

ORIGINAL ARTICLE

Life Satisfaction and Perceived Health Among Elderly Activity Centre (PAWE) Participants in Perak

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ABSTRACT

Introduction: Life satisfaction is the expression of the individual's positive attitude toward their life and reflects the individual's feelings about their past, present, and future while perceived health is perception of health based on physical and mental ability. This research project aims to identify the life satisfaction and perceived health among Elderly Activity Centre (PAWE) participants in Perak. **Materials and methods:** This study employed a cross-sectional design and utilized self-report questionnaires, incorporating the Malay versions of the Satisfaction With Life Scale (SWLS) and the 12-item Short-Form Health Survey (SF-12). A total of 72 participants from 4 PAWE in Perak participated in the survey, ranging from 56 to 78 years old. Descriptive statistics was used to analyse the level of life satisfaction while Spearman's rank correlation coefficient was used to examine the association between both variables. **Results:** Overall, this study found that most respondents were satisfied with their life satisfaction, 44.4% (n=32). However, this study result showed a weak positive correlation between both physical component summary (PCS) score in SF-12 and life satisfaction ($r=0.303$, $p < 0.01$), and between MCS score in SF-12 and life satisfaction ($r=0.291$, $p < 0.01$). **Conclusion:** These results demonstrate a need for future research to consider a longitudinal study to observe how participation in PAWE, affects their life satisfaction and perceived health.

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INTRODUCTION

The proportion of Malaysians over the age of 65 is expected to increase to 7.9 percent in 2022, up from 7.4 percent the previous year. Malaysia is facing the prospect of an aging population, which the most recent statistical data predicts could occur as early as 2030 (1). The senior citizen population will undoubtedly increase in tandem with the population's aging. The most frequently reported retirement maturity level among senior citizens will begin after age 55 (2). This situation has arisen as a result of advances in science and technology, which have resulted in higher health standards. Therefore, with growing awareness of this rising standard, it is critical to evaluate senior citizens' life satisfaction and perceived health.

Perak is Malaysia's third oldest state after Johor and Selangor and has the highest percentage of senior citizens, accounting for 10.7% of the total senior citizen population. Perak is divided into 12 districts: Kerian, Larut Matang and Selama, Hulu Perak, Batang Padang, Kinta, Central Perak, Lower Perak, Manjung, Kampar,

Kuala Kangsar, Muallim, and Bagan Datuk (3).

As people's health deteriorates with age, it's necessary to identify factors that can mitigate the impact of declining health on senior citizens' life satisfaction and perceived health. The increase in the number of senior citizens poses a challenge to geriatric care, financial resources, and facilities. To address these challenges, the government established the Pusat Aktiviti Warga Emas (PAWE), or Elderly Activity Centre, in 2001 as a means of supporting the well-being of senior citizens (4). Rather than operating as a daily care facility, PAWE encourages senior citizens to engage in active, purposeful activities. The supportive social environment at PAWE is anticipated to foster social support among senior citizens, which in turn is expected to positively influence their life satisfaction and perceived health (5). While previous research has explored various aspects of aging, studies focusing on the role of social support in enhancing life satisfaction and perceived health among senior citizens remain limited. Specifically, there is a lack of research that examines how participation in structured social activities, such as those provided at PAWE, influences these outcomes. A recent study found that general perceived health significantly correlates with age ($r = -0.23$) and life satisfaction ($r = 0.22$) (6). While this study highlights the relationship between perceived health and life satisfaction, it does not explore

the specific mechanisms through which social support from structured community engagement might influence these domains. Addressing this gap is essential, as social support has been shown to play a vital role in promoting psychological well-being, reducing feelings of isolation, and enhancing perceptions of health among the elderly. This study was conducted at PAWE in Perak to address this research gap and to build on the existing evidence. PAWE provides a community-centered approach to promoting successful aging by facilitating activities that aim to optimize mental and physical functions, prevent disease risks, and foster meaningful social interactions. These components align with key elements of high life satisfaction and good perceived health. By examining the associations between social support, life satisfaction, and perceived health among senior citizens at PAWE, this study aims to generate evidence that can inform future initiatives to improve the quality of life of senior citizens during their retirement phase. The findings from this study have the potential to contribute to the development of targeted interventions aimed at promoting successful aging within community settings.

MATERIALS AND METHODS

This study employed a cross-sectional design to describe the life satisfaction of participants in the Perak community, as well as how senior citizens perceived their health. By using a purposive sampling method, self-report questionnaires were distributed to the participants in the settings. To reduce potential bias in self-reporting, participants were assured of the confidentiality and anonymity of their responses to encourage honest and accurate reporting. Ethical considerations for participant consent include ensuring that all participants are fully informed about the purpose, procedures, potential risks, and benefits of the study.

The inclusion criteria included (i) Registered as PAWE Kuala Kangsar, Manong, Tanjung Malim, and Kampung Gajah, Perak members, (ii) Aged 56 years or above, (iii) Participants can communicate in either Malay or English, and (iv) Score 26 and above in Montreal Cognitive Assessment – Bahasa Malaysia version (MoCA-BM). PAWE is a development program within the *Dasar Warga Emas Negara* (DWEN) program that allows senior citizens to participate actively in daily activities such as vocational education, volunteering activities, indoor or outdoor activities, and medical services which is aimed at reaching out and developing the senior citizens. Operation hours are every working day, and the activity schedule varies depending on the location. Examples of the activities carried out are religious talks, rehabilitation therapy, yoga, and economic empowerment programs. PAWE in Perak has more than 2687 total registered members.

Although the initial target was to recruit a larger sample size, logistical constraints, such as the limited

number of active PAWE centres and the availability of eligible participants, resulted in a final sample size of 72 respondents. While this sample size is smaller than initially anticipated, it is representative of the elderly population actively participating in PAWE activities in the selected districts of Perak. Future studies should aim for a larger and more diverse sample to enhance the generalizability of the findings.

Instruments

This study utilized 3 instruments which are The Montreal Cognitive Assessment – Bahasa Malaysia version (MoCA-BM) as the screening tool, The Malay Version of the Satisfaction with Life Scale (SWLS) and The Malay Version of 12-item short-form health survey (SF-12). The MoCA Malay version is used to screen for mild cognitive impairment and dementia. There are eight main cognitive domains: attention and concentration, executive function, memory, language, visuoconstructional skills, conceptual thinking, calculations, and orientation. The overall score is 30 and score >26 is normal.

The Malay version of the Satisfaction with Life Scale (SWLS) is a 5-item questionnaire designed to assess global cognitive judgments of overall life satisfaction in adults aged 18 and above, across diverse backgrounds. The scale is concise, typically requiring only about a minute to complete, and uses a 7-point Likert scale. The total raw score, ranging from 5 to 35, reflects the respondent's level of life satisfaction, with higher scores indicating greater satisfaction. The results are categorized into six levels of life satisfaction: (1) Extremely Dissatisfied (5-9), (2) Dissatisfied (10-14), (3) Slightly Dissatisfied (15-19), (4) Slightly Satisfied (20-24), (5) Satisfied (25-29), and (6) Extremely Satisfied (30-35). Validation studies have consistently shown that the SWLS has a unidimensional structure, high internal consistency, and reliable psychometric properties, making it a suitable tool for assessing life satisfaction.

The Malay version of the SF-12 is a shortened, updated form of the SF-36, comprising 12 self-reported items designed to assess perceived health in the general population aged 18 to 65. It evaluates eight health domains, with one or two items per domain: physical functioning (PF), role-physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role-emotional (RE), and mental health (MH). Each domain contributes to the Physical Component Summary (PCS – PF, RP, BP, GH) and the Mental Component Summary (MCS – VT, SF, RE, MH) scores. The SF-12 Score Calculator is used to generate these scores, which are interpreted into three categories: below average (<50) indicating poor physical or mental health, average (50), and above average (>50) indicating better physical or mental health than the mean.

Data analysis

The outcomes were analysed using SPSS Statistics version

28.0. Normality testing was conducted to determine which statistical tests (parametric or nonparametric) were appropriate for the study. Since the data was not normally distributed, non-parametric tests were used. Descriptive analysis was used to determine the level of life satisfaction among senior citizens. Spearman's rank-order correlation was conducted to determine the association between perceived health (physical and mental health) with life satisfaction among senior citizens. This study also utilized the Kruskal-Wallis Test and Spearman's rank-order correlation to determine the relationship between demographic profiles and life satisfaction among senior citizens.

Ethical Clearance

Ethics approval was obtained from the Ethical Committee of the Universiti Teknologi MARA (FERC/FSK/MR/2023/00314).

RESULTS

A total of 72 respondents submitted completed questionnaires. Demographic characteristics of the participants are presented in Table I. Most respondents were female (95.8.0%, n=69), with a mean age of 65 years. The majority of the respondents were married (54.2%, n=39), followed by divorced (37.5%, n=27), and single (8.3%, n=6). Most participants live in small households of one to two people (55.6%, n=40), living with spouse (51.4%, n=37). In term of qualification, most participants (75%, n=54) are with secondary school qualification level and 16.7% (n=12) are with primary school qualification, the rest 8.3% (n=6) are with tertiary qualification. 91.7% (n=66) declared themselves as in B40 group, 5.6%(n=4) are in M40 and the rest 2.8% (n=2) in T20 group. Most participants (79.2%, n=57) have been a member for PAWE for more than six months. The overall health status as reported by most participants is good (63.9%, n=46), with no participants reporting poor health.

Table I: Demographic characteristics of the respondents (n=72)

Variable	Frequency (n=72)	Percentage (%)
Gender		
Male	3	4.2
Female	69	95.8
Marital status		
Single	6	8.3
Married	39	54.2
Divorced	27	37.5
Living status		
Living with Spouse	37	51.4
Others	35	48.6
Household members		
1-2 people	40	55.6
3-4 people	23	31.9
5-6 people	4	5.6
>6 people	5	6.9

CONTINUE

Table I: Demographic characteristics of the respondents (n=72). (CONT.)

Variable	Frequency (n=72)	Percentage (%)
Education level		
Primary	12	16.7
Secondary	54	75.0
Tertiary (Degree, Master, Ph.D.)	6	8.3
Income level		
B40 (<RM4,850)	66	91.7
M40(RM4,851- RM10,970)	4	5.6
T20 (>RM10,970)	2	2.8
Period of membership		
<1 month	3	4.2
1-6 months	12	16.7
>6 months	57	79.2
Overall health status		
Fair	23	31.9
Good	46	63.9
Excellent	3	4.2
	Mean	Standard deviation
Age	65	6

The Level of Life Satisfaction among PAWE Participants. The majority of participants were satisfied with their life (44.4%, n=32), 4.2% (n=3) of the participants were slightly dissatisfied, 12.5% (n=9) were slightly satisfied and 38.9% (n=28) were extremely satisfied with their level of life satisfaction as in the histogram shown in Figure 1. The histogram shows an asymmetrical distribution indicating a negatively skewed distribution.



Figure 1: The Level of Life satisfaction among PAWE Participants

The Association between Perceived Health with Life Satisfaction among PAWE Participants

Spearman's rank-order correlation was used to assess the association between perceived health (PCS and MCS scores) and life satisfaction. The result revealed a weak but positive correlation both between PCS score and life satisfaction (r=0.303, p < 0.01), and between MCS score and life satisfaction (r=0.291, p < 0.01). This suggests there are significant correlations and higher PCS and MCS scores (above average) are associated with higher levels of life satisfaction as in Table II.

Table II: The association between perceived health (physical and mental health) with life satisfaction

Variable	Life satisfaction	
	Spearman's rank coefficient (r)	P-value*
Perceived health (PCS score)	0.303	0.010
Perceived health (MCS score)	0.291	0.013

*Correlation is statistically significant if P-value is below than 0.01 (p<0.01)

The Relationship between Demographic Profiles and Life Satisfaction among Participants

Kruskal Wallis Test was used to evaluate the relationship between demographic profiles and life satisfaction among participants as in Table III. The results indicated significant differences in life satisfaction based on the period of membership ($\chi^2 = 7.928, p = 0.019$). However, no significant difference was found for gender ($\chi^2 = 0.196, p = 0.658$), marital status ($\chi^2 = 2.257, p = 0.324$), living status ($\chi^2 = 1.989, p = 0.158$), household members ($\chi^2 = 3.866, p = 0.276$), education level ($\chi^2 = 4.279, p = 0.118$), income level ($\chi^2 = 0.860, p = 0.651$), period of membership ($\chi^2 = 7.928, p = 0.019$), and overall health status ($\chi^2 = 4.225, p = 0.121$). This suggests that the life satisfaction scores vary significantly with period of membership between <1 month, 1-6 months and >6 months.

Spearman's rank-order correlation was used to assess the relationship between age and life satisfaction among participants. The result revealed a very weak positive correlation between age and life satisfaction ($r=0.083, p=0.489$) which suggests no significant correlations exist.

Table III: The relationship between demographic profiles with life satisfaction

Demographic variable	X	(df)*	Spearman's rank coefficient (r)**	P-value***
Age	-	-	0.083	0.489
Gender	0.196(1)	-	-	0.658
Marital Status	2.257(2)	-	-	0.324
Living Status	1.989(1)	-	-	0.158
Household Members	3.866(3)	-	-	0.276
Education Level	4.279(2)	-	-	0.118
Income Level	0.860(2)	-	-	0.651
Period of Membership	7.928(2)	-	-	0.019
Overall Health Status	4.225(2)	-	-	0.121

*Kruskal-Wallis Test

**Spearman's Rank-Order Correlation

***Correlation is statistically significant if P-value is below than 0.01 (p<0.01)

DISCUSSION

This study found that most respondents were satisfied with their life satisfaction. This result might implied that senior citizen are satisfied with their life satisfaction when they are more active in their communities. Previous study found that senior citizens are satisfied with life satisfaction as they age and engage in physical

activity (7). PAWE also provides physical activity in their tentative, which might contributed to the respondent's life satisfaction. A person's satisfaction or dissatisfaction with life influences will determine the participant's acts, multiple behaviors, and activities (8).

A study focused on six dimensions of healthy aging—healthcare, health education, living environment, road traffic, social participation/equity, and economic finance found that 9266 out of 13168 participants were satisfied with their life satisfaction, with 52.5% of participants in the healthcare dimension being the majority who were satisfied with their lives. It also highlighted that healthcare spending, such as medical insurance, can significantly improve the health and quality of life for elderly people (9). Another study identified several factors influencing senior citizens' life satisfaction, including current occupation, overall health status, chronic disease, perceived health, financial source, daily living activity, sense of coherence, and social support (10). However, the study provided insufficient evidence to cover the entire senior citizen population in Perak. This conclusion aligns with other findings that suggest the need for advanced longitudinal research for a better understanding of directionality (11).

Perceived Health (Physical and Mental Health) and its Association with Life Satisfaction

Life satisfaction among the elderly is not solely determined by their objective pathological states, with a positive perceived health being strongly associated with the highest life satisfaction (12). Perceived health plays a crucial role in promoting a positive self-perception of aging, which benefits both physical and mental well-being (11). Additionally, the findings indicate that perceived health (Beta = .196, t = 7.9, p < .001) is a significant determinant of life satisfaction, as higher perceived health correlates with fewer chronic illnesses (11). Additionally, a positive relationship between elderly health perception and life satisfaction was identified, with those having strong social support networks, positive outlooks, and access to senior privileges reporting the highest levels of life satisfaction (13).

However, the weak correlations observed in this study ($r=0.303$ for physical health and $r=0.291$ for mental health) suggest that perceived health may not be the sole determinant of life satisfaction among PAWE participants. This finding contrasts with some previous studies that have reported stronger associations between perceived health and life satisfaction. For instance, Puvill et al. (2016) found that mental health had a stronger impact on life satisfaction than physical health, suggesting that physical deterioration does not necessarily lead to a decline in life satisfaction if mental health is maintained (14). The weaker correlations in our study may be due to the fact that PAWE participants are actively engaged in community activities, which may provide additional

social and emotional support that buffers the impact of health issues on life satisfaction.

The Relationship between Demographic Profiles and Life Satisfaction

This study did not find statistically significant relationships between demographic variable such as age, gender, marital status, living status, household members, education level, and income level and life satisfaction among the PAWE participants in Perak. Despite these findings, the results align with some existing literature, offering nuanced insights into the complexity of these relationships.

While the current study found no significant correlation between age and life satisfaction, this result is consistent with (11), who also observed no direct impact of age on life satisfaction. Age significantly influences life satisfaction in the elderly, primarily through enhanced knowledge of aging, health, and lifestyle choices (7). This suggests that age alone may not be a sufficient predictor of life satisfaction but can play a role in specific contexts, particularly among older adults.

The absence of a significant gender difference in life satisfaction in this study could be influenced by the gender distribution within the sample, where females were more represented than males. This unintentional bias warrants careful interpretation of the findings. Previous study support the notion that gender differences in life satisfaction may vary due to factors like multimorbidity patterns, physical activity levels, and chronic conditions (16). Additionally, argue that while gender has a small but significant impact on life satisfaction, most individuals have adapted to gender disparities by the time they are surveyed (17).

In this current study, there is no significant relationship was found between marital status and life satisfaction. This aligns with previous study which reported no significant differences in life satisfaction across different marital statuses (18). Previous study identified a moderating effect of marital status on life satisfaction, with married individuals experiencing higher satisfaction levels compared to their unmarried counterparts (19). This suggests that transitions in marital status, such as divorce or widowhood, may impact life satisfaction differently across genders due to varying social, emotional, and economic backgrounds.

The current study found no significant association between living status and life satisfaction. Similarly, a previous study reported a lack of direct correlation, highlighting that factors such as meaning in life and social support may mediate this relationship (20). The findings suggest that social participation and household composition might influence life satisfaction, but these effects may be more pronounced in certain subgroups, such as those with a spouse or those actively engaging

in social activities.

The results showed no significant relationship between the number of household members and life satisfaction. Family dynamics and support systems often outweigh the influence of sociodemographic factors (20). Strong family relationships are crucial for the social, emotional, and financial well-being of senior citizens, contributing significantly to their life satisfaction (21).

The current study shows that no significant relationship was found between education level and life satisfaction, contrasting with earlier findings which observed that higher education levels are associated with healthier behaviors and improved life satisfaction (22). In contrast, Higher education proven to fosters social connections and support systems that will enhance life satisfaction (23).

The study did not find a significant relationship between income level and life satisfaction, possibly due to the minimal changes in income reported by participants. Previous study shows that higher income levels positively impact life satisfaction, especially in contexts where the cost of living and healthcare expenses are significant factors (24). These findings indicate that while income may influence life satisfaction, its effects may be context-dependent.

Interestingly, the period of membership in community-based activities was the only variable with a statistically significant relationship with life satisfaction. This finding aligns with a study which identified community engagement as a key predictor of life satisfaction (15). Regular participation in community activities appears to enhance social networks and overall life satisfaction, underscoring the importance of active aging and community involvement in maintaining well-being among senior citizens (15).

The lack of a significant relationship between overall health status and life satisfaction contradicts earlier studies that found health to be a crucial determinant of life satisfaction. This discrepancy could be due to differences in the study populations, as our sample consisted of elderly individuals actively participating in community activities, which may have provided additional social and emotional support that buffered the impact of health issues on life satisfaction. While physical and mental health are important, factors such as social support and overall well-being play critical roles in shaping life satisfaction (25). The current findings suggest that health status alone may not fully capture the complexity of life satisfaction, highlighting the need for further research on the interplay between health, social support, and psychological resources.

To improve services at PAWE centers, the findings suggest that increasing opportunities for community-

based activities could play a key role in enhancing life satisfaction among elderly participants. By fostering greater social participation and engagement in physical activities, PAWE centers can help improve the overall well-being of senior citizens.

Implications and Limitation

One of the strengths of this study is its focus on a specific population of elderly individuals participating in PAWE activities, which provides insights into the role of community engagement in promoting life satisfaction and perceived health. Additionally, the use of validated instruments, such as the Malay versions of the Satisfaction With Life Scale (SWLS) and the SF-12, enhances the reliability of the findings.

However, this study has several limitations. Firstly, the sample size did not meet the minimum requirement, limiting its representativeness of the general population in Perak. Secondly, the study employed a cross-sectional correlational design, which precludes any definitive conclusions about causality, highlighting the need for longitudinal research to better understand the directionality of these relationships. Additionally, the study was constrained by the limited number of PAWE locations in Perak, some of which are no longer operational, making comparisons with other regions in the state challenging. Future research should explore other areas, including both rural and urban regions of Perak, as significant differences may exist among senior citizens in different environments. Furthermore, subjective biases, as well as social and cultural stigma, may influence the outcome variables used to assess participants' overall health status, life satisfaction, and perceived health, potentially leading to skewed or non-significant correlations.

CONCLUSION

This study found that the majority of PAWE participants in Perak reported high levels of life satisfaction, with a significant but weak positive correlation between perceived health (both physical and mental) and life satisfaction. The findings suggest that participation in community-based activities, such as those offered by PAWE, may play a crucial role in enhancing life satisfaction among the elderly. However, the weak correlations between perceived health and life satisfaction indicate that other factors, such as social support and community engagement, may also be important contributors to life satisfaction.

To address these findings, future interventions should focus on promoting both physical and mental health among elderly individuals while also enhancing opportunities for social participation and community engagement. For example, PAWE centres could introduce more diverse activities, such as group exercises, mental health workshops, and social events,

to further improve the well-being of their participants. Additionally, occupational therapy programs could be developed to help elderly individuals achieve a better balance between physical activity, social interaction, and mental health, thereby enhancing their overall life satisfaction.

Future research should explore the impact of specific community-based interventions on life satisfaction and perceived health among the elderly, with a focus on longitudinal studies to better understand the directionality of these relationships. Furthermore, studies should investigate how factors such as social support, mental health, and cultural contexts influence life satisfaction across diverse groups of elderly individuals, particularly in different regions of Perak.

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REFERENCES

1. Statista Research Department. (2022, December 15). Malaysia: Aging population in Malaysia Retrieved from <https://www.statista.com/statistics/malaysia/aging-population>
2. Latimer A, Pope ND, Lin CY, Kang J, Sasdi O, Wu JR, Moser DK, Lennie T. Adapting the serious illness conversation guide for unhoused older adults: a rapid qualitative study. *BMC Palliative Care*. 2024 Jun 17;23(1):153. doi: <https://doi.org/10.21203/rs.3.rs-4165369/v1>
3. Department of Statistics Malaysia Official Portal. (2022, July 29). Retrieved from <https://www.dosm.gov.my/>
4. Ibrahim N, Saad ZM, Ramly FZ. Keberkesanan Pusat Aktiviti Warga Emas (PAWE) di bawah Dasar Warga Emas Negara. *Jurnal Pembangunan Sosial*. 2016 Sep 29;19:87-100.
5. Zainuddin FH, Hamidi M, Abd Wahab H. The Challenges Of Social Support Towards Successful Ageing Among Elderly In Pusat Aktiviti Warga Emas Malaysia. *The Malaysian Journal of Social Administration*. 2022 Dec 7;16:43-63.
6. Farriol-Baroni V, González-García L, Luque-García A, Postigo-Zegarra S, Pérez-Ruiz S. Influence of social support and subjective well-being on the perceived overall health of the elderly. *International journal of environmental research and public health*. 2021 May 19;18(10):5438. doi: <https://doi.org/10.3390/ijerph18105438>
7. Cho D, Cheon W. Older adults' advance aging and life satisfaction levels: effects of lifestyles and health capabilities. *Behavioral Sciences*. 2023 Mar 29;13(4):293. doi: <https://doi.org/10.3390/>

bs13040293

8. Abolhasani F, Bastani F. Successful ageing in the dimensions of life satisfaction and perception of ageing in the Iranian elderly adults referring to the health center in the west of Tehran, Iran. *Iran Journal of Nursing*. 2019 Feb;31(116):61-74. doi: <http://dx.doi.org/10.29252/ijn.31.116.61>
9. Tian H, Chen J. Study on life satisfaction of the elderly based on healthy aging. *Journal of healthcare engineering*. 2022;2022(1):8343452. doi: <https://doi.org/10.1155/2022/8343452>
10. Mekonnen HS, Lindgren H, Geda B, Azale T, Erlandsson K. Satisfaction with life and associated factors among elderly people living in two cities in northwest Ethiopia: a community-based cross-sectional study. *BMJ open*. 2022 Sep 1;12(9):e061931. doi: <https://doi.org/10.1136/bmjopen-2022-061931>
11. Pan Y, Chan SH, Xu Y, Yeung KC. Determinants of life satisfaction and self-perception of ageing among elderly people in China: An exploratory study in comparison between physical and social functioning. *Archives of Gerontology and Geriatrics*. 2019 Sep 1;84:103910. doi: <https://doi.org/10.1016/j.archger.2019.103910>
12. Hambisa MT, Dolja-Gore X, Byles JE. A longitudinal analysis of factors associated with age-related cataract among older Australian women: A cohort study of 7851 older Australian women 79–90 years. *Irish Journal of Medical Science (1971-)*. 2023 Jun;192(3):1525-36. doi: <https://doi.org/10.1007/s11845-022-03130-7>
13. Liu J, Wei W, Peng Q, Xue C. Perceived health and life satisfaction of elderly people: Testing the moderating effects of social support, attitudes toward aging, and senior privilege. *Journal of Geriatric Psychiatry and Neurology*. 2020 May;33(3):144-54. doi: <https://doi.org/10.1177/0891988719866926>
14. Puvill T, Lindenberg J, De Craen AJ, Slaets JP, Westendorp RG. Impact of physical and mental health on life satisfaction in old age: a population based observational study. *BMC geriatrics*. 2016 Dec;16:1-9. doi: <https://doi.org/10.1186/s12877-016-0365-4>
15. Machyn M, Vergara I, Dorronsoro M, Vrotsou K, Larracaga I. Self-perceived health in functionally independent older people: associated factors. *BMC geriatrics*. 2016 Dec;16:1-9. doi: <https://doi.org/10.1186/s12877-016-0239-9>
16. Kim J, Lee M, Dan H. Gender differences in factors affecting life satisfaction of the elderly with multimorbidity in Korea. *Nursing reports*. 2021 Feb 1;11(1):54-63. doi: <https://doi.org/10.3390/nursrep11010006>
17. Johansson A, Björklund A. The impact of occupational therapy and lifestyle interventions on older persons' health, well-being, and occupational adaptation: A mixed-design study. *Scandinavian Journal of Occupational Therapy*. 2016 May 3;23(3):207-19. doi: <https://doi.org/10.3109/11038128.2015.1093544>
18. Botha F, Booysen F. The relationship between marital status and life satisfaction among South African adults. *Acta Academica*. 2013 Jan 1;45(2):150-78.
19. Nagargoje VP, James KS, Muhammad T. Moderation of marital status and living arrangements in the relationship between social participation and life satisfaction among older Indian adults. *Scientific Reports*. 2022 Nov 29;12(1):20604. doi: <https://doi.org/10.1038/s41598-022-25202-5>
20. Lin Y, Xiao H, Lan X, Wen S, Bao S. Living arrangements and life satisfaction: mediation by social support and meaning in life. *BMC geriatrics*. 2020 Dec;20:1-8. doi: <https://doi.org/10.1186/s12877-020-01541-8>
21. Yunong H. Family relations and life satisfaction of older people: a comparative study between two different hukous in China. *Ageing & Society*. 2012 Jan;32(1):19-40. doi: <https://doi.org/10.1017/s0144686x11000067>
22. Muwisch D, Brose A, Schmiedek F. Do higher educated people feel better in everyday life? Insights from a day reconstruction method study. *Social Indicators Research*. 2021 Jan;153:227-50. doi: <https://doi.org/10.1007/s11205-020-02472-y>
23. Amaike B. Education as a correlate of life satisfaction among formal sector retirees in Lagos State, Nigeria. *African Population Studies*. 2014 Mar 24;27(2):434-45. doi: <https://doi.org/10.11564/27-2-487>
24. Cuong NV. Does money bring happiness? Evidence from an income shock for older people. *Finance Research Letters*. 2021 Mar 1;39:101605. doi: <https://doi.org/10.1016/j.frl.2020.101605>
25. Bramhankar M, Kundu S, Pandey M, Mishra NL, Adarsh A. An assessment of self-rated life satisfaction and its correlates with physical, mental and social health status among older adults in India. *Scientific Reports*. 2023 Jun 5;13(1):9117. doi: <https://doi.org/10.1038/s41598-023-36041-3>