Available Online at www.e-iph.co.uk
Indexed in Clarivate Analytics WoS, andScienceOPEN

E-B Environment - Behaviour Proceedings Journal

AcE-Bs2024Langkawi

https://www.amerabra.org

e-IPH e-International Publishing House Ltd., United Kingdom

12th ASIAN Conference on Environment-Behaviour Studies,
Holiday Villa Beach Resort & Spa, Langkawi Island, Malaysia, 01-03 Mar 2024

Issues in Performing Actual Ways of *Salah* (Islamic Prayer) among Physically Frail Elderly Muslim

Nurul Iryanie Nasieha Nisa[1], Akehsan Dahlan[2*], Nur Atiqah Azman[2], Ninik Nurhidayah[3]
** Corresponding Author*

[1] Unit Pemulihan Carakerja Hospital Raja Permaisuri Bainun Ipoh, Perak, Malaysia
[2] Centre for Occupational Therapy Studies, Faculty of Health Sciences, Universiti Teknologi MARA, Campus of Selangor, 42300 Puncak Alam, Selangor, Malaysia
[3] Department of Occupational Therapy, School of Health Polytechnics, Surakarta, Indonesia

iryanienasiehanisa@gmail.com, akehsan@uitm.edu.my,atiqahazman@uitm.edu.my, niniknurhidayah@gmail.com
Tel: +6018-575 2202

Abstract
This study addresses the escalating challenges posed by Malaysia's rapidly ageing population, with projections indicating a surge in the elderly demographic. The geriatric giant, encompassing issues like immobility and memory impairment, has expanded to include frailty and sarcopenia. Notably, the impact of these conditions on daily activities, notably the crucial spiritual practice of Salah (Islamic prayer) among elderly Muslims, is underexplored. This research aims to bridge this gap by identifying and exploring the intricacies of performing Salah among frail elderly Muslims, shedding light on the often-neglected spiritual needs within the ageing population in Malaysia.

Keywords: *Elderly Muslims, Physically Frail, Salah, Malaysia*

DOI: https://doi.org/10.21834/e-bpj.v9i28.5785

1.0 Introduction

The Department of Statistics Malaysia reported that almost 8% of the Malaysian population in 2010 were 60 years old and above, classified as elderly. Malaysia's ageing population is growing at a fast rate. According to the 2010-2040 population forecast by the Department of Statistics, the population of 60-74 years and over was 1.8 million in 2010, and the number will increase to 4.5 million by 2040, an increase of nearly 2.5 times. Furthermore, the Malaysian population's life expectancy was reported to have increased from 71.9 years (2011) to 77 years (2013) for men and 77 years (2011) to 79 years (2013) for women. This statistic was the result of declining fertility rates and increasing life expectancy. With that, Malaysia will be an ageing country in 2030, with 16% of the population aged 60 years and above.

The rising number of older people in Malaysia raises attention where older people are often associated with many issues known as the "*Geriatric Giant*" (Morley, 2004; Morley, 2017), which are immobility, instability, incontinence, and intellectual/memory impairment, frailty and sarcopenia. Frailty and sarcopenia symptoms and other issues will impede successful performance in the activity of daily living (Coventry et al., 2020; Guidet et al., 2020). One of the most important daily activities among elderly Muslims is engagement in spiritual activity, which is Salat or Islamic prayer (Aris et al., 2017; Chamsi-Pasha & Chamsi-Pasha, 2021). Salat is one of the central

DOI: https://doi.org/10.21834/e-bpj.v9i28.5785

constructs that form an identity as a Muslim (Hidayat, 2017). Muslims view spirituality as connected to religious activities such as their daily prayers (Salat), fasting during Ramadan, zakat, and other spiritual activities as the inner sincerity in submitting themselves to God, as mentioned in the Quran and Sunnah (Ahmad & Khan, 2015). The Muslim prayer, known as Salat, is obligatory for all Muslims. It is a routine worshipping daily activity performed at a specific prescribed time and duration. The actual way of Salah encompasses various specific physical movements of the body, such as standing and facing the *Qibla, Qiyam, Ruk'u, sujud* (prostration) etc, the Quranic recitations, and other specific supplications (Hidayat, 2017). However, many older people cannot follow specific physical movements based on *rukun* and sequence (the actual ways) and have to modify their movements, such as Salat, in sitting or lying positions due to various health-related issues.

Investigation into spiritual issues in healthcare practice received less attention than other issues. Previous studies indicate that spiritual needs are one of the most critical unmet needs (Kalánková et al., 2021; Fadila et al., 2019), for example, among older people in Malaysia (Aris et al., 2017; Achour et al., 2019; Chamsi-Pasha & Chamsi-Pasha, 2021). Unfortunately, there is a lack of studies focusing on addressing spiritual needs, primarily related to performing Salat. Hence, this study aims to determine the issues in performing the actual ways of salah among physically frail elderly Muslims.

The objectives of this study are: 1) To identify the level of performance in Salah and the medical conditions that affect the performance in Salat in the actual ways.2) To identify any significant difference in the level of performance in the actual way of salah with the experiences of pain among older persons with frailty, 3) To identify any significant difference in the level of performance in the actual way of salah with the level of fitness among older persons with frailty.

2.0 Literature Review

There are many issues among older persons, such as physical, psychological, cognitive, and psychosocial issues. Cognitive impairment is a common issue for older people. The problems include memory loss, inability to understand words, slower response, dementia, and others. The psychological issues common among older people include apathy, depression, anxiety, stress, low self-esteem, and suicidal ideation. Among all the issues that older people may experience, the most common is the physical issue (Hairi et al., 2010). The changes in physical ability can be seen, such as immobility problems, reduced strength and endurance, balance problems, and dexterity issues.

The physical issues lead to decreased performance in daily activities such as home-related activities, cooking, house chores, participating in social and recreational activities in the community, and performing the actual ways of *Salah* (Muslim prayer). The inability to perform *Salah* among cognitively intact elderly is often related to physical issues. This may be due to pain when performing specific movements, e.g., back pain, shoulder pain, knee pain, lack of balance while standing, difficulty in changing positions (e.g., from standing to bowing, Qiyam, prostrate, etc.), fear and risk of falling, difficulty standing from prostrate positions, pressure on the knee and back leading to pain and discomfort. This often happens to frail older people. Frailty is a term used to describe a state of increased vulnerability to stressors due to age-related declines in physiological reserve and function across multiple organ systems. Frail individuals are at a higher risk of adverse health outcomes such as disability, falls, hospitalisation, and mortality. Frailty is often characterised by weakness, fatigue, unintentional weight loss, slow walking speed, and reduced physical activity.

Frailty is associated with a decline in physical function and a reduction in the ability to perform activities of daily living (ADLs) and instrumental activities of daily living (IADLs) (Provencher et al., 2017; Schmidle et al., 2022), which are essential for maintaining independence and quality of life in older adults. Several studies have investigated the relationship between frailty and performance in ADLs and IADLs in older adults and found that frailty decreased performance in conducting daily activities which lead them to be dependent to carers. However, there are many older persons who want to be independent or inter-dependence in conducting their daily life (Makhtar et al., 2016; Multalib et al., 2016). Additionally, an article by Provencher et al. (2017) investigates the relationship between frailty components and disability in specific activities of daily living in community-dwelling older adults in Canada. The results showed that frailty components, such as low physical activity and weak grip strength, were associated with a higher risk of disability in specific ADLs, such as bathing and dressing. The study highlights the importance of addressing frailty in older adults to prevent disability and maintain independence in daily activities, which include performing Salah in the actual ways.

3.0 Methodology

3.1Study Design

A cross-sectional study was conducted, and the study participants were selected using a purposive sampling strategy.

3.2 Participants of the study and sample size.

The participantsare from the *Pusat Aktiviti Warga Emas* (PAWE) in Perak, Malacca, and Selangor and the older people who live in the community in Ipoh, Perak. The inclusion are 1) elderly age 60 and above, 2) Scores between 60 – 100 on the Modified Barthel Index that indicate moderate dependency to independence in daily activities, 3) Sores 26 and above in Montreal Cognitive Assessment (MoCA) indicates normal cognitive functions, 4) Score 3 – 4 in FRAIL scale indicated frailty, 5) Muslim religion (*Mazhab Shafie).*Each participant was approached individually, and each participant who consented to the study and who fit the inclusion criteria was given an explanation about the aims and procedure of the study G*Power calculations software was used to determine the sample size. One hundred and

one samples are needed to provide an effect size of 0.3, with αerror probability of 0.05, providing the power of 95%. Considering 30% of non-response and error, the total sample needed is 159.

3.3 Research Instruments

Three research instruments were used.

3.3.1 Demographic questionnaire.

This section asked demographic questions such as age, medical history, and performing Salah issues.

3.3.2 The Nordic Musculoskeletal Questionnaire (NMQ).

The NMQ assesses pain and discomfort in various body regions like the hand, back and lower limbs. (Kuorinka et al., 1987). It helps identify the level of pain and specific areas affected, aiding in understanding musculoskeletal issues for effective intervention and management

3.3.4 Patients Specific Functional Scale (PSFS).

The PSFS is a self-report measure to identify functional status limitations most relevant to individual patients. Patients rate their current level of function for each identified activity on a scale from 0 to 10, with 0 indicating "unable to perform the activity" and ten indicating "able to perform the activity at pre-injury or pre-condition level". It was designed for use in patients with varied musculoskeletal problems. The PSFS is a patient-specific measure that can assess functional changes in clinical presentation (Horn et al., 2012). This instrument was used to evaluate Salah's level of performance.

3.3.5 The Fullerton Fitness Test (FFT).

The FFT is a comprehensive assessment tool designed to evaluate functional fitness in older adults. Its purpose is to assess overall physical performance and functional capacity, helping to identify areas of weakness and guide targeted interventions (Rikli et al., 1999). Test components include upper and lower body strength, flexibility, aerobic endurance, balance, and agility. It is a performance-based assessment, and the scores were compared with the standardised norms.

3.4 Ethics

The study was approved by the Research Ethics Committee of Universiti Teknologi MARA (500-FSK (PT. 23/4) and the Minister of Social Welfare (JKMM 100/12/5/2: 2023 / 047). All participants were explained the aim and objectives of the study, and informed consent were obtained and collected from the participants

3.5 Method of data analysis

Data was analysed using the Statistical Package for the Social Sciences (SPSS) version 21.0. Descriptive statistics using Mean, standard deviation and per cent were used to describe the data distribution. To determine the relationship between Salah's level of performance with pain and level of fitness, the Pearson correlation coefficient (r) was used.

4.0 Findings

4.1 Demographic characteristics of the respondent

One hundred sixty-three respondents were identified prospectively for the study. Table 1 summarises the demographic data and demographic characteristics of respondents.

The table indicates that there are 163 respondents in the study, which consists of 47.9 (%) males and 52.1 (%) females. Most respondents were from the young old group (89 %). Marital statuses indicate that 102 respondents (62.6%) were married, and 56 (34.4%) were widows. The participants mostly are in the category of young old (145 respondents (89.0%). 58.3% (n=95) of the total respondents were sometimes able to perform Salah in the actual ways, whilst 30.1% (n=49) were totally unable to perform the Salah in the actual ways. However, most participants (87.1%, n=142) wanted to perform in the actual ways. Most of the problems related to performance in Salah are musculoskeletal problems (n=94, 57.7%), and the mean (SD) performance in Salah is 5.60 (2.19), which is moderate performance.

Table 1. Demographic characteristics of the participants

No	Variable			N (%)
1	**Gender**	-	Male	78 (47.9)
		-	Female	85 (52.1)
2	**Marital status**	-	Single	5 (3.1)
		-	Married	102 (62.6)
		-	Widow	56 (34.4)
3	**Age**	-	young old (ages 65 to 74 years)	145 (89.0)
		-	middle-old (ages 75 to 84 years)	15 (9.2)
		-	oldest-old (≥85 years)	3 (1.8)

4	**Income**	-	Less than RM 2500	94 (57.7)
		-	RM 2500 – RM 7000	61 (37.4)
		-	More than RM 7000	8 (4.9)
5	**Medical history**	-	No Medical condition	17(10.4)
		-	Medical Condition	114(69.9)
		-	Sensory deprivation	9(5.5)
		-	Musculoskeletal Condition	2(1.2)
		-	Others - respiratory, medical, sensory etc.	21 (12.8)
6.	**Are you able to perform *Salah* in an actual way?**	-	Yes	19(11.7)
		-	Sometimes	95(58.3)
		-	No	49(30.1)
7.	**State the problem that hinders *Salah* in an actual way?**	-	No problem	16(9.8)
		-	Musculoskeletal Pain	94(57.7)
		-	Numbness	9(5.5)
		-	Fatigue/Low Endurance and Limited Movement	19(11.7)
		-	Musculoskeletal, Fatigue/Low Endurance, Limited ROM	24(14.7)
		-	Incontinence, Fatigue/Low Endurance, Limited ROM	1(0.6)
8.	**Do you want to perform *Salah* in an actual way?**	-	No problem	10(6.1)
		-	Yes	142(87.1)
		-	Sometimes	8(4.9)
		-	No	3(1.8)
9	**Level of performance in *Salah*** (Mean/SD)			5.60 (2.19)

ROM = Range of Movement

4.2 The level of performance in salah among elderly who experience pain

An independent sample t-test was conducted to compare the level of performance in the actual way of salah with the experiences of pain. The results indicate that there is a significant difference in the performance of Salat between the participants who are having pain and no pain, especially the participants who experience pain in the lower back, hip/thigh and knee, as shown in Table 2. People who are having pain in these areas score lower performance in Salat. For example, there was a statistically significant difference among older persons with frailty in no pain (M=6.16, SD=2.50) and with pain in the thigh/hip area (M=5.08, SD= 1.72: t (163) = -3.23, p= 0.00 (two-tailed) as shown in table 2. The magnitude of the differences in the means (mean difference = -1.50, 95% CI: -1.74 to -0.42) with moderate eta squared (0.03) is similar to older persons with pain in the knee area. There was a statistically significant difference in (NO) (M=6.68, SD=2.40) and (YES) (M=5.18, SD= 6.68: t (163) = -0.40, p= 0.02 (two-tailed) as shown in table 2. The magnitude of the differences in the means (mean difference = -1.50, 95% CI: -2.22 to -0.77) with large eta squared (0.12)

Table 2. Independent sample t-test between the level of performance in the actual way of salah in the body area with the pain (Yes/No)

	Items	Mean	Standard deviation	t	df	F	Sig.	eta squared
Neck	Yes	4.98	1.99	-2.61	161	2.62	0.10	0.04
	No	5.91	2.23					
Shoulder	Yes	5.40	2.24	-1.01	161	0.00	0.94	0.00
	No	5.75	2.16					
Upper back	Yes	4.79	1.87	-3.65	161	3.30	0.07	0.03
	No	6.05	2.24					
Elbow	Yes	4.93	1.96	-1.92	161	1.37	0.24	0.02
	No	5.76	2.22					
Wrist/hand	Yes	5.63	2.07	0.39	161	1.07	0.30	0.14
	No	5.55	2.26					
Lower back	**Yes**	**5.26**	**1.84**	**-2.43**	**161**	**14.50**	**0.00**	**0.02**
	No	**6.10**	**2.57**					
Hip/thigh	**Yes**	**5.08**	**1.72**	**-3.23**	**161**	**21.6**	**0.00**	**0.03**
	No	**6.16**	**2.50**					
Knee	**Yes**	**5.18**	**1.97**	**-0.40**	**161**	**4.98**	**0.02**	**0.12**
	No	**6.68**	**2.40**					
Ankle/feet	Yes	5.32	2.15	-2.249	161	0.016	0.90	0.04
	No	6.12	2.20					

4.3 The level of performance in the actual way of salah with the level of fitness

An independent sample t-test was conducted to examine the relationship between their performance level of salah and their level of fitness, specifically focusing on lower limb strength, lower limb flexibility, aerobic endurance, and dynamic balance within the older population with frailty (Lower than normal range/ Within normal range). The analysis revealed no statistically significant difference

between the performance level of salah and the level of fitness (lower limb strength, lower limb flexibility, aerobic endurance, and dynamic balance) among older individuals with frailty, as indicated by a p-value greater than 0.05, as shown in Table 3 below.

A One-Way ANOVA test was conducted to compare the relationship between the performance level of salah and the level of fitness (upper limb strength). There were statistically significant differences at the $p<0.05$. The level of performance with a level of fitness (upper limb strength), $F= 4.34$, $p<0.05$, as shown in Table 4. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the higher group (low than normal range) group (M=5.30 SD=2.03) did significantly between the smaller group (above normal range) group (M=7.33 SD= 2.33). The effect size of eta squared was a small effect of 0.05.

Table 3. Independent sample t-test between the level of performance in the actual way of salah with the level of fitness (lower limb strength, lower limb flexibility, aerobic endurance, and dynamic balance)

	Items	Mean	Standard deviation	t	df	F	Sig.	eta squared
Chair stand test	Low-than-normal range	5.65	2.15	0.73	161	1.301	0.25	0.10
	Within normal range	5.32	2.41					
Chair sit and reach the test	Low-than-normal range	4.82	1.99	-1.825	161	1.579	0.21	0.01
	Within normal range	5.74	2.23					
8 foot up and go test	Low-than-normal range	5.57	2.15	-0.17	161	1.782	0.18	0.03
	Within normal range	6.11	3.89					
2 minutes step in place	Low-than-normal range	5.56	2.21	-0.53	161	0.013	0.91	0.09
	Within normal range	5.85	2.13					

A One-Way ANOVA test was conducted to compare the relationship between the performance level of salah and the level of fitness (upper limb flexibility). There were no statistically significant differences at the $p> 0.05$ between the performance level of Salah and the level of fitness (upper limb flexibility) $F= 1.67$, $p>0.05$, as shown in Table 4 below. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the higher group (low than normal range) group (M=5.92 SD=2.27) did not differ significantly between the smaller group (above normal range) group (M=5.16, SD= 2.01). The effect size of eta squared was a small effect of 0.02.

Table 4. One-way ANOVA test pain (neck) with the level of difficulty among physically frail elderly Muslim

	Items	Mean	Standard deviation	df	F	Sig.	eta squared
Arm curl test	**Low than normal range**	**5.30**	**2.03**				
	Within normal range	**6.13**	**2.41**	**2**	**4.344**	**0.01**	**0.05**
	Above normal range	**7.33**	**2.33**				
Backstretch test	Low than normal range	5.92	2.27	2	1.671	0.19	0.02
	Within normal range	5.39	2.15				
	Above normal range	5.16	2.01				

5.0 Discussion

The findings of this study shed light on the challenges faced by physically frail elderly Muslims in performing Salah, the ritual prayer central to Islamic practice. Despite the importance of adhering to Salah's actual ways, a significant proportion of respondents reported difficulties in doing so. This underscores the importance of addressing these challenges to enable elderly individuals to fulfil their religious obligations effectively.

One key finding is the prevalence of musculoskeletal problems among participants, with a majority attributing their difficulty in performing Salah to such issues. This aligns with existing literature highlighting the impact of musculoskeletal conditions on physical function and mobility in elderly persons (Hootman & Helmick, 2006; Schmidle et al., 2022). Specifically, pain in areas such as the back, hips, and knees was associated with lower performance in Salah. These findings emphasise the need for targeted interventions, such as pain management strategies, to alleviate musculoskeletal symptoms and improve functional capacity in elderly individuals (Jordan et al., 2010).

Interestingly, despite the challenges encountered, most participants expressed a desire to perform Salah in the actual ways. This reflects the intrinsic importance of religious practice and highlights the potential psychological and spiritual benefits associated with fulfilling religious duties. However, the moderate mean performance score suggests a gap between intention and ability, indicating the need for tailored interventions to bridge this divide.

Furthermore, the study did not find significant differences in Salah's performance based on fitness level, including strength, flexibility, endurance, and dynamic balance. This suggests that factors beyond physical fitness alone influence Salah's performance in the elderly population. Future research could explore other psychosocial factors, such as self-efficacy, motivation, and social support, which may impact adherence to religious practices in this demographic (Levin et al., 2005).

6.0 Conclusion & Recommendation

In conclusion, the findings of this study highlight the significant challenges faced by physically frail elderly Muslims in performing Salah according to the actual ways prescribed in Islamic teachings. Despite a strong desire among participants to adhere to these practices, musculoskeletal problems emerged as a major barrier, particularly affecting performance in areas such as the back, hips, and knees. While physical fitness did not significantly influence Salah's performance, a notable gap exists between intention and ability, indicating the need for targeted interventions to bridge this divide. The finding from this study filled the knowledge gap that exists in the literature regarding the reason for not being able to Salah in an actual way. The findings also have implications for healthcare professionals, religious leaders, and caregivers involved in the well-being of physically frail elderly Muslims.

Further research and collaborative efforts are warranted to enhance our understanding and develop effective strategies to support the well-being of physically frail elderly Muslims in their religious practices. Addressing these challenges is crucial for promoting holistic well-being and spiritual fulfilment among elderly individuals, thereby enhancing their quality of life. Several limitations of this study, such as the lack of measuring the psychological components of Salah and the cognitive components, can be addressed for better research in the future.

Acknowledgement

The authors would like to acknowledge the Faculty of Health Science, Universiti Teknologi MARA (UiTM). The authors also wish to thank all the participants in this research project.

Paper Contribution to Related Field of Study

This paper makes a significant contribution to the field of health sciences.

References

Achour, M., Ab Halim, A. B., Ali, A. R. H., Sa'ari, C. Z. B., & Al-Nahari, A. A. A. Q. (2019). Religiosity and subjective well-being towards a balanced civilisation: a study among Muslim older adults in Malaysia. *Journal of Al-Tamaddun,* 14(2), 153-165.

Ahmad, M., & Khan, S. (2015). Muslims in Australia and their aged care needs: An exploratory study with special reference to South Australia.

Aris, M. S. M., Rani, M. D. M., Jaafar, M. H., Norazmi, A. U. A., & Umar, N. S. (2017). Knowledge, Attitude, and Practice of Performing Prayers (Salah) Among Muslim Patients in Hospital Langkawi, Kedah: Roles of Muslim Healthcare Providers. *Advanced Science Letters*, 23(5), 4955-4959.

Chamsi-Pasha, M., & Chamsi-Pasha, H. (2021). A review of the literature on the health benefits of Salah (Islamic prayer). *Med J Malaysia*, 76(1), 93-97.

Clegg, A., Young, J., Iliffe, S., Rikkert, M. O., & Rockwood, K. (2013). Frailty in elderly people. *The Lancet*, 381(9868), 752–762.

Coventry, P. A., McMillan, D., Clegg, A., Brown, L., van der Feltz-Cornelis, C., Gilbody, S., & Ali, S. (2020). Frailty and depression predict instrumental activities of daily living in older adults: A population-based longitudinal study using the CARE75+ cohort. *PLoS One*, 15(12), e0243972.

Fadila, D. E. S., & Abd Elhameed, S. H. (2019). Spiritual needs, well-being and perception of health among community-dwelling older adults. *IOSR Journal of Nursing and Health Science* (IOSR-JNHS) e-ISSN, 2320-1959.

Foong, H. F., Hamid, T. A., Ibrahim, R., & Haron, S. A. (2020). The association between religious orientation and life satisfaction in older adults living with morbidity and multimorbidity: a gender perspective in Malaysia. *Psychogeriatrics,* 20(6), 891–899.

Guidet, B., De Lange, D. W., Boumendil, A., Leaver, S., Watson, X., Boulanger, C., ... & Flaatten, H. (2020). The contribution of frailty, cognition, the activity of daily life and comorbidities on outcome in acutely admitted patients over 80 years in European ICUs: the VIP2 study. *Intensive care medicine*, 46, 57-69.

Hidayat, M. A. (2017). Ibadat, the body, and identity: Islamic rituals and the construction of Muslim identity. *The Journal of Society and Media*, 1(2), 1-17.

Hootman, J. M., & Helmick, C. G. (2006). Projections of US prevalence of arthritis and associated activity limitations. *Arthritis & Rheumatism,* 54(1), 226-229.

Horn, K. K., Jennings, S., Richardson, G., Van Vliet, D., Hefford, C., & Abbott, J. H. (2012). The patient-specific functional scale: psychometrics, clinimetrics, and application as a clinical outcome measure. *journal of orthopaedic & sports physical therapy*, 42(1), 30-42.

Jordan, K. P., Kadam, U. T., Hayward, R., & Porcheret, M. (2010). Musculoskeletal pain in older adults: the impact of physical activity. *Health and Quality of Life Outcomes*, 8(1), 63.

Kalánková, D., Stolt, M., Scott, P. A., Papastavrou, E., Suhonen, R., & RANCARE COST Action CA15208. (2021). Unmet care needs of older people: A scoping review. *Nursing Ethics*, 28(2), 149-178.

Kuorinka, I., Jonsson, B., Kilbom, A., Vinterberg, H., Biering-Sørensen, F., Andersson, G., ... & Jørgensen, K. (1987). Standardised Nordic questionnaires for the analysis of musculoskeletal symptoms. *Applied Ergonomics*, 18(3), 233-237.

Levin, J. S., Chatters, L. M., & Taylor, R. J. (2005). Religious effects on health status and life satisfaction among black Americans. The Journals of Gerontology Series B: *Psychological Sciences and Social Sciences*, 60(6), S281-S287.

Makhtar, T. A. T., Dahlan, A., Masuri, M. G., & Danis, A. (2016). Interdependence in Malay older people who live in the institutions: an interpretative phenomenological analysis. *Procedia-Social and Behavioral Sciences*, 234, 98-105.

Mutalib, A. S. A., Dahlan, A., Danis, A., & Masuri, M. G. (2016). Interdependency and Quality of Life amongst Malay Older People in the Community: An interpretative phenomenological analysis. *Procedia-Social and Behavioral Sciences*, 234, 90-97.

Morley, J. E. (2004). A brief history of geriatrics. The Journals of Gerontology Series A: *Biological Sciences and Medical Sciences,* 59(11), 1132–1152.

Morley, J. E. (2017). The New Geriatric Giants. Vol. 33. Clinics in Geriatric Medicine. WB Saunders. Nunnally, J. C. (1967). Psychometric theory. 96
Provencher, V., Béland, F., Demers, L., Desrosiers, J., Bier, N., Ávila-Funes, J. A., ... & Hami, B. (2017). Are frailty components associated with disability in specific activities of daily living in community-dwelling older adults? A multicenter Canadian study. *Archives of gerontology and geriatrics,* 73, 187-194.

Rikli, R. E., & Jones, C. J. (1999). Development and validation of a functional fitness test for community-residing older adults. *Journal of Aging and Physical Activity*, 7(2), 129-161.

Schmidle, S. (2022). The relationship between self-reported physical frailty and sensor-based physical activity measures in older adults. In Gerontologie und Geriatrie Kongress 2022–Altern im Spannungsfeld von Resilienz und Vulnerabilität.