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MAPPING OBESITY RESEARCH TRENDS AMONG HEALTHCARE WORKERS: BIBLIOMETRIC ANALYSIS AND FUTURE RESEARCH DIRECTIONS

Pemetaan Tren Penelitian Obesitas di Kalangan Tenaga Kesehatan: Analisis Bibliometrik dan Arah Penelitian di Masa Depan

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ABSTRAK

Obesitas merupakan masalah kesehatan global, dan prevalensinya meningkat di dunia. Tujuan penelitian ini untuk menganalisis perkembangan penelitian obesitas pada tenaga kesehatan. Desain penelitian menggunakan metode kualitatif dengan pendekatan studi literatur yang menitikberatkan studi bibliometrik. Data sampel diperoleh 242 dokumen dari Scopus. Variabel penelitian berfokus pada obesitas dan tenaga kesehatan. Instrumen penelitian menggunakan reduksi data keterbatasan, jenis dokumen, tahap publikasi, jenis sumber, bahasa. Ditambah keterbatasan data dengan kajian bidang studi; kedokteran, ilmu sosial, profesi kesehatan. Analisis penelitian menggunakan software VOSViewer untuk memvisualisasikan temuan. Berikut temuan penelitian ini menunjukkan bahwa analisis bibliometrik memberikan informasi berguna tentang studi obesitas di tenaga kesehatan. Publikasi meningkat secara signifikan pada tahun 2022 dengan 19%. United State of America memimpin bidang penelitian ini. Topik seperti obesity, promotion obesitas, tenaga kesehatan, psikologi, perilaku hidup sehat, diabetes melitus, kesehatan masyarakat dan promosi kesehatan menjadi fokus penelitian obesitas di kalangan tenaga kesehatan. Namun, masih ada beberapa topik seperti kesadaran, persepsi, penyakit penyerta, media sosial, lansia, obesitas pada masa kanak-kanak, program penurunan berat badan dan pandemi yang terbuka untuk penelitian lebih lanjut. Peningkatan kesadaran di kalangan peneliti dan praktisi kesehatan mengenai dampak obesitas pada profesionalisme dan kesehatan tenaga kesehatan. Implikasi penelitian ini hanya berfokus pada kajian obesitas kepada tenaga kesehatan, diperlukan penelitian lebih lanjut dapat mengkolaborasikan antar disiplin untuk mencapai solusi yang lebih komprehensif terkait obesitas di masyarakat.

Kata kunci: *bibliometrik, kesehatan, tenaga kesehatan, manajemen rumah sakit, obesitas*

ABSTRACT

Obesity is a global health problem, and its prevalence is increasing in the world. This research aims to analyze the development of obesity research in health workers. The research design uses qualitative methods with a literature study approach focusing on bibliometric studies. Sample data was obtained from 242 documents from Scopus. The research variable focuses on obesity and health workers. The research instrument uses limited data reduction, type of document, publication stage, type of source, and language. Data limitations with field studies in medicine, social sciences, and health professions. The research analysis uses VOSViewer software to visualize the findings. The following research findings show that bibliometric analysis provides useful information about the study of obesity in health workers. Publication will increase significantly in 2022 by 19%. The United States of America is leading this area of research. Topics like obesity, health workers, psychology, health behavior lifestyle, diabetes mellitus, public health, and health promotion are the focus of research on

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obesity among health workers. However, there are still some topics such as awareness, perception, comorbidity, social media, very elderly, childhood obesity, weight loss programs, and pandemics that are open to further research. Increased awareness among researchers and health practitioners regarding the impact of obesity on the professionalism and health of health workers. The implications of this research only focus on obesity studies for health workers, and further research is needed to collaborate between disciplines to achieve a more comprehensive solution regarding obesity in society.

Keywords: bibliometric, health, health worker, hospital management, obesity

INTRODUCTION

Obesity is a global health problem, and its prevalence is increasing from year to year throughout the world [1]. Global obesity data refers to the NCD Risk Factor Collaboration (NCD-RisC), a network of world health scientists examining obesity trends in 222 million children, adolescents, and adults in 200 countries through 3,663 studies since 1990. Meanwhile, as of March 1, 2024, 6.53% of male adults were obese. This condition makes Indonesia ranked 168th out of 200 countries with the highest adult male obesity rate [2]. Thus, in Indonesia, obesity has become a topic of public discussion, especially among health workers [3]. The urgency of the obesity problem has affected various groups, including pregnant women, students, children, and adolescents [4]. Serious treatment is needed to prevent obesity in society to stabilize public health. Prevention can take the form of socializing the dangers of obesity on health, educating through digital spaces with platforms on the importance of maintaining a healthy lifestyle and nutritional intake, and the firm role of health stakeholders [5]. There are solutions that people can take to overcome obesity by adjusting their diet, regular exercise and physical activity, healthy lifestyle behavior, doctor's prescriptions for weight loss, and new attic surgery, which are also solutions offered to patients with severe obesity [6]. In this way, obesity can be controlled well in society, especially by health workers, who are the main actors who have an important role in dealing with obesity at all levels of the public [7].

Obesity is a pathological condition characterized by excessive accumulation of body fat, resulting in weight gain. Obesity can occur due to an imbalance between calorie intake and energy use expended by the body. The factors that cause obesity involve a complex interaction between genetic, environmental, behavioral, and psychological factors. Genetic predisposition can increase a person’s risk of obesity, but environmental factors such as an unhealthy diet and lack of physical activity also play an important role [8]. Obesity screening can be done by calculating the Body Mass Index (BMI); by definition, BMI is a measurement method commonly used to assess the proportion of a person’s weight by considering height [9].

Productive employees are assets that help the organization improve quality and service to customers. However, unhealthy lifestyle habits, lack of physical activity, and unbalanced diets can negatively impact employee health and productivity. In the context of intense work demands, understanding how physical exercise and dietary arrangements can enrich employee well-being is important [10] Employee well-being not only affects their personal aspects but also has direct consequences on productivity levels in the work environment. Previous research has explained that healthy living behaviors (regular physical activity and a balanced diet) can improve employee health status [11].

In the context of health, special attention is paid to health workers, including doctors, nurses, pharmacists, and other health professionals. They are the backbone of health systems that play an important role in the prevention, diagnosis, and treatment of various health conditions, including obesity. However, even though they are healthcare

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providers, health workers themselves are not immune to the problem of obesity [12]. The facts suggest that some studies suggest that the prevalence of obesity among healthcare workers may be the same or even higher than in the general population. The impact of obesity on health workers is vast and complex [13]. Judging from the physical impact, obesity can lead to various health problems such as joint pain, respiratory distress, and chronic fatigue, which can reduce the ability of health workers to carry out their duties efficiently [14]. One of the main causes of obesity is a diet that is high in calories but low in nutrients, which is combined with a lack of physical activity. Chronic diseases associated with obesity, such as diabetes and heart disease, can also increase absenteeism and decrease productivity. From a psychological perspective, obesity is often associated with low self-esteem, depression, and anxiety. Social stigma against obesity can also affect the mental health of healthcare workers, which in turn can affect their interactions with patients and colleagues. Additionally, healthcare professionals who are obese may feel less confident in providing advice on weight loss and healthy lifestyles to their patients, which can negatively impact the effectiveness of patient care.

The ideal hospital employees are those who demonstrate well-being and the ability to carry out important tasks in a Healthcare environment. First, general health is the main foundation, where staff are expected to have adequate energy levels, a strong immune system, and be free from chronic health conditions that can affect performance. In addition, physical condition and fitness play an important role, especially for those involved in physical tasks, such as lifting or moving patients. Regular physical exercise and an active lifestyle are key to supporting good physical condition [15]. Emotional balance and mental health have a major impact on the performance of hospital staff. This balance allows them to manage the stress and emotional distress that may arise in their daily tasks. Balanced nutrition and a good intake of food support overall health, providing the necessary energy and concentration during work hours. Good sleep habits and adequate hydration are also key factors for maintaining physical and mental balance [16].

High work pressure, accompanied by prolonged stress, makes it difficult for employees to monitor their health problems. To prevent obesity, this model is very important because it not only affects the well-being of individuals but also has an impact on the quality of care provided to patients. With a structured model, nurses can be provided with concrete guidance to prioritize proper physical exercise, a balanced diet, and spiritual practices that strengthen mental and emotional balance. It is not only about addressing the consequences of obesity head-on but also about creating a sustainable health culture among health professionals so that they can set a strong example for society in facing the challenges of obesity and improving the overall quality of life.

Based on the results of previous research, it is explained that obesity among health workers has been studied. Such as a study by Sumarni & Bangkele, (2023) entitled perceptions of parents, teachers, and health workers about obesity in children and adolescents [17]. This study provides an overview of public perceptions of obesity, obesity in adolescents, the impact of obesity on adolescents' health and daily activities, and prevention of obesity in children and adolescents. In general, the public has understood the definition, health impact, and prevention of obesity in children and adolescents. However, there is still a notion that obesity in children and adolescents is something that families are proud of. Then, a study by [10] found that health workers are prone to being overweight due to the level of stress they experience at work and irregular working hours. A study by Klinic, Soysal, & Ozel, showed that obesity was found to be high among health workers in Family Health Centers [18]. In addition, obesity is also widely detected in doctors, midwives, and nurses. Urgent action policies are needed to encourage patients and health workers to be aware of and prevent obesity and have a

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healthy lifestyle. The purpose of this study is to analyze the development of research on obesity in health workers in hospitals.

METHODS

This research design used a qualitative method with a literature study approach emphasizing bibliometric studies. Bibliometric studies are an approach to highlight critical insights resulting from the scientific literature supplied annually by researchers from different countries around the world [19]. Bibliometric studies offer several additional advantages, such as identifying knowledge focuses that require further investigation and showing the most popular research topics in a particular field [20]. In conducting research analysis, the author uses the Vosviewer application to assist in analyzing and visualizing the data of research results. The steps in the data search process in Scopus are presented in a PRISMA flow diagram. The flow diagram depicts the flow of information through the different phases of a systematic review. It maps out the number of records identified, included, and excluded [21]. Sample data was obtained from 242 relevant documents from Scopus. The data in this study consists of articles published between 2014 and 2023 (the last ten years) in journals published in the Scopus database. This research variable focuses on obesity and health workers. The research instrument uses limited data reduction, type of document, publication stage, type of source, and language. Plus, data limitations with field studies in medicine, social sciences, and health professions. Analysis of research data using VOSViewer software to visualize Scopus big data findings. The consideration for using the Scopus Database as a data source is that this database is one of the two most important databases and high-standard articles published in journals. In figure 1 and table 1 below, we present the criteria and filters that we use in data collection and data analysis techniques.

Table 1. Data Reduction Formula Searched by Scopus Database

Search		Obesity AND Health Worker
Years	AND	2014-2023
Document Type	AND	Article
Publication Stage	AND	Final
Source Type	AND	Journal
Language	AND	English
Subject Area	AND	Medicine OR Social Science OR Health Professional
Exact Keyword	AND	Obesity OR Health Worker

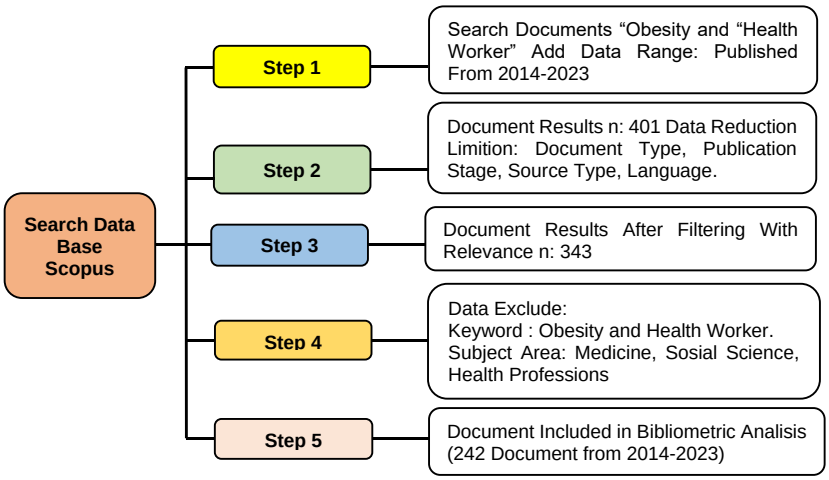

Figure 1. The PRISMA Flow Diagram is Used to Identify, Screen, and Include Papers for Our Bibliometric Review (Source Fig: Processed by Author 2024).

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RESULT

General Information and Annual Publication Output

The finding data in Figure 2 shows the number of publications per year from 2014 to 2023 for the first set of 242 publications. The number of publications has continued to increase significantly in recent years. This underscores the increasingly relevant theme of obesity among health workers. The following is a visualization of the progress of the Nurse Resilience study in the last ten years.

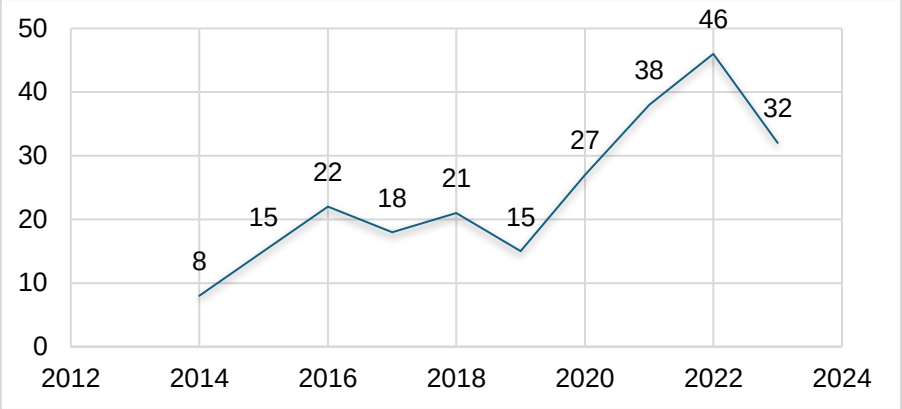

Figure 2. Publication by Year About Obesity Among Health Workers

In 2022, there were 46 scientific publications on obesity among health workers indexed by Scopus, making it the most frequently discussed topic in the report. Figure 2 shows more clearly the trend of scientific publications on obesity among health workers. One of the main factors contributing to the increase in the number of publications is the growing global awareness of the obesity problem. Obesity is not only an individual health problem but also a public health problem that requires serious attention from a wide range of stakeholders, including health workers [22] Intensive global and national health campaigns, as well as government policies focused on tackling Obesity, can increase research interest in this area. Healthcare workers are often at the forefront of identifying and addressing obesity problems, which can lead to more relevant scientific research and publications. Then the COVID-19 pandemic has had a significant impact on various aspects of life, including the field of health research. In 2020 and 2021, a lot of resources and attention were diverted to dealing with the pandemic. This may have led to a temporary decline in the number of publications on obesity as the main focus is on handling the pandemic [23] However, as a link between obesity and a risk factor for COVID-19 has been found, there is increased research interest in understanding more about obesity and how to deal with it in the context of the pandemic. This may explain the increase in the number of publications in the following years.

Figure 2 shows the evolution of research on obesity in healthcare workers from 2014 to 2023. The data presented reflect an increase in the number of studies conducted during the period, indicating an increasing interest in these health issues in the context of health work. A noticeable trend is that there is a significant growth in the number of studies conducted year over year, signaling increased attention to obesity among healthcare workers [24] Research on obesity in healthcare workers is becoming increasingly important because they are an integral part of the healthcare system and have a direct impact on the care provided to patients. Better knowledge of the factors that affect obesity among healthcare workers can help in the development of more effective prevention strategies and interventions.

In addition, it can also be seen that several countries respond to obesity among health workers, including. More details can be seen in table 1 below.

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Table 2. Ten Countries Focusing on Obesity Research in Health Workers

Country/Territory	Total	Percentage
United States	90	42%
United Kingdom	27	13%
Australia	18	8%
Mexico	18	8%
India	13	6%
South Africa	12	6%
Spain	10	5%
Brazil	9	4%
Netherlands	9	4%
Canada	8	4%

Source. Bigdata of Scopus, 2014-2023

Table 2 shows that research related to obesity among health workers is very important to carry out as public health education. This finding is supported by The United States (42%) which is a country that is very concerned about treating obesity by health workers. This data is a significant quantitative result of big data findings from Scopus in the ten highest countries and focuses on solving obesity. Meanwhile in Indonesia, quantitatively it is ranked 22nd highest in the world according to Scopus big data regarding obesity research among health workers. The findings of the problem show that obesity in Indonesia is significant for school children aged 5-12 years at 18.8%, children aged 13-15 years at 10.8%, and 16-18 years at 7.3% [25]. In contrast to the findings, the problem of obesity in the United States places cancer as the main focus above diabetes (72%), heart disease (72%), mental illness (65%), and HIV infection and AIDS (46%). Almost all Americans (94%) agree that obesity is a source of other diseases and increases the risk of premature death [26]. Furthermore, researchers visualized the findings data with images of geographical maps of the country to see the findings more clearly.

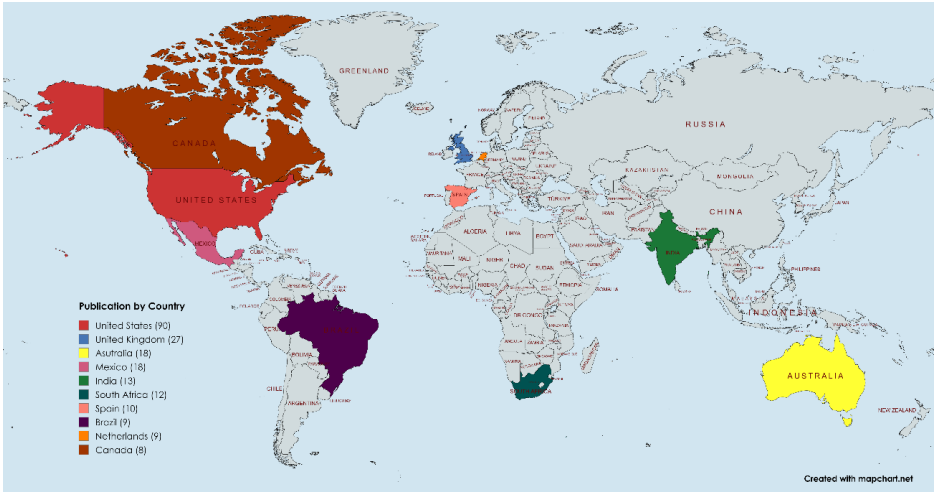

Figure 3. Publication by Country, from 2014-2023

Figure 3 shows that the United States is at the top of the list with the highest number of publications, namely 90 publications. This dominance may be due to several factors, including population size, advanced research infrastructure, and substantial funding support from various institutions such as the National Institutes of Health (NIH). The US also has several leading academic institutions and research centers that focus on public health issues, including obesity. In addition, obesity is a major health problem in the US,

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which has prompted many studies to find effective solutions. The United Kingdom ranks second with 27 publications. The country also has a strong tradition of research, with universities such as the University of Oxford and the University of Cambridge known for their public health research. Support from institutions such as the National Health Service (NHS) and various health charities has contributed to the high productivity of research in the United Kingdom. Proactive and prevention-focused public health policies also play an important role in encouraging scientific research in this area.

Australia ranks third with 18 publications, supported by a strong public health system and a strong commitment to public health. Obesity is a major health issue in Australia, both among the general public and health workers. The government and health institutions in Australia tend to fund research that focuses on obesity prevention and management. Then there is Mexico, which has the same number of publications as Australia. Mexico faces major challenges related to high obesity rates among its population, including health workers. The government and research institutions in Mexico have stepped up efforts to research and address this problem. Universities and health research centers in Mexico contribute significantly to producing scientific publications to understand and treat obesity. India and South Africa also showed fairly high productivity, with 13 and 12 publications, respectively. In South Africa, the obesity problem has become a major focus of public health research. This is driven by the high prevalence of obesity in the country, which contributes to the rising rates of non-communicable diseases such as diabetes and heart disease. The South African government has responded by implementing various national health policies and programs, including campaigns to raise public awareness about the importance of healthy diets and physical activity, as well as regulations against the marketing of unhealthy foods. In India, increased awareness of the obesity problem, support from the government, and international collaboration have led to an increase in the number of studies.

Brazil, with nine publications, and the Netherlands, with nine publications, also showed significant contributions. Both countries face complex public health problems, including high rates of obesity. Research in the Netherlands often focuses on the socio-economic impact of obesity, while in Brazil, research tends to focus on prevention and intervention. Canada has eight publications. Canada, with its advanced health system and focus on public health research, produces a lot of important research. Overall, this analysis shows that the number of scientific research publications related to obesity among health workers is greatly influenced by a variety of factors, including funding support, research infrastructure, health policies, and country-specific public health challenges. Countries with strong support for proactive research and health policies tend to be more productive in producing relevant and impactful scientific publications.

Figure 3 shows countries that are productive in publishing research on obesity in healthcare. The data presented allows stakeholders to understand the geographical distribution of research on obesity in healthcare, identifying countries that have significant contributions in this area. This information can be used to strengthen cross-country collaboration in efforts to address obesity in health workers and expand knowledge and effective interventions [27]. The findings in table 2 show that the ten articles with the most citations are related to research using the keyword "obesity." in Scopus.

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Table 3. Most Articles Cited Most Frequently Cited Articles in Scopus

No	Document title	Authors/ Year	Research design	Source	Cited by	H-Index
1	Increased mortality in schizophrenia due to cardiovascular disease - a non-systematic review of epidemiology, possible causes and interventions	[Ringen et al. 2014]	Non-systematic review using searches in PubMed on relevant topics	Frontiers in Psychiatry	264	Q2
2	Adherence to the Mediterranean diet in a sample of Tuscan adolescents	[Santomauro et al. 2014]	Experimental design	Nutrition	74	Q1
3	Influence of Pokémon Go on physical activity levels of university players: A cross-sectional study	[Wong 2017]	Survey design	International Journal of Health Geographics	73	Q1
4	A comparison of a social support physical activity intervention in weight management among post-partum Latinas	[Keller et al. 2014]	Randomized controlled trial exploring a social	BMC Public Health	57	Q1
5	Urban-rural differences in the prevalence of diabetes mellitus among 25–74-year-old adults of the Yangon Region, Myanmar: Two cross-sectional studies	[Aung et al. 2018]	Two cross-sectional studies, using the WHO STEP methodology	BMJ Open	52	Q1
6	Ideology, Obesity and the social determinants of health: a critical analysis of the obesity and health relationship	[Medvedyuk, Ali, and Raphael 2018]	Qualitative Design	Critical Public Health	50	Q1
7	Lifestyle health behaviors of nurses and midwives: The 'fit for the future' study	[Perry et al. 2018]	An electronic cross-sectional survey	International Journal of Environmental Research and Public Health	48	Q1
8	Epidemiological study of non-communicable diseases (NCD) risk factors in the tribal district of Kinnaur, HP: A cross-sectional study	[Negi et al. 2016]	Correlational Design	Indian Heart Journal	33	Q3
9	Sweetened beverage consumption and the risk of hyperuricemia in Mexican adults: A cross-sectional study	[Meneses-Leon et al. 2014]	A cross-sectional	BMC Public Health	32	Q1

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No	Document title	Authors/ Year	Research design	Source	Cited by	H-Index
10	A Community Health Worker–Delivered Intervention in African American Women with Type 2 Diabetes: A 12-Month Randomized Trial	[Lutes et al. 2017]	Experimental Design	Obesity	29	Q1

Table 3 shows that the document is the main reference in studying obesity among Health Workers. Research from Ringen et al. which in the study explored the increase in mortality in schizophrenia due to cardiovascular disease – a non-systematic review of epidemiology, possible causes, and interventions. The findings of his study explain that the risk of death from cardiovascular disease and cardiovascular disease in people with schizophrenia is increased, but the underlying mechanism is not yet fully known [28]. Coordinated interventions across different healthcare chains may be able to reduce risk. There is an urgency to develop and implement effective programs to improve the life expectancy of people with schizophrenia, and we argue that mental health workers should be more involved in this important task. The second most cited article by researchers on this theme is from Santomauro et al., where the study explored adherence to the Mediterranean diet in a sample of Tuscan adolescents [29]. The findings of this study explain normal weight or overweight/obesity and refer to healthcare workers as a source of information about diet, which appears to be a protective factor against poor adherence to the Mediterranean diet. The research sample showed deviations from the Mediterranean diet. The implementation of public health policies targeting adolescents certainly needs to be carried out to encourage healthier lifestyle choices. The nutritional pattern of the Mediterranean diet should be one of these options. Meanwhile, in articles related to obesity in health workers, the most cited data were written by Schroeder et al. (2018) with the title "*The Role and Impact of Community Health Workers in childhood obesity interventions: A Systematic Review and Meta-analysis"* The research findings show that health workers play a role in obesity interventions in children at home, clinics, schools, and community settings. The intervention focused primarily on children from underserved populations. Meta-analytic findings also showed a small but significant impact on BMIz and BMI percentile (BMIz [7 studies]: -0.08, 95% CI: -0.15, -0.01, p = 0.03, I 2 = 39.4%; BMI percentile [2 studies]: -0.25, 95% CI: -0.38, -0.11, p < 0.01, I 2 = 0%). This review suggests that partnering with community health officials can be an essential strategy to reduce childhood obesity disparities and advance health equity [38].

Network, Development trends, and Research density

This study displays the network and density of research publications on obesity Among Health Workers in 2014-2023. The analysis showed that the network aimed to find out what keywords have a strong relationship with the topic of obesity Among Health Workers**.** Based on figure 4, a very complex network diagram or mind map can be seen that shows the interrelated relationships between various concepts related to obesity Among Health Workers. This figure shows the pivotal point of obesity, which is the main subject in this study F. Y. Wong says that the impact of Pokémon Go on physical activity can provide insights to public health workers in using novel strategies in health promotion [30]. There are various vertices of various sizes connected to the central node through lines, which represent the degree of strength or type of relationship between the concepts [39]. Each node in the diagram is labeled with a specific keyword, which is closely related to obesity Among Health Workers. Some of the keywords that can be seen include obesity, Health Worker, Psychology, Health behavior, Lifestyle, Diabetes Mellitus, Public Health, and Health Promotion. Each of these keywords provides direction

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regarding the research focus and relevant conceptual areas. More details can be seen in figure 4 below.

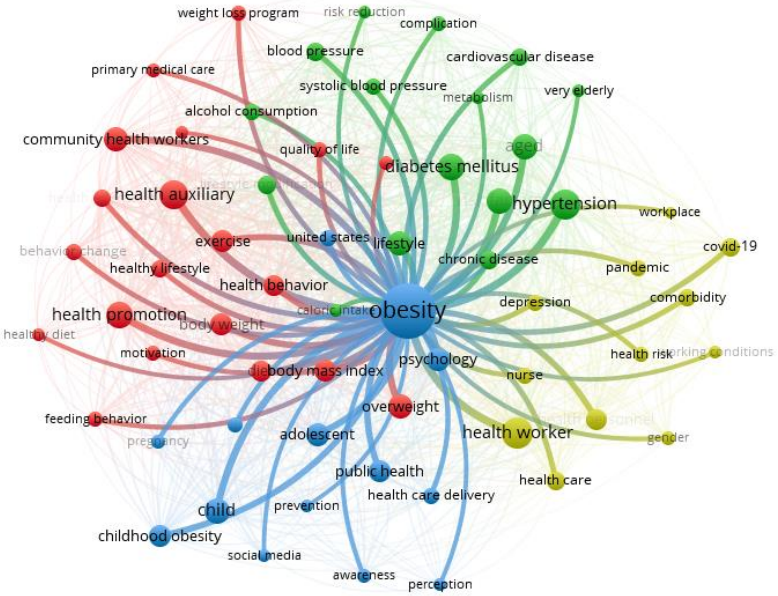

Figure 4. Obesity Theme Among Health Workers

Then it can be seen in figure 5 shows research trends in the 2014-2023 period regarding obesity Among Health Workers indexed by Scopus. In 2018, research on obesity Among Health Workers took more of the viewpoint of Psychology, Health Auxiliary, Body Mass Index, and Community Health Workers. Then, in 2019 - 2020, research on obesity Among Health Workers took the perspective of Public Health, Children, healthy lifestyle, Childhood obesity, and Health Care Delivery. Finally, in 2021 - 2023, research on obesity Among Health Workers shifted to a trend of discussion about health workers, health risks, gender, nurses, pandemic, and comorbidity [40]. More details can be seen in figure 5 below.

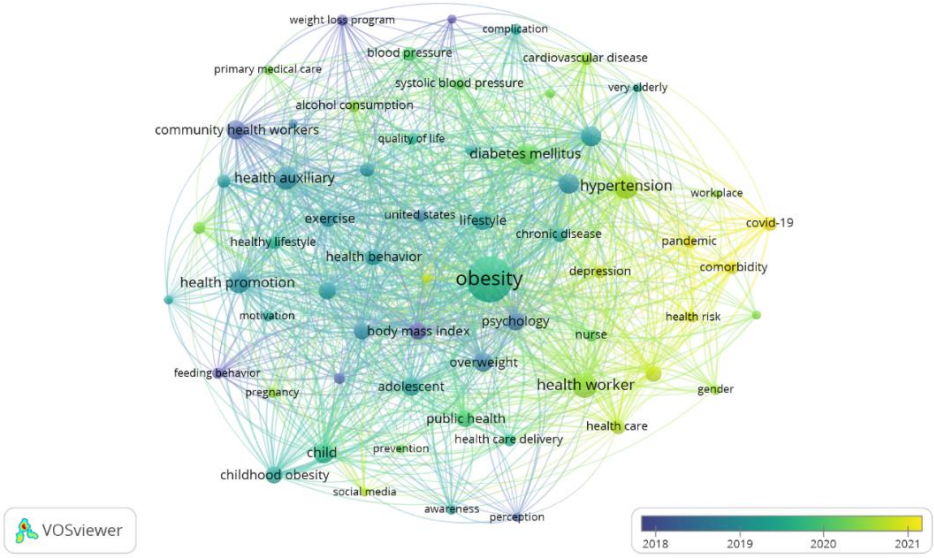

Figure 5. Portrait of the Development of Obesity Among Health Workers

The density of Vosviewer can show you which keywords have been discussed and which have not. In other words, density is used to search and find novelties for further

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research related to nurse resilience [41]. In the concept of using density in VOSviewers, it can be seen that the yellow color indicates the most frequently talked about topic; the denser the keywords surrounded by yellow, the more research that uses this point of view as the focus discussed. On the other hand, if the yellow color is not too concentrated in the keyword, then it has not been discussed too much in the research. Therefore, these keywords can be used as a novelty in future research. Figure 6 shows that obesity, Health Worker, hypertension, Diabetes Mellitus, Health Promotion, and Health Auxiliary form a dense group, indicating that these terms are often linked or discussed together in the literature being analyzed. Meanwhile, on the other hand, awareness, perception, comorbidity, social media, the very elderly, childhood obesity, weight loss programs, and pandemics tend to appear on the outermost side of the visualization [42]. This shows that these terms have not been widely researched or have less relevance to the main terms. Specifically, this indicates that the region is still open for further research. Further research in this area has the potential to provide new insights and enrich our understanding of the relationship between various aspects of obesity among health workers and other terms in the practice of health workers and health management [43]. More details can be seen in figure 6 below.

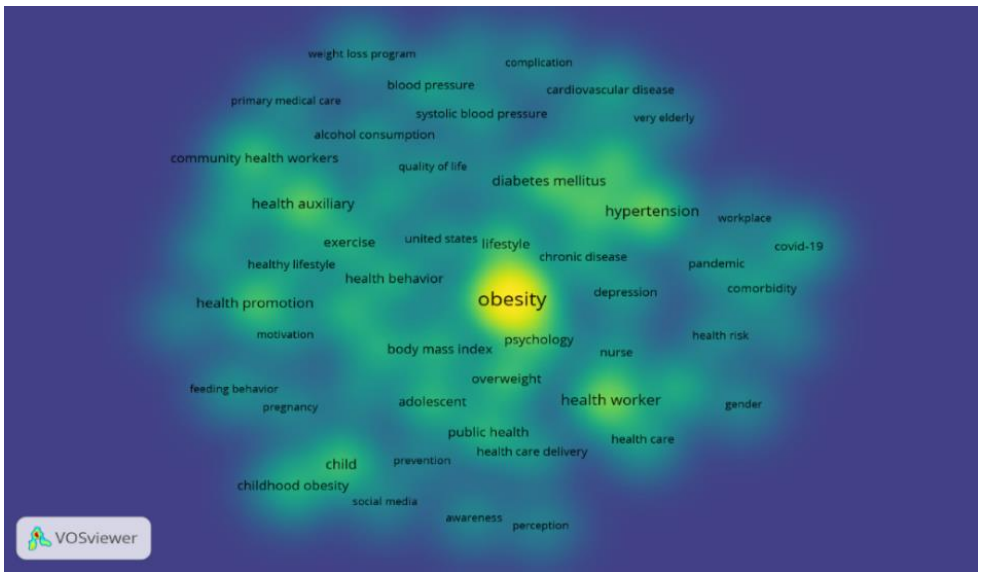

Figure 6. Research Agenda and Future Research on Obesity Among Health Workers

Indonesia itself is one of the countries that experience many obesity sufferers in health work due to unhealthy lifestyles and inadequate nutritional intake. In research in Indonesia related to obesity, were 32 articles found in Scopus data. Thus, this condition needs to become the main focus for conducting research related to obesity prevention to suppress this disease of high obesity in society. This finding is supported by universities in Indonesia, which have concentrated on conducting research with the keyword "obesity in worker health". More details can be seen in figure 7 below.

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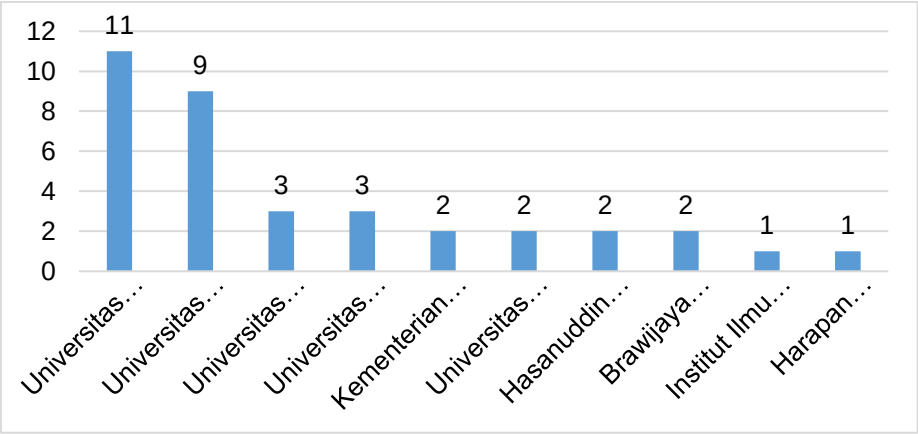

Figure 7. Ten Universities Consistently Researching Obesity in Indonesia

Figure 7 shows that Airlangga University is a campus highlighting obesity-related research in health workers. Thirty-six research studies examine the topic of obesity, based on the total number of ten universities in Indonesia. Thus, it is essential to carry out prevention so that the public does not increase the risk of obesity. This research is still minimal because it only focuses on obesity in health workers. The involvement of stakeholders is needed so that they can work together to deal with obesity so that, in the future, we can reduce the impact of obesity on society in Indonesia.

DISCUSSION

Obesity is an important problem that needs to be overcome in the world of health [44]. Because obesity is also said to be one of the early diseases that can cause various other diseases, such as joint pain, respiratory problems, and chronic fatigue, it is appropriate to make it the main focus of attention, and it is important to highlight, especially obesity in health workers. Health workers in this research have become trendy in the spotlight regarding the potential development of obesity levels among them [45]. The social impact that will arise is that it can disrupt the performance of health workers and prevent them from being able to carry out their duties properly [46]. Health workers become easily exhausted, causing respiratory problems and other extreme adverse effects. Thus, conducting discussions and research related to the problem of obesity is something that must be disclosed by academics to prevent and reduce the potential rate of obesity among health workers. The problem of obesity also affects many countries in the world as a phenomenon in which individuals experience health problems. One factor is the lack of physical movement during activities [47].

In Uruguay, it shows that the frequency of obesity increases with age (9.5% in children <2 years old, 18.8% in children aged 6 years, 20.4% in children aged 11 years, 26.6% in children aged 13–15 years, and 35.3% in adults). Additionally, 13.8% of women started pregnancy underweight, and obesity rates increased during pregnancy from 36.7% at the start to 46.5% at the end [48]. Meanwhile, in Costa Rica, obesity is more common in people who live in rural areas compared to urban areas [49]. In contrast to what Chile is facing, it shows that the public recommends obesity to reduce excess weight as the main prevention that needs to be done [50]. In addition, Mexico shows the same results as the total respondents: 62.2% reported taking steps to lose weight, with 27.6% and 17.1% having used herbal/over-the-counter products and prescription drugs [51].

Meanwhile, according to WHO itself, it generally occurs more often in women (13%) than men (11%). From 1980 to 2013, the prevalence of overweight and obesity among housewives in the world continued to increase [52]. The increase in obesity among housewives is caused by several factors, especially lifestyle changes, including

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decreased physical activity and excess intake of high-energy foods [53]. Potential supporting factors for obesity problems include age, genetics, education level, ethnicity, socio-economics, physical activity and lifestyle. One of the actors who has an important role in dealing with obesity is health workers [54]. Therefore, the State needs to pay attention to the welfare and productive level of health workers in creating a healthy environment for the public because public health workers play various roles in obesity interventions in children at home, housewives, clinics, schools, and community environments [55].

The limitations of research related to obesity among health workers require a more in-depth study, especially the lack of research on obesity among health workers using a social media analysis approach, looking at its impact and how significantly the media provides information related to obesity [56]. In addition, this research confirms that there is still a lack of discussion regarding the awareness of health workers themselves regarding obesity because even though health workers know about health, sometimes they do not apply it to themselves [7]. On the other hand, obesity in children is also important to highlight in this case, as an effort to prevent it as early as possible. Self-awareness is also an important aspect of treating obesity among health workers [57]. Therefore, something that can be addressed in this research in the future is to carry out a weight loss program. Increase public awareness of the importance of maintaining a healthy and balanced diet. Providing mental support and counseling for individuals struggling with obesity can help them overcome the emotional factors that contribute. Plus, government policies that support access to healthy food should be encouraged, such as subsidies for fresh products or regulating the marketing of unhealthy food [58].

CONCLUSION

It is important to address the obesity problem well, especially for health workers, to suppress the emergence of other diseases that start from the main factor, namely obesity. Plus, obesity has touched many groups; children and pregnant women are the main focus of attention in many countries in the world. The United States is very significant in providing studies on this phenomenon because it seriously threatens public health. The main challenge faced by obesity starts from the individual himself. Maintaining a healthy diet and lifestyle is important to implement as early prevention. The implications of this research only focus on obesity, which is discussed among health workers. This research provides important insights for developing policies and programs aimed at reducing the prevalence of obesity among health workers and improving their well-being. It is hoped that further researchers will be able to map the phenomena that arise from obesity in society from various perspectives—especially focusing on research in Indonesia to make a more specific contribution to the various health problems resulting from obesity.

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