ORIGINAL ARTICLE

Physical Therapy Journal of Indonesia (*PTJI*) 2023, Volume 4, Number 2: 231-235
E-ISSN : 2722-6034 ; P-ISSN : 2722-0125

Different profiles of well-being status in osteoarthritis conditions, type II diabetes mellitus, and hypertension based on gender

Syamsul Ari Wicaksono[1], Farid Rahman[1*]

[1]Physiotherapy Department, Universitas Muhammadiyah Surakarta, Indonesia.

*Corresponding author:
Farid Rahman;
Physiotherapy Department, Universitas Muhammadiyah Surakarta, Indonesia;
farid.rahman@ums.ac.id

Received: 2023-06-16
Accepted: 2023-09-02
Published: 2023-10-03

ABSTRACT

Background: Degenerative diseases are becoming more prevalent in developing nations, including gender. This impacted well-being, the need to improve personal well-being in health, movement, religion, work, diet, emotional well-being, family, and friends.

Methods: Sectional research design used analytical observation. One hundred twenty-one participants made up the sample by the researcher's inclusion criteria. Assessment wheel for the Instrument Model for Healthy Living. They analyzed data with both single and multiple variables.

Results: A *p*-value of 0.907 was found for the relationship between health status and conditions such as osteoarthritis, type II diabetes, and hypertension. A *p*-value of 0.623 was observed for gender-based well-being status. Osteoarthritis, type II diabetes, and hypertension received a *p*-value of 0.904 for the gender interaction on group health.

Conclusion: The groups with osteoarthritis, type II diabetes mellitus, and hypertension all had similar levels of well-being. Gender has no bearing on one's level of well-being. In the groups with type II diabetes, hypertension, and osteoarthritis, there were no gender differences in the well-being interactions.

Keywords: gender, hypertension, osteoarthritis, type II diabetes, well-being.
Cite This Article: Wicaksono, S.A., Rahman, F. 2023. Different profiles of well-being status in osteoarthritis conditions, type II diabetes mellitus, and hypertension based on gender. *Physical Therapy Journal of Indonesia* 4(2): 231-235. DOI: 10.51559/ptji.v4i2.151

INTRODUCTION

In Indonesia, non-communicable diseases rose from 41.7% to 59.5%, while infectious diseases fell from 44% to 26.1%.[1] The World Economic Forum estimated in 2012 that non-communicable conditions in Indonesia would cause economic losses of around Rp58.542 trillion between 2012 and 2023.[2] The prevalence of knee osteoarthritis (OA) among people 61 is as high as 5%. With a rate of 15.5% for men and 12.7% for women, Indonesia has a relatively high prevalence of knee osteoarthritis.[3] According to research from the International Diabetes Federation, there will be 14.1 million people with diabetes mellitus (DM) in Indonesia by 2035, up from 9.1 million in 2014. These figures show how crucial it is for the government to handle the diabetes mellitus problem, especially with the help of medical experts.[4]

Because gender impacts the development of osteoarthritis, type II diabetes mellitus, and hypertension, it is an unavoidable element that needs specific consideration. Menopause has a negative influence because an increase in life expectancy produces an increase in the number of women who experience it.[5] Women going through menopause may develop fat deposits, particularly in the lower joints, which puts more strain and weight on the joints. This may make women more likely to get osteoarthritis during this time.[6]

The most prevalent type of osteoarthritis is secondary osteoarthritis, which comprises idiopathic osteoarthritis, predisposing pathological conditions, and arthritis. Over the age of 65, around 60% of men and 70% of women are affected by this degenerative disease.[7] The information gained leads to the conclusion that women are more susceptible to osteoarthritis OA than males are. Additionally, it was discovered that, depending on their gender features, women tend to have a higher prevalence of DM than men do among those aged 15 and over.[8]

The experience of spiritual change can heighten people's sense of the meaning and purpose of life and encourage a stronger propensity to set objectives and take ownership of their actions.[9] When a family member has osteoarthritis, hypertension, or type II diabetes mellitus, the family plays a crucial role in maintaining their overall health. The family plays a significant part in sustaining and obtaining the desired fitness level. Therefore, it is not just the individual who is responsible for this. Individuals who receive social support from their families report less discomfort from osteoarthritis, improving their general quality of life.[10] Emotional support from family members is the primary and most significant source of assistance that affects how elderly hypertensive people maintain their health.[11]

Family support in physical activity is also necessary, and one of these activities is a light and simple physical activity like walking without forgetting mental and spiritual support.[12] Regular walking has

been shown to positively impact blood pressure, lowering blood pressure by 4–8 mmHg, improving blood circulation, and reducing blood pressure in general.[13] To improve insulin function and increase their capacity to control blood glucose levels, patients with type II diabetes must also engage in walking activities.[14]

Iwamoto et al.'s 2011 literature analysis in Tokyo examined the efficacy of aerobic exercise and strengthening activities for knee OA. Seven systematic review studies and two meta-analyses are discussed in this review. Findings show that people with knee OA can significantly improve their physical function and reduce pain through muscle stretching and aerobic exercise.[15] This study was to prove whether there are differences in the profile of welfare status in osteoarthritis, type II diabetes mellitus, and hypertension based on gender.

METHODS

This study used a cross-sectional analytic design. This study was conducted on March 13, 2022. Research subjects were determined based on inclusion criteria (sufferers of osteoarthritis grade II for at least one year with the Kellgren-Lawrence grade system, patients with hypertension for at least one year, and patients with type II diabetes mellitus at least one year) and exclusion criteria (have cognitive impairment, have orientation disorder). The dependent variable in this study is welfare status. In addition, gender is a cofactor variable along with the independent variables of osteoarthritis, type II diabetes, and hypertension.

The research subjects at the Gatak Health Center between January and June were 40 people with osteoarthritis, 41 with hypertension, and 40 with type II diabetes. They used the Openepi platform to calculate the total sampling for this study, including 121 respondents. This study uses a purposive sampling method as a sampling strategy. This work uses two-way ANOVA for univariate and multivariate data analysis. They examined the mean, median, quartiles, deciles, percentiles, and mode of the data in univariate analysis. This study received approval from the Magelang Army Hospital's ethical committee under registration number 218/EC/II/2023.

RESULTS

Gender statistics reveal that 121 people participated in the study at the Gatak Health Centre and Bagas Waras Klaten Hospital in Table 1, with 39 men (32.2%) and 89 women (67.8%) being the breakdown. The three groups' female osteoarthritis patients had the highest percentage results (82.0%). The lowest proportion was 26.8% in men with diabetes mellitus. It has a rate of 48.8% in hypertensive female patients and 51.2%.

According to the description of education statistics in Table 2, hypertension patients with primary-junior high school education had the most significant percentage of the three worst groups at 58.5%. In patients with high school hypertension, the lowest rate was 41.5%. Diabetes mellitus patients with primary-junior education comprised 46.3% of the population, while those with secondary-high education comprised 53.7%. Among osteoarthritis patients, 53.8% of students are in elementary schooling through junior high. Additionally, 46.1% of secondary-high school students are osteoarthritis patients.

According to the description of statistics stress in Table 3, osteoarthritis patients had the most significant percentage of stress levels of the three worst groups at 94.8%. Patients with diabetes mellitus had 90.3% moderate to high stress levels, and those with hypertension had 92.7% moderate to high. The hypothesis test yielded a significant value of 0.907 $p>0.005$, supporting the statement, "There are differences in the profile of well-being status based on osteoarthritis, type II diabetes mellitus, and hypertension groups." Rejected. The second hypothesis' results showed a significant value of 0.623 $p>0.005$, supporting the statement, "There are differences in the profile of well-being status in terms of gender." Rejected. The hypothesis that "There is an interaction between gender and the well-being profile of the group (osteoarthritis, type II diabetes mellitus, and hypertension)" was rejected when the third hypothesis was rejected because it found a significant value of 0.904 $p>0.005$, as shown in Table 4.

The first domain has a significant value of 0.758 $p>0.005$, which indicates no difference in the well-being status between type II diabetes mellitus and hypertension, according to the findings of the data distribution test in Table 5. There is no difference between type II diabetes mellitus and osteoarthritis regarding well-being status in the second domain, with a significant value of 0.929 $p>0.005$. It has a substantial deal of 0.940 $p>0.005$ in the third domain, indicating no difference in the well-being status between osteoarthritis and hypertension.

DISCUSSION

According to the study, out of 121 respondents, 40% had osteoarthritis, type II diabetes, and hypertension with an excellent quality of life. The researcher's

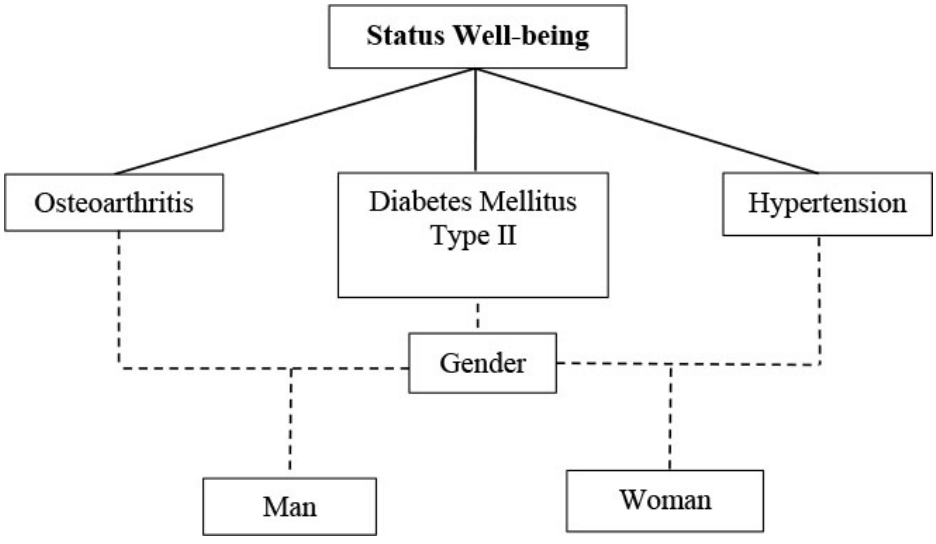

Figure 1. Research design.

conclusions are consistent with those of earlier studies, showing that people with hypertension at the Pundong Health Centre had varying quality of life in various areas.[16] Based on these results, people with hypertension at the Pundong Health Centre have a good quality of life in these four areas. The study's results revealed a statistically significant association between patients with osteoarthritis' health condition and quality of life; the resulting *p*-value was 0.001 ($p<0.005$), indicating that this relationship was highly significant.[17]

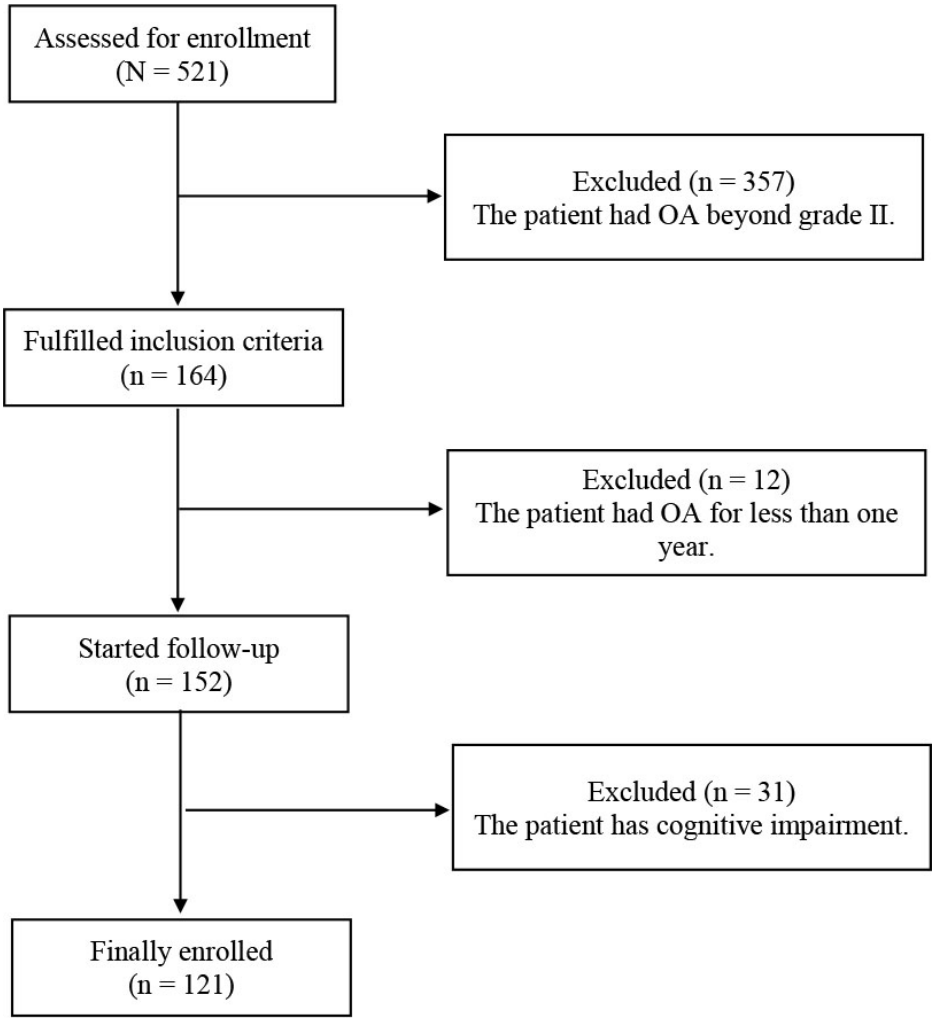

Figure 2. Study flowchart.

Table 1. Descriptive statistics of patients based on gender

Group	Gender	Mean age±SD	N
DM	Man	58.9±10.6	11
	Woman	60.5±6.6	30
	Total	60.1±7.7	41
HT	Man	58.9±9.0	21
	Woman	59.1±5.0	20
	Total	59.0±7.2	41
OA	Man	59.1±4.7	7
	Woman	59.6±5.1	32
	Total	59.5±4.9	39
Total	Man	58.9±8.7	39
	Woman	59.7±5.6	82
	Total	59.5±6.7	121

DM, diabetes mellitus; HT, hypertensive; N, frequency; OA, osteoarthritis; SD, standard deviation.

Life quality and general well-being are similar and are correlated. An ideal quality of life, low-stress levels, emotions of contentment and satisfaction, and good bodily and mental health are all indicators of well-being.[18] The term "quality of life" refers to an individual's subjective assessment of their situation in life, which is impacted by the culture and societal norms prevalent in their environment as well as their own particular set of aspirations, standards, and priorities. Elderly patients' health and quality of life will be impacted by degenerative diseases such as hypertension, diabetes mellitus, coronary artery, and joint disease, increasing morbidity and mortality.[19]

The gender statistical distribution test results indicate whether or not there is no gender-specific profile of well-being status. Thus, this study's results align with those published by[20], who highlighted the significance of quality of life for groups of men and women with osteoarthritis. The score of 0.928 ($p>0.005$) shows no statistically significant difference in quality of life between the male and female groups. Similarly, no connection between gender and QoL focused on people with type 2 diabetes mellitus; however, the lack of this association was not statistically significant when compared to the significance threshold chosen, which was (0.005).[21] This study's *p*-value was 0.718. Everyone employs different ways to develop and grow their overall well-being because well-being substantially impacts an individual's quality of life.[22]

According to the findings, many elements were connected to well-being. Aspects such as personal goals, health status, income, religious views, marital status, age, gender disparities, morals, education, and IQ are also included in this list of variables. Personality traits like extroversion, self-esteem, and optimism are also included. People experience happiness and satisfaction through self-esteem, conscious self-control, extroversion, optimism, positive relationships, social interactions, and meaning or purpose.[23]

Age, gender, income, and life goals are some of the demographic aspects mentioned above that will also impact a person's well-being. Young people

frequently have high levels of energy and enthusiasm, whereas older people typically have a more upbeat attitude toward life. Additionally, women often report experiencing discomfort due to various role conflicts, particularly those who work and maintain household obligations. This results in a higher proportion of women than men.[24] They were going through this battle. Based on the findings of the group statistical distribution test for osteoarthritis, type II diabetes mellitus, and hypertension obtained a significant value of 0.904 (p>0.05), indicating that there was no gender interaction on the group's well-being profile (osteoarthritis, type II diabetes mellitus, and hypertension).[25]

This study concluded that women with hypertension made up 60.9% of the respondents to their study. It's crucial to remember, though, that gender is not the only factor that affects hypertension. Hypertension can develop due to some causes, such as lifestyle decisions, psychological problems, and an unfavorable environment. This study is inversely correlated with a study that found that women are more likely to develop osteoarthritis, with an incidence rate of 81.8%. This indicates a higher risk of women developing osteoarthritis, especially women entering menopause, which will reduce their quality of life.[26]

The results of this study show a relationship between gender and the quality of life of patients with diabetes mellitus type II at Puskesmas throughout Kupang City, in contrast to research that claims the results of the analysis of the sex factor are p-value = 0.000 (p<0.005).[27] Subjective well-being is influenced by gender, with women being found to have more negative consequences and depression than males. Women also prefer to seek more psychological help to increase their overall satisfaction.[28] Menopause-related psychological changes might result in various behaviors, including concern, melancholy, sensitivity to offense, and irritability.[29]

In this study, researchers experienced limitations. First, the study's flaws stem from respondents frequently misinterpreting each instrument indicator due to a lack of comprehension. Second, because this was a cross-sectional survey, we could not monitor control variables such as physical activity, nutritional status, and socioeconomic factors, and it wasn't easy to investigate the causal links between the variables. It is hoped that further research can develop this research through different methods and add control variables.

Table 2. Descriptive statistics Education

Group	Education	Mean age±SD	N
DM	Elementary school - Junior high school	58.7±8.5	19
	Senior High School - College	61.2±6.9	22
	Total	60.0±7.7	41
HT	Elementary school - Junior high school	58.2±7.1	24
	Senior High School - College	60.0±7.4	17
	Total	59.0±7.2	41
OA	Elementary school -Junior high school	59.3±5.6	21
	Senior High School - College	59.6±4.2	18
	Total	59.5±5.0	39
Total	Elementary school - Junior high school	58.7±7.0	64
	Senior High School - College	60.4±6.3	57
	Total	59.5±6.7	121

DM, diabetes mellitus; HT, hypertensive; N, frequency; OA, osteoarthritis; SD, standard deviation.

Table 3. Descriptive Statistics Stress

Group	Stress	Mean age± SD	N
DM	Mild	56.5±9.6	4
	Moderate - High	60.4±7.9	37
	Total	60.0±7.7	41
HT	Mild	56.3±6.0	3
	Moderate - High	59.2±7.3	38
	Total	59.0±7.2	41
OA	Mild	59.0±5.6	2
	Moderate - High	59.5±5.0	37
	Total	59.5±4.9	39
Total	Mild	57.0±7.0	9
	Moderate - High	59.7±6.7	112
	Total	59.5±6.7	121

DM, diabetes mellitus; HT, hypertensive; N, frequency; OA, osteoarthritis; SD, standard deviation.

Table 4. Primary data

Source	Type III Sum of Squares	Df	Mean Square	F score	*P*-value
Group	9.170	2	4.6	.098	.907
Gender	11.377	1	11.4	.242	.623
Group*Gender	9.517	2	4.7	.101	.904

Df, degree of freedom.

Table 5. Multiple comparisons

Group		Mean difference	*P*-value
DM	HT	1.0732	.758
	OA	.5616	.929
HT	DM	-1.0732	.758
	OA	-.5116	.940

DM, diabetes mellitus; HT, hypertensive; OA, osteoarthritis.

CONCLUSION

Based on the study's results, it can be concluded that there was no difference in well-being status in the osteoarthritis, type II diabetes mellitus, and hypertension groups. There was no relationship between gender and quality of life. There were no differences in well-being interactions based on gender in the osteoarthritis, type

II diabetes mellitus, and hypertension groups.

ETHICAL CLEARANCE

This study received approval from the Magelang Army Hospital's ethical committee under registration number 218/EC/II/2023. Informed agreement from the respondents to the survey was also provided, which approved the use of sampling.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

FUNDING

No organization has provided funding for or sponsorship of this study.

AUTHOR CONTRIBUTIONS

SAW developed the study's methodology, gathered the data, and wrote the article. He also conducted a literature search, edited the draft, and reviewed the final version of the paper. FR used SPSS to process the data.

REFERENCES

1. Eko S, Sinaga N. Antara jenis kelamin dan sikap dalam gaya hidup sehat mahasiswa. Media Informasi. 2018; 14(1): 69–72.
2. Rizki Ashari M, Vidyanto F. Analisis kerugian ekonomi (economic loss) penderita penyakit hipertensi dengan penyakit penyerta peserta BPJS di Unit Rawat Inap Rumah Sakit Budi Agung Kota Palu Kontak. Journal of Health, Education and Literacy (J-Healt). 2022; 5(1): 40–48.
3. Syahirul Nugraha A, Widyatmoko S, Wahyu Jatmiko S. Hubungan obesitas dengan terjadinya osteoartritis lutut pada lansia Kecamatan Laweyan Surakarta. Biomedika. 2015; 7(1): 15–18.
4. Maspupah T, Nina N, Siagian TD, Pakhpahan J, Octavianie G. Perilaku pencegahan dan risiko kejadian diabetes melitus tipe 2 pada usia produktif di Kabupaten Bogor Tahun 2021. Journal of Public Health Education. 2022; 2(1): 242–253.
5. Andayani NLN, Guna IWAW. Factors that affect the quality of life in menopausal women. Physical Therapy Journal of Indonesia. 2023; 4(1): 70–75.
6. Falah M. Hubungan jenis kelamin dengan angka kejadian hipertensi pada masyarakat di Kelurahan Tamansari Kota Tasikmalaya. Jurnal Keperawatan & Kebidanan STIKes Mitra Kencana Tasikmalaya. 2019; 3(1): 85–94.
7. Widjaja CH. Manfaat jintan hitam (nigella sativa) sebagai antiinflamasi dan pereda nyeri pada osteoartritis (OA). Jurnal Ilmiah Kesehatan Sandi Husada. 2020; 12(2): 901–907.
8. Tigauw JH, Kapantow NH, Sondakh RC. Hubungan antara jenis kelamin dengan kadar adiponektin pada penderita diabetes melitus tipe 2 di Kota Manado. Fkm Unsrat. 2014; 1: 1–7.
9. Yuliasari H, Wahyuningsih H, Sulistyarini RI. Efektifitas pelatihan koping religius untuk meningkatkan kesejahteraan psikologis pada penderita diabetes mellitus tipe 2. Journal of Psychological Science and Profesion (JPSP). 2018; 2(1): 73–82.
10. Syah J, Alba AD, Wirakesuma MT, Adha K, Atika L. Hubungan obesitas dengan kejadian osteoarthritis lutut pada lansia di wilayah kerja Puskesmas Batu Aji Kota Batam 2020. Jurnal JRIK. 2021; 1(2): 78–86.
11. Rahmi H, Malini H, Huriani E. Peran dukungan keluarga dalam menurunkan diabetes distress pada pasien diabetes mellitus tipe II. Jurnal Kesehatan Andalas. 2019; 8(4): 127–133.
12. Wahyuningsih AS. Membudayakan jalan kaki di kampus konservasi. Jurnal Media Ilmu Keolahragaan Indonesia. 2015; 5(2): 51–56.
13. Supriyatno H, Vellyana D, Stiawan D. Pengaruh aktivitas fisik jalan kaki terhadap gula darah sewaktu penderita diabetes melitus tipe 2 di wilayah kerja Puskesmas Kota Dalam Pesawaran. Healthcare Nursing Journal. 2022; 4(1): 194–205.
14. Haida N, Putri K, Isfandiari MA. Hubungan empat pilar pengendalian DM tipe 2 dengan rerata kadar gula darah A. J Berk Epidemiol. 2013; 1(2): 234–243.
15. Marlina T. Efektivitas latihan lutut terhadap penurunan intensitas nyeri pasien osteoarthritis lutut di Yogyakarta. J Keperawatan Sriwij. 2015; 2: 44–56.
16. Wijayanti ME, Marlina TT. Kualitas hidup penderita hipertensi di Puskesmas Pundong Kecamatan Pundong, Kabupaten Bantul, Yogyakarta. MKKI (Majalah Ilmu Keperawatan dan Kesehatan Indonesia). 2018; 7(2): 124–132.
17. Knelissen AN, Yani H, Samin B, Rajagukguk H, Lubis ES. Kualitas hidup pasien osteoarthritis di Rumah Sakit Royal Prima. Buletin Kedokteran dan Kesehatan Prima. 2023; 2(1): 1–4.
18. Lestari AR, Nurhayati SR. Hubungan kualitas hidup dan psychological well-being pada anggota keluarga yang menjadi caregiver pasien kanker di Kota Bandung. Acta Psychologia. 2020; 2(1): 72–79.
19. Harahap J, Andayani LS. Pola penyakit degeneratif, tingkat kepuasan kesehatan dan kualitas hidup pada lansia (lanjut usia) di Kota Medan. Talenta Conference Series: Tropical Medicine (TM). 2018; 1(1): 142–149.
20. Ismail A, Sari IP, Pramantara IDP. Evaluasi kualitas hidup penderita osteoartritis di instalasi rawat jalan rumah sakit periode februari-mei 2013. Jurnal Manajemen dan Pelayanan Farmasi. 2013; 3(4): 223–230.
21. Sormin MH, Tenrilemba F. Analisis faktor yang berhubungan dengan kualitas hidup pasien diabetes melitus tipe 2 di UPTD Puskesmas Tunggakjati Kecamatan Karawang Barat tahun 2019. Jurnal Kesehatan Masyarakat (JUKMAS). 2019; 3(2): 120–146.
22. Dewi L, Nasywa N. Faktor-faktor yang mempengaruhi subjective well-being. Jurnal Psikologi Terapan dan Pendidikan. 2019; 1(1): 54–62.
23. Hukom GP, Desi, Agustina V. Subjective well being pada penderita diabetes melitus (DM) tipe ii di Srikandi Wound Care, Kabupaten Semarang. Jurnal Keperawatan Muhammadiyah. 2021; 6(3): 19–27.
24. Rulanggi R, Fahera J, Novira DN. Faktor-faktor yang memengaruhi subjective well-being pada mahasiswa. Jurnal Psikologi Terapan dan Pendidikan. 2019; 1(1): 54–62.
25. Laili N, Purnamasari V. Hubungan modifikasi gaya hidup dengan kualitas hidup pasien hipertensi di UPTD Pkm Adan Adan Gurah Kediri. J Iklkes (Jurnal Ilmu Kesehatan). 2019; 10(1): 66–76.
26. Tarigan G, Rante S, Pakan PD. Hubungan intensitas nyeri dengan kualitas hidup pasien osteoartritis lutut di RSUD Prof. Dr. W. Z. Johannes Kupang 2018. Cendana Medical Journal (CMJ). 2019; 7(2): 267–272.
27. Teli M. Kualitas hidup pasien diabetes melitus tipe 2 di Puskesmas se Kota Kupang. 2017; 15(1): 119–134.
28. Putra I, Sukmawati N. Perbedaan subjective well-being ditinjau dari jenis kelamin dan status pernikahan pada pegawai negeri sipil. Character J Penelit Psikol. 2020; 7(1): 1–5.
29. Cory FAN, Wahyuni IGAPS. Hubungan sindrom menopause dengan tingkat kecemasan ibu menopause di wilayah kerja Puskesmas Ubung Kabupaten Lombok Tengah tahun 2018. JKAKJ. 2018; 3(1): 9–16.