health needs of seniors is often inadequate, with many healthcare systems focusing primarily on younger populations (Naughton et al., 2012).

1.2. Quality of Healthcare Services

The quality of healthcare services for older adults is another critical factor. Research shows that older patients frequently experience barriers to receiving high-quality reproductive health care, including inadequate screening for sexual health issues and a lack of personalized care (Levine, 2015). Quality of care issues may stem from insufficient resources or a lack of focus on the sexual health needs of older patients within the healthcare system (Finkelstein et al., 2020).

2. Provider Training

2.1. Adequacy of Training

Healthcare providers play a crucial role in addressing the reproductive health needs of older adults. However, there is evidence that provider training in geriatric sexual health is often insufficient. Many healthcare professionals receive limited education on the unique reproductive health challenges faced by seniors, leading to a lack of confidence and expertise in addressing these issues (Naughton et al., 2012). Training programs frequently do not cover the complexities of sexual health in older age, which can result in missed opportunities for diagnosis and treatment (Hollander & Brunner, 2017).

2.2. Enhancing Training Programs

Efforts to improve provider training include the development of specialized educational programs and resources focused on geriatric sexual health. Such initiatives aim to equip healthcare providers with the knowledge and skills needed to effectively address the reproductive health concerns of older adults (Levinson & DeGroot, 2019). Continuing medical education and workshops on sexual health in older adults are increasingly recognized as essential for enhancing the competence of healthcare professionals (Carpenter et al., 2021).

3. Interventions and Policies

3.1. Existing Interventions

Several interventions have been implemented to support reproductive health in older adults. These include community-based programs aimed at increasing awareness and providing resources for sexual health issues among seniors. For example, some programs offer counseling and support services that address sexual health and well-being specifically for older populations (Ard & Malley, 2016). Additionally, health promotion campaigns focusing on the importance of sexual health throughout the lifespan have been introduced to reduce stigma and encourage open discussions (Kaufman, 2019).

3.2. Policies and Recommendations

Policies that support the reproductive health of older adults often focus on improving access to care and integrating sexual health services into routine medical care. Recommendations include increasing funding for research on aging and sexual health, enhancing provider education, and developing guidelines that address the specific needs of older adults (Miller et al., 2018). Policy initiatives also advocate for the inclusion of sexual health assessments as part of regular health evaluations for seniors, aiming to normalize and address these issues proactively (Levine, 2015).

Healthcare systems and support mechanisms for reproductive health in later life face significant challenges, including limited access to specialized services, inadequate provider training, and gaps in effective interventions and policies. Addressing these challenges requires a multi-faceted approach that includes improving access to care, enhancing provider education, and implementing comprehensive policies and interventions. By focusing on these areas, healthcare systems can better support the reproductive health needs of older adults and improve their overall quality of life.

IV. Discussion

1. Synthesis of Findings

The review of literature on reproductive health in later life reveals a complex interplay between physiological changes, psychosocial factors, and healthcare systems. Physiologically, aging brings about significant hormonal changes that impact sexual function and satisfaction. In women, menopause leads to decreased estrogen levels, contributing to issues such as vaginal dryness and reduced libido. Men experience a gradual decline in testosterone, resulting in decreased sexual desire and erectile dysfunction. These physiological changes are compounded by psychosocial factors including societal attitudes and personal beliefs about aging and sexuality, which influence sexual self-concept and satisfaction.

The literature also highlights that the quality and availability of healthcare services for older adults are often inadequate. Many seniors face barriers in accessing specialized reproductive health care, partly due to geographic and financial constraints. Furthermore, healthcare providers frequently lack adequate training in addressing the unique reproductive health needs of older adults, resulting in missed opportunities for effective intervention. Current policies and interventions aimed at supporting seniors' reproductive health are evolving but still face challenges related to integration and accessibility.

2. Implications

2.1. For Practice: Healthcare practitioners need to adopt a more inclusive approach to sexual health that acknowledges the complexities of aging. This involves integrating sexual health assessments into routine evaluations for older adults and providing education that covers the physiological and psychosocial aspects of sexual health in later life. Tailoring interventions to address both physical and emotional aspects of sexual health can improve the quality of life for seniors.

2.2. For Policy: Policymakers should advocate for increased funding and resources dedicated to older adults' reproductive health. This includes supporting initiatives that enhance provider training and improve access to specialized care. Developing and implementing comprehensive policies that address

the reproductive health needs of older adults can help mitigate the disparities currently observed in healthcare services.

- 2.3. For Further Research: There is a need for more research focused on the effectiveness of interventions and policies aimed at improving reproductive health in later life. Longitudinal studies examining the long-term outcomes of sexual health interventions and the impact of societal attitudes on sexual well-being are particularly valuable. Additionally, exploring innovative models for integrating sexual health into geriatric care can provide insights into best practices.

3. Limitations

While this review provides a comprehensive overview of the current state of knowledge, several limitations should be noted:

3.1. Scope of Literature: The review is constrained by the availability of studies that specifically address reproductive health in older adults. Many studies focus on broader aspects of aging or sexual health without delving deeply into the nuances of reproductive health in this demographic.

3.2. Variability in Study Quality: The quality of the studies reviewed varies, with some research lacking rigorous methodologies or comprehensive data. This variability can impact the reliability of the findings and their generalizability.

3.3. Limited Data on Interventions: There is limited empirical data on the effectiveness of specific interventions and policies targeting older adults' reproductive health. This gap highlights the need for more targeted research to evaluate the impact of existing programs and policies.

3.4. Cultural and Geographic Differences: The reviewed studies may not fully capture the cultural and geographic differences that affect reproductive health. Research conducted in diverse settings is needed to understand how cultural attitudes and healthcare systems vary globally and affect sexual health in older adults.

Understanding reproductive health in later life requires a multi-faceted approach that considers physiological changes, psychosocial factors, and healthcare system challenges. Addressing these areas through improved practice, policy, and research will be essential for enhancing the sexual health and overall well-being of older adults.

V. Conclusions

Summary of Key Points

The exploration of reproductive health in later life highlights several key findings:

1. Physiological Changes: Aging brings about significant physiological changes that impact reproductive health. In women, menopause results in decreased estrogen levels, leading to symptoms such as vaginal dryness and reduced libido. Men experience a gradual decline in testosterone, which can lead to decreased sexual desire and erectile dysfunction. These changes affect sexual function and overall satisfaction.

2. Psychosocial Factors: Societal attitudes and personal beliefs about aging and sexuality significantly influence sexual health in older adults. Negative societal stereotypes can contribute to feelings of diminished sexual self-worth and reduced engagement in sexual activity. Conversely, more positive attitudes and progressive personal beliefs are associated with higher sexual satisfaction and better sexual health outcomes.

3. Healthcare System Challenges: Access to healthcare services for reproductive health in older adults is often limited by geographic, financial, and systemic barriers. Many healthcare providers lack specific training in geriatric sexual health, leading to gaps in care. Current policies and interventions are improving but need further development to effectively address the unique reproductive health needs of older adults.

Recommendations

For Future Research:

1. **Longitudinal Studies:** Conduct longitudinal studies to better understand the long-term impacts of physiological changes and interventions on reproductive health in older adults. This will provide valuable insights into how sexual health evolves with age and the effectiveness of various treatment approaches.
2. **Intervention Efficacy:** Explore and evaluate the efficacy of specific interventions and programs designed to improve sexual health in later life. Research should focus on both clinical and community-based interventions to determine best practices for enhancing sexual well-being among older adults.
3. **Cultural and Geographic Variability:** Investigate how cultural and geographic differences affect attitudes towards aging and sexuality, as well as the availability and effectiveness of healthcare services. Understanding these variations can inform more culturally sensitive and globally applicable approaches to sexual health in older adults.

For Policy Changes:

1. **Enhance Funding and Resources:** Advocate for increased funding and resources dedicated to reproductive health services for older adults. Support initiatives that aim to bridge the gaps in access to care and address the specific needs of this population.
2. **Implement Comprehensive Guidelines:** Develop and implement comprehensive guidelines that incorporate sexual health assessments into routine geriatric care. These guidelines should focus on providing holistic care that addresses both physical and psychosocial aspects of sexual health.
3. **Promote Training and Education:** Support policies that mandate and fund specialized training for healthcare providers in geriatric sexual health. Continuing medical education programs should be updated to include the latest research and best practices for managing sexual health issues in older adults.

For Practice Improvements:

1. **Integrate Sexual Health into Routine Care:** Healthcare providers should integrate sexual health discussions into routine assessments for older adults. This approach can help normalize conversations about sexual health and ensure that issues are addressed proactively.
2. **Foster Open Communication:** Encourage open communication between healthcare providers and patients regarding sexual health concerns. Building a supportive environment where older adults feel comfortable discussing their sexual health can lead to better outcomes and increased satisfaction.
3. **Address Stigma and Promote Inclusivity:** Work to reduce stigma associated with aging and sexuality through public health campaigns and education. Promoting an inclusive view of sexual health can improve the quality of life for older adults by fostering a more accepting and supportive societal attitude.

In summary, understanding reproductive health in later life requires addressing both the physiological and psychosocial dimensions of sexual health, as well as improving healthcare systems and support mechanisms. By focusing on these areas, we can enhance the sexual well-being of older adults and ensure they receive the care and support they need to thrive in later life.

References

- [1] Ard, J. D., & Malley, K. (2016). Community-based interventions to support sexual health in older adults: An overview. *Journal of Aging & Health*, 28(4), 608-623.
- [2] Barry, M. J., Cokkinides, V., & O'Leary, M. P. (2002). Benign prostatic hyperplasia: Diagnosis and treatment. *American Family Physician*, 65(7), 1409-1416.
- [3] Carpenter, J. S., et al. (2021). Enhancing healthcare provider training in geriatric sexual health: A review of educational strategies. *Sexual Medicine Reviews*, 9(2), 237-245.
- [4] Davis, C. M., et al. (2009). Sexual attitudes and behavior in older adults: The role of personal and societal beliefs. *Journal of Sex Research*, 46(3), 221-229.
- [5] Delamater & Santoro. (2018). *Endocrine Society*.
- [6] Dixon, J., et al. (2003). Sexual desire and self-esteem in older adults. *The Journal of Gerontology: Psychological Sciences*, 58(2), 118-127.
- [7] Finkelstein, J. A., et al. (2020). Quality of care for older adults: Challenges and opportunities in sexual health services. *The Journal of Gerontology: Medical Sciences*, 75(6), 1155-1164.
- [8] Friedman, M. A., & Langer, S. S. (2009). Attitudes toward aging and sexuality: Implications for therapy and practice. *Journal of Aging Studies*, 23(3), 201-209.
- [9] Freedman, R. R. (2014). Menopause-related symptoms: Clinical considerations and management. *Menopause*, 21(5), 529-535.
- [10] Gordon, K. L., et al. (2012). Effects of estrogen therapy on sexual function in postmenopausal women. *The Journal of Sexual Medicine*, 9(1), 67-75.
- [11] Hays, R. D., & Nichols, P. (2005). Health-related quality of life in older adults. *Journal of Aging and Health*, 17(3), 290-309.
- [12] Heiman, J. R. (2002). Sexual dysfunction: Overview of prevalence, risk factors, and treatment. *The Journal of Clinical Psychiatry*, 63(9), 12-19.
- [13] Hollander, M., & Brunner, J. (2017). Geriatric sexual health: Training needs and gaps among healthcare providers. *The Journal of Sexual Medicine*, 14(5), 685-692.
- [14] Jones, A. R., et al. (2019). Geographic disparities in healthcare access for older adults: Implications for reproductive health. *Journal of Rural Health*, 35(3), 455-463.
- [15] Kanis, J. A., et al. (2013). European guidance for the diagnosis and management of osteoporosis in postmenopausal women. *Osteoporosis International*, 24(1), 23-57.
- [16] Kaufman, J. M. (2002). Testosterone and aging: Clinical and biological aspects. *The Journal of Clinical Endocrinology & Metabolism*, 87(3), 949-954.
- [17] Karraker, A., & DeMaris, A. (2015). Sexual activity and satisfaction among older adults: The role of relationship quality and health. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 70(1), 91-100.
- [18] Kaufman, J. (2019). Public health campaigns addressing sexual health in older adults: Impact and effectiveness. *Health Education & Behavior*, 46(2), 212-220.
- [19] Kimmel, D. C. (2008). Changing attitudes toward aging and sexuality: Insights and implications. *Sexuality and Disability*, 26(2), 69-82.
- [20] Kumar, R., et al. (2014). Age-related changes in sexual function in men. *Sexual Medicine Reviews*, 2(1), 1-9.
- [21] Levine, S. B. (2015). Sexual health and aging: The role of healthcare systems in supporting older adults. *The Journal of Sexual Medicine*, 12(1), 4-12.
- [22] Levine, S. B. (2015). Sexual health and aging. *The Journal of Sexual Medicine*, 12(1), 1-2.
- [23] Levinson, W., & DeGroot, J. (2019). Improving provider education on geriatric sexual health: Current initiatives and future directions. *Geriatrics*, 4(3), 52-60.
- [24] Levy, B. R., & Myers, L. M. (2004). Older adults' stereotypes of aging and their relationship to functional status and self-efficacy. *Journal of Personality and Social Psychology*, 87(3), 469-480.

- [25] Manson, J. E., et al. (2013). Menopausal hormone therapy and health outcomes: New evidence from the Women's Health Initiative. *Journal of the American Medical Association*, 310(13), 1353-1368.
- [26] Marlynda H.N.Sari (2022). *Obstetri dan Ginekologi untuk Kebidanan*. Yayasan Kita Menulis.
- [27] McConnell, J. D., et al. (2003). Benign prostatic hyperplasia: Diagnosis and treatment. *American Family Physician*, 68(3), 469-476.
- [28] Meyer, B., & Marks, R. (2016). Relationship satisfaction and sexual satisfaction in older couples: The role of communication. *Sexual Medicine Reviews*, 4(3), 291-301.
- [29] Mikhail, M. (2021). Testosterone and aging: The role of testosterone in older men. *Journal of Men's Health*, 17(2), 103-112.
- [30] Miller, K., et al. (2018). Sexual arousal and orgasm in postmenopausal women: An overview. *Menopause Review*, 27(4), 298-305.
- [31] Miller, K., et al. (2018). Sexual health policies for older adults: Current guidelines and recommendations. *Menopause Review*, 27(4), 278-291.
- [32] Minkin (2019)..
- [33] NAMS (The North American Menopause Society) (2022).
- [34] Naughton, M. J., et al. (2012). Sexual health and the elderly: A review of the evidence. *The American Journal of Geriatric Psychiatry*, 20(8), 724-732.
- [35] Pratiwi (2021). *Deteksi dini gangguan kesehatan reproduksi*. Penerbit Lakeisha
- [36] Santoro, N. (2016). Menopause and aging: A review of hormone therapy and implications for health. *Maturitas*, 91, 49-57.
- [37] Sprecher, S., & Regan, P. C. (2002). The role of communication in maintaining intimacy and sexual satisfaction in older adults. *Journal of Marriage and Family*, 64(1), 95-108.
- [38] Snyder, P. J., et al. (2012). Testosterone and aging: The role of testosterone in older men. *The Journal of Clinical Endocrinology & Metabolism*, 97(4), 1124-1134.
- [39] Wang, C., et al. (2007). Prevalence and characteristics of erectile dysfunction in men with diabetes. *The Journal of Urology*, 177(2), 743-747.