
The Role Of Elderly Sexuality On Musculoskeletal Disorders (MSDs): Bibliometric Studies

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Abstract:

The United Nations' annual report states that the projection of the elderly population continues to increase. The projected population age is a crucial indicator in the ageing process. People who enter the ageing phase experience soft tissue pain and musculoskeletal disorders at a rate of 95%. However, sexual activity can reduce physiological and psychological disorders through the hormonal system. So these events are included in the sustainable development agenda.

Research objectives : The purpose of this research is to analyze the effects of sexual activity on musculoskeletal disorders.

Methodology : This study uses a bibliometric method by adopting a chart mapping of preferred reporting items for systematic reviews and meta-analysis. Research data obtained from search engines must be published or perish. Analysis of metadata text function using VOSviewer.

Result : The publication of 64 articles in the last five years was dominated by Scopus compared to PubMed. The research topic updates include sexual sphere characteristics and health care needs. Descriptively, the metadata states that sexual activity in the elderly influences musculoskeletal disorders.

Conclusion : However, sexual activity is carried out in a broad sense. This study only analyzes the patterns displayed by VOSviewer with a systematic review. Research conducted without confirming whether it uses a qualitative or quantitative approach.

Keywords: Bibliometrics, VOSviewer, elderly, sexuality, musculoskeletal disorder.

INTRODUCTION

World demographic projections show that the elderly population (elderly) continues to increase. The distribution of the human population is affected by the decline in fertility rates and the acceleration of the ageing process (Fisher et al., 2020). The ageing population is a global phenomenon or megatrend that every country cannot avoid. The United Nations annual report states that the elderly population >65 years old in 2019 reached 703 million people. This figure is projected to increase to 1.5 billion people by 2050. While the elderly population in Southeast Asia is the largest, reaching 260 million people. The high projection of the elderly population makes it an essential inclusion in the sustainable development goals (SDGs) program (Bauer et al., 2016).

Projected population age is an important indicator in the ageing process related to quality and life expectancy. The elderly population is the final interpretation of the ageing phase or biological changes (Palmer & Goodson, 2015). The elderly population limit varies from country to country (Fisher et al., 2020). However, globally, the World Health Organization states sequentially that the middle age limit is 45-54 years. Therefore, the age limit for the elderly is 55-65 years, the young elderly in the range of 66-74 years, and the elderly in the range of 75-90 years. At the same time, the age limit for the elderly is ancient in the range of more than 90 years (Smith et al., 2019; Yuliadarwati & Rosadi, 2021).

The ageing population in the ageing phase is a positive issue if the population is in the healthy and



productive category. However, this situation is in contrast to the real one. The elderly population is a crucial problem in Indonesia. This is due to the estimated increase in dependency ratio every year. According to a research report from Prakarsa in 2020, it was stated that this ratio was influenced by the health condition of the elderly (Djamhari et al., 2018). The state of dependence has a domino effect on the productive age population. In 2020, there will be three to six people in the productive age category who will receive economic or social welfare in the elderly age category. These events cause the population to be at a vulnerable age in all aspects of life, which exclusively occurs in the health aspect. It was found that the percentage of health condition disorders caused by the ageing phase was 95% of those experiencing soft tissue pain and experiencing functional limitations or MSDs (Fatmawati et al., 2017; Perruccio et al., 2017). Primary ageing is commonly referred to as the process of progressive changes in genetic function (Colombo et al., 2012). This pattern linkage has become the focus of updating a study to conduct a bibliometric analysis of sexual activity with MSDs. This statement is influenced by research that states that sexual activity can positively affect productivity. The effects affect the hormonal system so that it can reduce several physiological and psychological disorders (Naworska & Bak-Sosnowska, 2019).

METHODS

This research approach uses the bibliometric method. So the publication metadata analysis approach is based on statistical and mathematical patterns displayed by search engines. The search for publications uses publish or perish (PoP) with categories of article titles, abstracts, and keywords. The PoP search engine functions to separate metadata by reducing articles based on research criteria. Article reduction occurs during the publication period of 2016 to 2021. Graphically, the research method is in show Figure 1. The metadata is an accumulation of publications per year, studies of geriatrics and gerontology, authors, productivity, and publishers (Fisher et al., 2020). The metadata is in a file in Research Information Systems (RIS) and Comma Separated Values (CSV) formats. Each of these two files was developed as a graph map using VOSviewer. The development in the research is to construct article maps with the function of text analysis. The findings of these functions include the projection of relationships between articles through a mapping system of searching, clustering, zooming, and scrolling in detail (Van Eck & Waltman, 2021). As for the analysis and interpretation of metadata using the network, overlay, and density visualization. The metadata chart mapping adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) method, which focuses on developing publications on geriatric physiotherapy studies with a sub-study of sexuality and musculoskeletal (Tupan, 2016; Van Eck & Waltman, 2021).

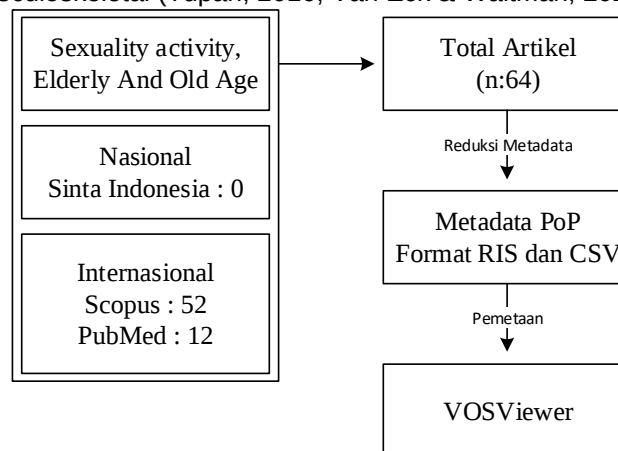


Figure 1 PoP Search Results



RESULT AND DISCUSSION

Metadata of PoP

The PoP search obtained metadata results of 64 publication articles, shown in Figure 2. In that range of years, research publications on sexual activity in the elderly showed fluctuating developments. However, a significant increase in publications occurred in 2016 in Scopus and PubMed. Overall, there are 57 case study articles and seven literature reviews (Van Eck & Waltman, 2021).

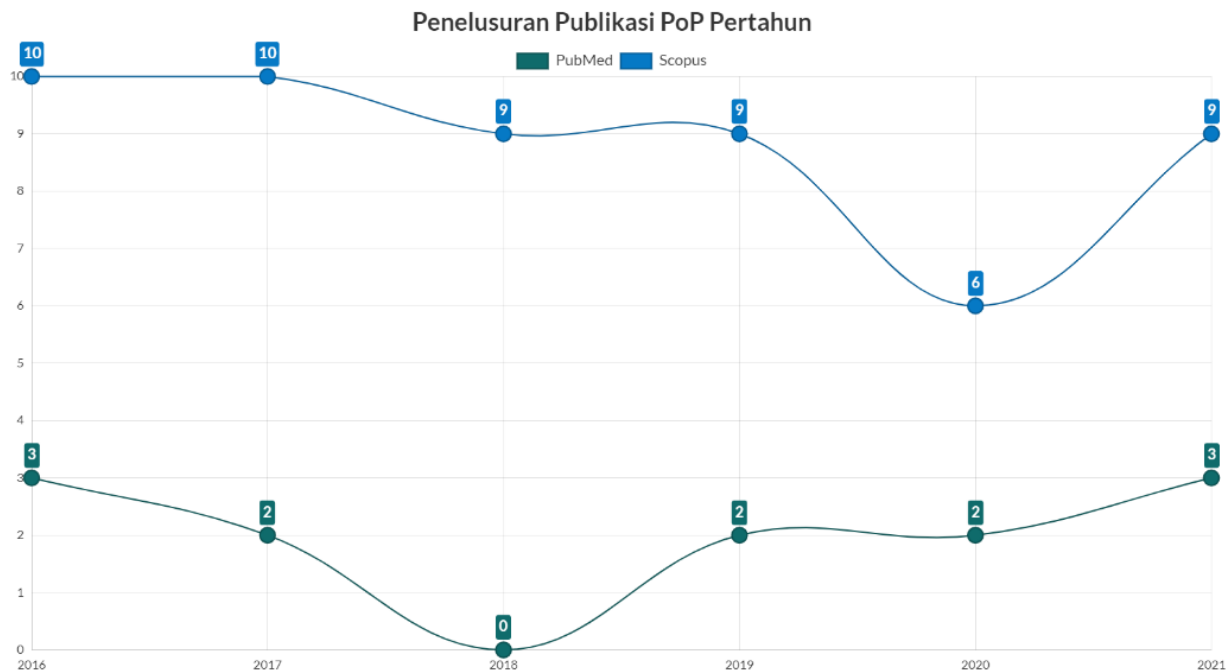


Figure 2 PoP Publication Graph

Research Visualization Mapping

Research visualization consists of network visualization and overlay visualization. For example, the visualization in Figure 3 shows three clusters with seven items each and eight links or paths. While Figure 4 shows that there are two clusters with five items each and six links or paths. The thickness or thinness of the trajectory shows the relationship between research topics. At the same time, the colour on the track indicates the time of the search for publications. For example, the latest discussion topics on Scopus consist of adults, elderly patients, sexual spheres, and health care needs (Van Eck & Waltman, 2021). Meanwhile, PubMed consists of a sexual sphere and characteristics. The two visualizations show the latest research topics of discussion referring to the sexual sphere, characteristics, adults, elderly patients, and health care needs. However, both of them remain focused on the main topic, the trajectory of elderly patients (Van Eck & Waltman, 2021).



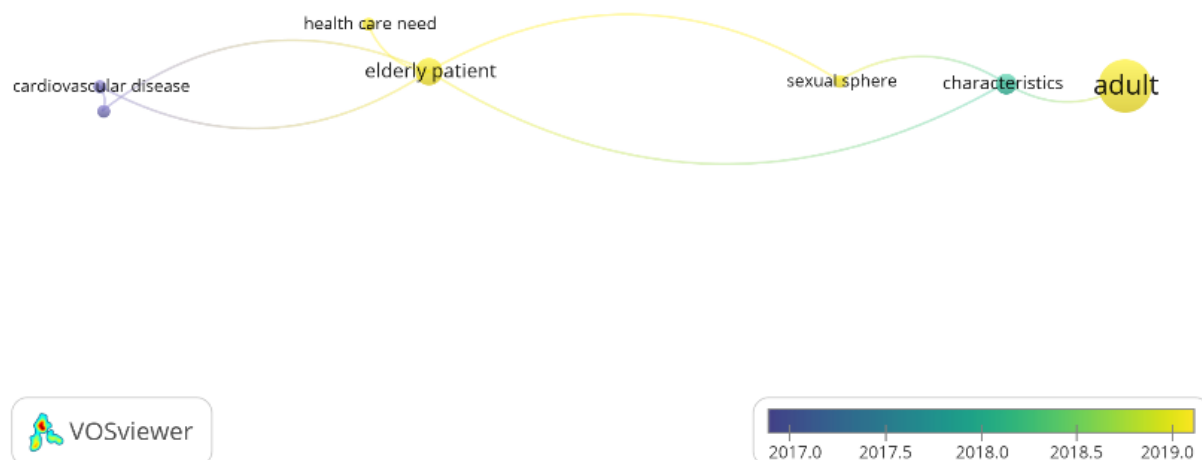


Figure 3 Scopus Research Visualization

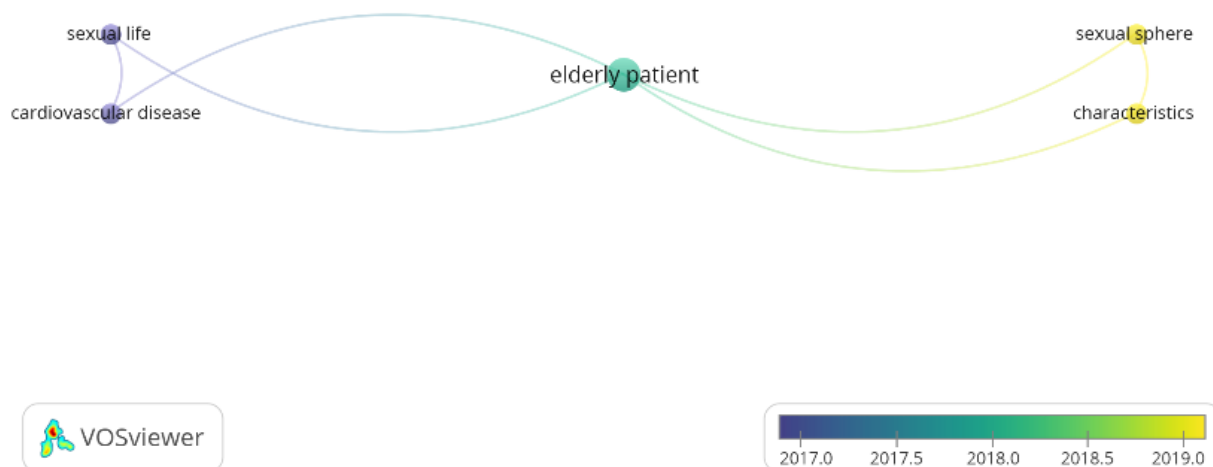


Figure 4 PubMed Research Visualization

Researcher Visualization Mapping

The VOSviewer visualization in Figure 5a shows the density of researchers who publish on Scopus. In comparison, Figure 5b shows the density of researchers who publish in PubMed. Item clusters dominate the intensity of publication. The cluster of publications based on the ranking of each Scopus is dominated by A. March, A. Nouri, and A. Sharma. Then PubMed was dominated by C. Giacomo, H. Karpuz, and J. Abellard. As shown in Figure 6, the visualization of Scopus and PubMed researchers has a link or network path between researchers. Based on the two visualizations, C. Giacomo became the dominating researcher with 36 links. The link is binding between one researcher and another researcher. The link attachment indicates the relevance and citation of the publications of C. Giacomo and others (Van Eck & Waltman, 2021).



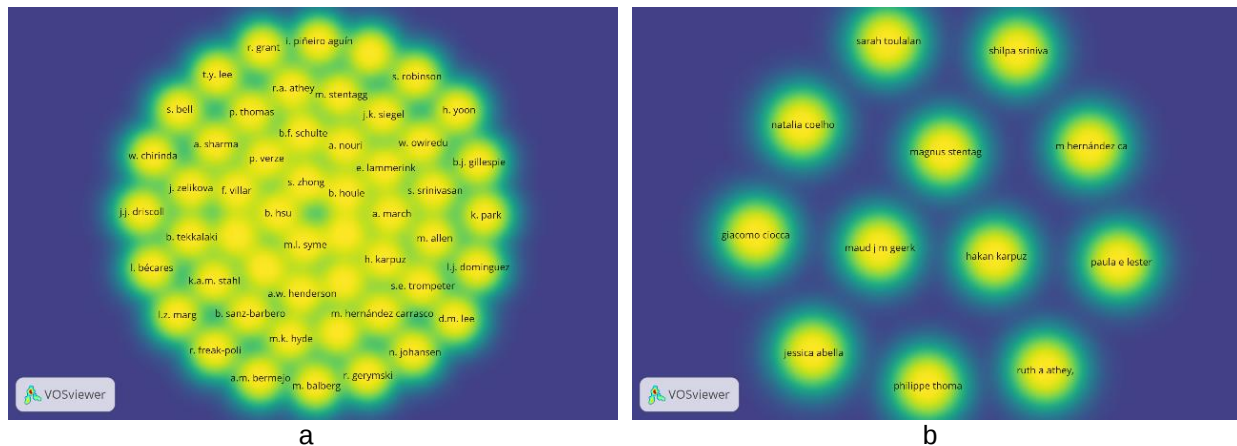


Figure 5. Visualization of Researcher Density a. Scopus, b. PubMed

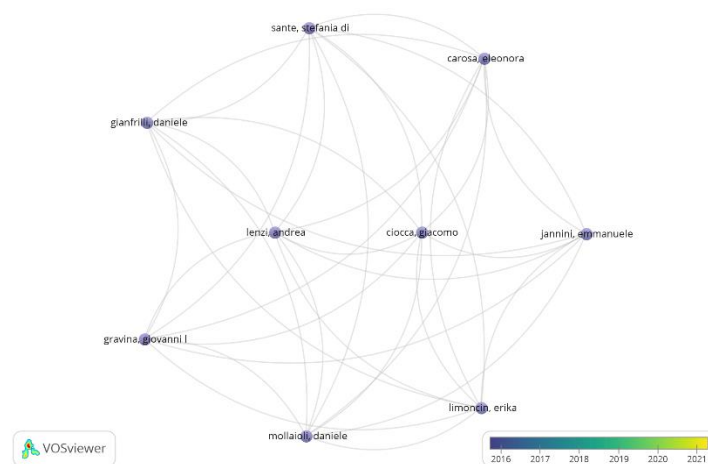


Figure 6. Visualization of Scopus and PubMed Researchers

Research Topic Density Visualization Mapping

The density visualization of VOSviewer in Figure 7a and Figure 7b shows the density of research topics in Scopus and PubMed. A yellow gradation indicates the density. The lighter the density colour, the greater the number of published research topics. There are three clusters in the density visualization map in Figure 7a. The first cluster is the adult characteristics and sexual sphere. The second cluster is elderly patients and health care needs, and the third cluster is cardiovascular diseases and sexual life (Van Eck & Waltman, 2021).



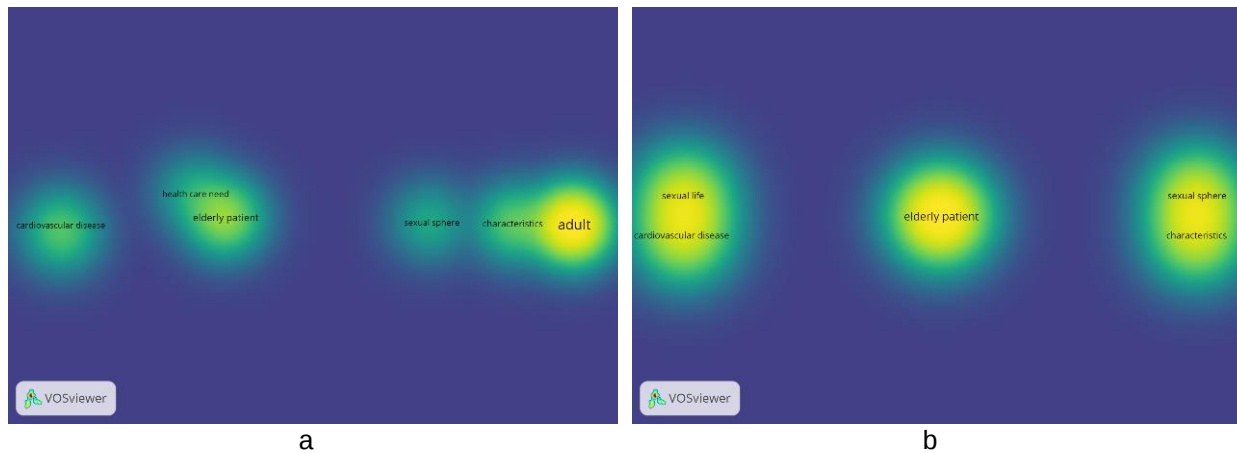


Figure 7. Visualization of Research Topic Density a. Scopus, b. PubMed

The density visualization in Figure 7b contains two clusters. The first cluster includes elderly patients, sexual life, and cardiovascular diseases. The second cluster focuses on characteristics and the sexual sphere. The results of the visualization mapping both show light and/or dim colour gradations. Research development and novelty can be done based on decomposition or gradation analysis. Further research recommendations can be made based on the third cluster of Scopus and the second cluster of PubMed (Van Eck & Waltman, 2021).

Elderly Sexuality On Musculoskeletal Disorders

Visualization of the VOSviewer cluster of the researcher's distribution with articles published in Scopus and PubMed focusing on the sexual characteristics of the elderly and sexual health. Every living creature needs sexuality as a basic need, not just a need for procreation (Smith et al., 2019). Physiologically, sexual activity can trigger the production of endorphins and analgesic hormones. The hormone causes oxygenation of various soft tissues explicitly. So, continuous oxygenation has a relaxing effect on soft tissues (Welsh et al., 2020). The oxygenation effect minimizes the occurrence of MSDs. However, the physiological state of the elderly is a consideration in sexual activity. This is due to a decrease in various functions. Women's decreased physiological function causes thinning of the skin wall, atrophy, raugment, decreased lubrication, and dyspareunia in sexual organs (Minetto et al., 2020). One of the other main factors that affect the quality of sexual activity is the gender factor (Lichtenberg, 2014). Sexual activity between a male and female significantly impacts the quality of sexual activity. This is due to the process of menopause in women. Asian women experience menopause on average in their middle age range. Menopause's psychosocial effects include anxiety, depression, decreased libido, and vasomotor symptoms that can last for years (Fisher et al., 2020).

The indicator of the ageing phase in women is marked by the end of the productivity of the hormone estrogen. This event is called menopause, or the opposite process of menarche (Palmer & Goodson, 2015). Menopause is divided into four stages in the ageing phase (Naworska & Bak-Sosnowska, 2019). The first stage, pre-menopause, is the event of a decrease in physiological function in the production of the ovarian estrogen hormone. Pre-menopausal events appear in the middle age range. The second stage, peri-menopause, is a transitional event from menopause. This transition is marked by the fluctuating intensity of the hormones estrogen and progesterone. The third stage, menopause, is the permanent end of the menstrual period. In comparison, the last stage is post-menopause, which is an event marked by a



decrease in the level of sexuality (Rao et al., 2018). Meanwhile, men in the age range of the elderly experience a decrease in testosterone hormone production, which causes a reduced desire for sexual activity (Cherpak & Santos, 2016). Furthermore, the decrease in hormonal function causes an imbalance in body functions, resulting in a decrease in the physiological responsiveness of the tissue—this imbalance results in musculoskeletal disorders (MSDs) (Minetto et al., 2020).

The relationship between sexual activity that positively impacts the quality of life of the elderly and their physiological state becomes a dilemma (Fisher et al., 2020). Self-care theory reveals that sexuality is not just procreation or sexual intercourse. However, it includes physical, psychological, social, and cultural aspects. Physical sexual activity that can be done by the elderly is touch, which has a psychic effect, including fantasizing activities, holding hands, kissing, touching, and hugging. Sexual activity in the elderly is not oriented towards the emergence of petting and sexual intercourse (Naworska & Bak-Sosnowska, 2019). The elderly's sexual activity based on social and cultural norms can be done with harmonization behaviour, namely communicating with partners, carrying out routine habits, controlling expectations, and regulating healthy living behaviour. Because, at the age limit, the elderly experienced a decrease in the phase of desire, arousal, and orgasm (Nóbrega et al., 2017; Ricoy-Cano et al., 2020).

CONCLUSION

Scopus have dominated the publication of articles and publishers in the last five years, and the research with the highest density is on the topic of elderly patient research. Meanwhile, the literature review from the metadata of the researcher's article stated that sexual activity in the elderly influenced MSDs. However, sexual activity is carried out in a broad sense. These activities can be carried out by the elderly without classifying age restrictions, including touching, fantasy, holding hands, kissing, touching and hugging. Sexual activity indirectly affects the psychological body rather than the physical body (Nóbrega et al., 2017). These events continuously lead to the activation of the hormonal system that can prevent MSDs from occurring (Palmer & Goodson, 2015). A preliminary investigation can be conducted using a bibliometric technique. This approach indicates that the topic of research on sexual spheres, characteristics, and health care needs can be the focus of further research development. However, in the future, it will also be necessary to confirm with various approaches, both qualitative and quantitative (Lichtenberg, 2014).





CONFLICT OF INTEREST

There are no conflicts of interest.

ACKNOWLEDGEMENT

Thank you to the Institute for Research and Community Service, Faculty of Health, University of Muhammadiyah Malang.

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