

A Scoping Review on Determinants of Active Ageing in Southeast Asian Region (Ulasan Penskopan Penentu Penuaan Aktif di Rantau Asia Tenggara)

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Received: 25 November 2022/Accepted: 14 April 2023

ABSTRACT

Many developing countries face a rapidly ageing population requiring sufficient preparation to integrate various services for enhancing healthy active ageing. However, there is a lack of evidence on the comprehensive framework of active ageing and its overall determinants, especially in the Southeast Asia region. The current review sought to understand the main determinants of active ageing to predict the indicators of active ageing in the Southeast Asia region. A scoping review is conducted by reviewing English language literature published between 2002 and 2022 in three electronic databases, including Scopus, ScienceDirect, and PubMed, using MeSH terms, keywords, and inclusion and exclusion criteria. The review found a wide range of variables related to five determinants of healthy ageing in Southeast Asia. Participation in social, physical, learning, and labour activities is the most frequent and popular determinant of active ageing in Southeast Asia. Followed by health (health services and health status), perceived environment (neighbourhoods and housing), security (financial security, social status, and independency), behavioural (spirituality and lifestyle), and personal demographic characteristics, respectively. Overall, this scoping review contributed to the identification of comprehensive indicators of active ageing in Southeast Asia, including Malaysia.

Keywords: Active ageing; active ageing indicators; Malaysia; participation; Southeast Asia

ABSTRAK

Kebanyakan negara membangun menghadapi kepantasan penuaan penduduk yang menuntut persediaan rapi untuk mengintegrasikan pelbagai perkhidmatan bagi mempertingkatkan penuaan aktif yang sihat. Namun, maklumat bagi rangka kerja penuaan aktif yang komprehensif dan penentu keseluruhannya adalah kurang, terutamanya di rantau Asia Tenggara. Kajian ini bertujuan untuk memahami penentu utama penuaan sihat bagi mengenal pasti penunjuk penuaan aktif di rantau Asia Tenggara. Ulasan penskopan melibatkan sorotan kepustakaan dalam bahasa Inggeris yang diterbitkan antara tahun 2002 dan 2022 dalam tiga pangkalan data elektronik iaitu Jurnal SAGE, Scopus dan PubMed, menggunakan terma MeSH, kata kunci serta kriteria kemasukan dan pengecualian. Kajian mendapati pelbagai pemboleh ubah berkaitan dengan lima penentu penuaan sihat di Asia Tenggara. Penyertaan dalam aktiviti sosial, fizikal, pembelajaran dan tenaga kerja adalah penentu penuaan aktif yang paling kerap dan popular di Asia Tenggara. Ini diikuti dengan kesihatan (perkhidmatan kesihatan dan status kesihatan), persepsi persekitaran (kejiranan dan perumahan), keselamatan (keselamatan kewangan, status sosial dan kebebasan), tingkah laku (kerohanian dan gaya hidup) dan juga ciri demografi. Secara keseluruhannya, ulasan skop ini dapat mengenal pasti penunjuk yang komprehensif bagi penuaan aktif yang sihat di Asia Tenggara, termasuk Malaysia.

Kata kunci: Asia Tenggara; Malaysia; penuaan aktif; penunjuk penuaan aktif; penyertaan

INTRODUCTION

The older population is growing with unprecedented, enduring, and profound implications, especially in low-income and middle-income countries (Tiraphat et al. 2021). According to the World Population Prospects 2019, up to 70% of the older population aged 60 and over are found in less developed countries. In 2020, over half (57.8%) of the world's aging population is lived in Asia (United Nations 2020). The older adults in the Southeast Asia region are overgrowing, and the growth rate of older adults aged 60 and over is increasing from 11.1% to 22.2% in 2020 and 2050, respectively (United Nations 2020). The older population aged 60 and over in the Southeast Asia region is expected to increase from 1 in 10 persons to 1 in 5 persons by 2050. This unprecedented growth in the older adult population is accompanied by different challenges and opportunities, especially in health, social, and financial security (Wongsala, Anbäcken & Rosendahl 2021). The ageing related challenges include health problems, social inclusion and abuse, employment and work (Brooke 2016).

The health-related ageing problems included physical health and disability, non-communicable diseases, mental illness, dementia, and injuries (Lee et al. 2020; Tiraphat et al. 2020). These increased challenges are led to increasing pressure on the burden on the curative systems of most middle-income economies (Brooke 2016). To maximise the gains from ageing and minimise the costs, a focus on healthy, productive ageing is required. Therefore, there is growing recognition of the need to integrate the contributions of older adults into the social, cultural, spiritual, economic, and civic affairs of the communities to have the opportunity to remain active (Lim & Thompson 2016).

Active ageing refers to optimising opportunities for health, participation, and security to promote quality of life as people age (Wongsala, Anbäcken & Rosendahl 2021; World Health Organization 2002). Active ageing is a nebulous concept that is rooted in activity theory developed by Havighurst (1961), who mentioned that older adults who are active and practice social interaction have more satisfaction in life than those otherwise. Earlier, developed countries applied this concept when the proportion of their older adults is raised, with a focus on the social security system (Walker 2002). They also have adopted the enhancement of the productive social activities, contributing to labour, enhancing care and traditional activities (Boudiny & Mortelman 2011; Wongsala, Anbäcken & Rosendahl 2021). Hence, the basic pillars of active ageing are health, participation, and

security (World Health Organization 2002). The health pillar is divided into many indicators, such as care and prevention of disability and disease. The security pillar refers to the protection and respect of older adults through addressing their social and financial security (Walker 2002). The participation pillar is based on indicators of employment and work, learning opportunities, social activities, and social inclusion (Walker 2002).

The WHO also promoted the concept of an 'age-friendly environment' by providing enabling living environments to enhance the quality of life as people age. Providing enabling age-friendly environment is critical to optimising opportunities for health, participation, and security of active ageing (World Health Organization 2007). Some studies also supported a positive association between the behavioural determinants, spiritual and cognitive activities and active ageing (Lim & Thompson 2016). In addition, socio-demographic background affects activity levels in older persons. For example, age, gender, and ethnicity can predict the types and level of activity engaged in. However, the predictors of active ageing may be distinct from one region to another (Tiraphat et al. 2021, 2020).

Southeast Asian countries represent one of the most rapidly ageing countries in the world, by 2050, older adults will comprise 20.3% of the total population (United Nations 2020). Thus, the active ageing concept is recently used to guide policy for ageing in many Southeast Asian communities. The Southeast Asian governments, including the Malaysian government, have actively supported several initiatives for healthy living, especially in the health sector (Lim & Thompson 2016; Loke, Lim & Senadjki 2020). However, there is a lack of understanding of critical indicators of active ageing. There is also a lack of evidence and empirical and theoretical investigation that indicate the whole indicators of active ageing in Southeast Asian and Malaysia. This would impede the understanding of active ageing determinants and thus hinder the progress of the active ageing policy in Southeast Asian and Malaysia.

On the other hand, Southeast Asian communities have common social, demographic, cultural, and environmental aspects. Therefore, it is expected that these communities have common determinants of active ageing. Yet, no comprehensive tool available to measure different dimensions of healthy active ageing in the Southeast Asia region. Most of the existing studies investigated one or two indicators of active ageing, such as health variables (He & Tang 2021; Loke, Lim & Senadjki 2020; Wongsala, Anbäcken & Rosendahl 2021), social and demographic

variables (Cheng, Low & Pheh 2021; Lim & Thompson 2016; Subramaniam et al. 2019), or economic variable (Chansarn 2012; Feng & Straughan 2017; Utomo et al. 2018). This would hinder our understanding of the overall determinants of active ageing in the Southeast Asia region. Besides, the information regarding active ageing and its indicators in Southeast Asia is still limited (Chen, Nguyen & Comaroff 2021; Jumadi et al. 2019). Therefore, the current study conducts a scoping review of the existing studies that indicate various determinates of healthy active ageing in the Southeast Asia region in order to identify the related indicators of active ageing in Southeast Asia and Malaysia.

THEORETICAL BASE OF THE SCOPING REVIEW

The conceptual structure of this study is developed from the Policy Framework on Active Ageing developed by World Health Organization (WHO) in 2002. They have suggested three main pillars of active ageing, including health, participation and security; achieving these three pillars contribute to enhancing the quality of life and wellbeing as people age. They argued that if countries, governments, international organisations, and civil society enact active ageing policies, this will promote a better quality of life for residents and cities. They also suggested the concept of age-friendly environments to optimise elderly active ageing under the same framework (World Health Organization 2002). The term 'age-friendly' refers to providing an accessible and responsive environment to the various needs of older adults (World Health Organization 2007). Later, the WHO suggested six determinants for active ageing derived from the main three pillars: Health and social services, physical environment, social determinants, economic determinants, personal determinants, and behavioural determinants (World Health Organization 2002). Therefore, the context of this review was in line

with the suggested pillars and determinants for active ageing by the WHO (Figure 1).

MATERIALS AND METHODS

The current scoping review is applied in compliance with the framework of Arksey and O'Malley (2005), aiming to review the related determinants of healthy ageing in the Southeast Asia region to predict their active ageing indicators. The scoping review is an ideal methods for comprehensive coverage of evidence that provides comprehensive coverage of a body of existing literature, especially for the literature that has not been comprehensively reviewed. It highlights the type, methods, and main findings of initial evidence addressing a field (Arksey & O'Malley 2005). Arksey and O'Malley (2005) highlighted five-step for scoping reviews, including a) specifying research objectives, b) identifying relevant literature, c) screening and selecting the studies, and d) collecting the data (included studies), and e) summarising and drafting the results. Besides, the authors used Mendeley and ATLAS.ti 9 to analyse to collected data and material.

SEARCH STRATEGY

The electronic scoping search is conducted in April 2021 and updated in April 2022 for studies between 2002 and 2022. The databases searched included Scopus, ScienceDirect, and PubMed. The current review covers four major research subjects, including health, social, environmental, and gerontology studies. Besides, four main variables using Medical Subject Headings (MeSH) and keywords are applied in this study, as shown in Table 1. Quotation marks, parenthesis, and truncations are used for advanced searching as needed. The search string is applied only to the title, abstract, and keywords.

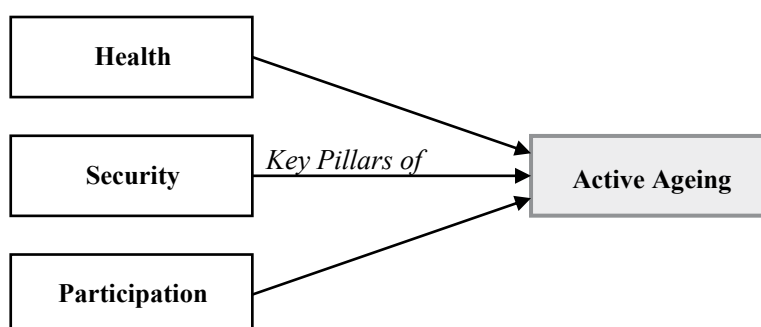


FIGURE 1. Active ageing framework adapted from World Health Organization (2002)

TABLE 1. The search strategy used in the selected three electronic databases

Variable 1		Variable 2		Variable 3: Population
Active ageing OR Active aging	AND	determinates OR indicators OR factors OR behavioural	AND	older person OR older people OR older adult OR elderly OR aged person OR aged OR retiree OR pensioner OR senior OR 'senior citizen' OR ageing population OR 'silver generation' OR 'older population' OR 'pioneer generation'

INCLUSION CRITERIA

The inclusion and exclusion criteria of the scoping review included: a) Year and language of the studies: studies published between 2002 and 2022 in the English language are included. Studies published before 2002 and in a language other than English are excluded. Active ageing is an emerging concept suggested first by the World Health Organization (2002) and most of the related studies back 20 years ago. Therefore, the current study reviewed literature published between 2002 and 2022. (b) Type of the studies: formal research studies, including review studies, journal articles, and conference proceedings, are only reviewed to ensure the quality of the included studies. (c) The focus of the studies: based on the study's objective, the included studies must focus on the elderly active ageing and its determinates in Southeast Asia. Studies focusing on elderly active ageing in countries other than Southeast Asia are excluded. (d) Type of participants: The included studies should focus on older adults aged 50 and above to ensure that the selected studies cover the older adults in Southeast Asia. (e) Quality assessment: the selected studies should pass the quality assessment of the BEME framework as described in the quality assessment section to ensure the quality of the scoping review. The excluded studies are either irrelevant or failed against the quality assessment of the BEME. Figure 2 shows the search flowchart.

STUDY QUALITY ASSESSMENT

The quality assessment tool is critical in detecting the quality of the not rigorously conducted studies. The BEME

quality framework is used to evaluate the quality of the selected studies (Buckley et al. 2009). The BEME quality framework included 11 indicators for quantitative studies and ten indicators for qualitative and review studies. It is provided with a consistent approach to assessing the selected studies. Each indicator in the BEME is evaluated as 1= met or 0= unmet. Each study should complete a minimum of seven indicators to be deemed high quality. Studies scoring below three are rated as weak, studies scoring four to seven are rated as moderate, and those scoring seven and above are rated as strong and included (Buckley et al. 2009). Two authors independently conducted the quality assessment for each selected study to check for consistency and reliability of the study. Disagreements are resolved through online discussion between the two authors, the final discussion regarding the included studies is made by the whole team. Only three studies are excluded due to quality assessment. The process of quality assessment shown in Tables 2 and 3.

SEARCH OUTCOME

A total of 6,934 studies are identified from the three electronic databases as shown in Figure 2. Additional records (n= 18) are also identified from the manual search of other sources and references. The manual search is conducted for the references of the whole full text material using Google scholar and Scopus. After extracting duplicated studies and including studies published in English between 2002 and 2022, a total of 5,677 studies remained, of which 5,570 are excluded based on the title and abstract screening. A text of 109

studies is screened, from which 88 studies are excluded as they included no relevant data (n= 37), no aged

respondents (n= 16), focused on countries and regions other than Southeast Asia (n= 32), or failed in quality assessment (n= 3).

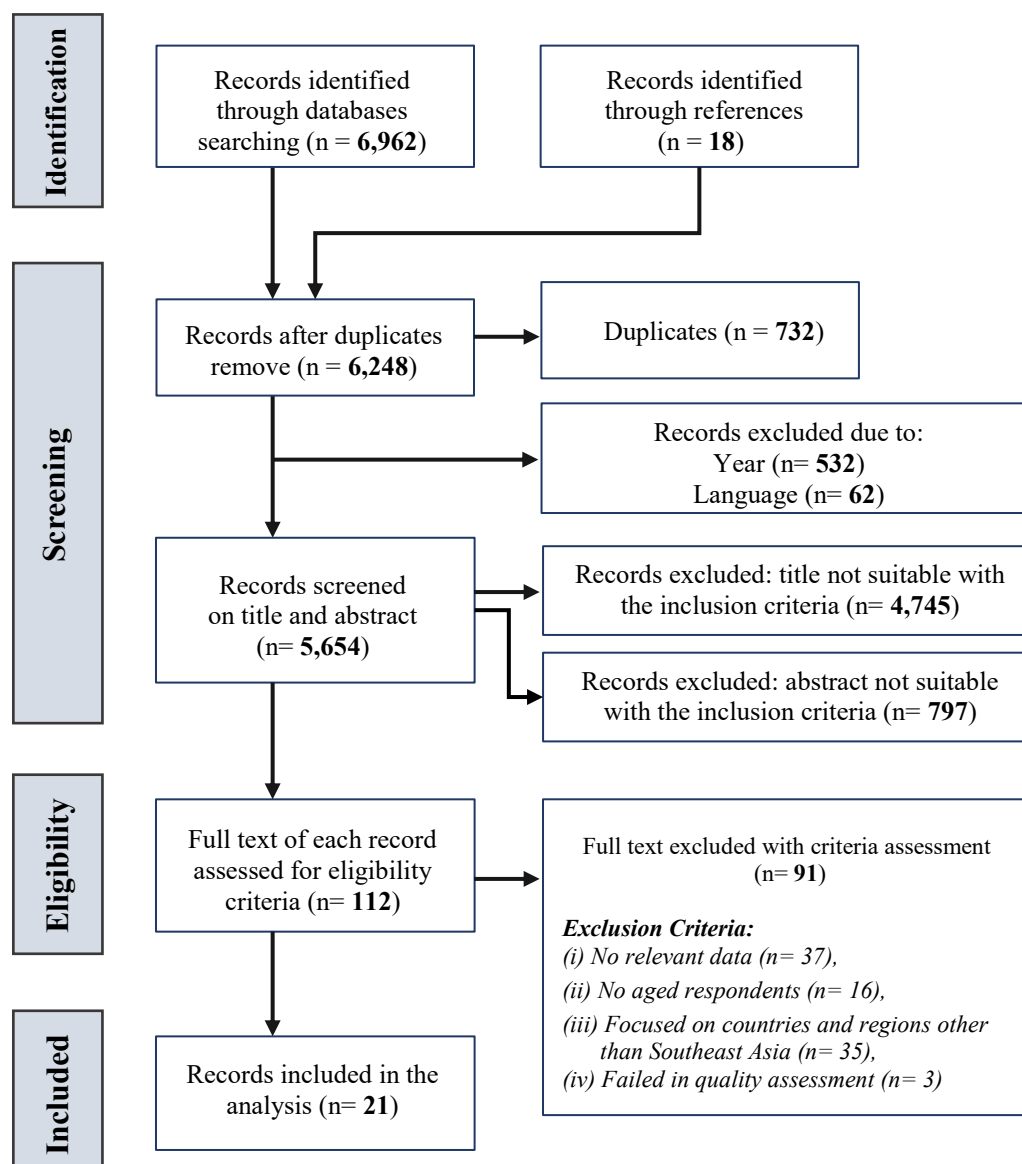


FIGURE 2. Studies selection flowchart

TABLE 2. BEME quality assessment for the selected quantitative studies

BEME Criteria: Quantitative Studies		(Chansarn 2012)	(Teerawichitchainan, Pothisiri & Long 2015)	(Lim & Thompson 2016)	(Lai et al. 2016)	(Feng & Straughan 2017)	(Elsawahli et al. 2017)	(Li et al. 2018)	(Utomo et al. 2018)	(Subramaniam et al. 2019)	(Satsanasupint & Chamaratana 2019)	(Jumadi et al. 2019)	(Loke, Lim & Senadjki 2020)	(Tiraphat et al. 2020)	(Tiraphat et al. 2021)	(Castillo-Carandang et al. 2020)	(de la Vega et al. 2020)	(Chen, Nguyen & Comaroff 2021)	(Gan et al. 2022)
1	Research question: Is the research question or the hypothesis clearly stated?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	Study subject: Is the subject group appropriate for the study being carried out?	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
3	Data collection method: Are the methods used appropriately for the research question and context?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	Completeness of data: Attrition rates/acceptable questionnaire response rate?	1	1	1	1	1	0	0	0	1	0	0	0	1	1	1	1	1	0
5	Risk of bias assessment: Is a statement of author positional and risk of bias assessment included?	1	1	1	1	1	1	0	1	0	1	1	0	0	1	1	1	1	1
6	Analysis of results: Are the statistical and other methods of results analysis used appropriately?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	Conclusion: Is it clear that the data justify the conclusion drawn?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	Reproducibility: Could the study be repeated by other researchers?	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1
9	Prospective: Is the study prospective?	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	Ethical issue: Are all ethical issues articulated and managed appropriately?	1	1	1	1	1	1	1	1	0	0	1	1	0	1	1	1	1	0
11	Triangulation: Were results supported by data from more than one source?	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0
	Total	11	9	10	10	10	8	9	10	10	8	9	8	9	10	10	10	9	8

High quality= 7-10; Moderate quality= 4-6; Low Quality= 0-3. The study should score at least '7' to be included in the review

TABLE 3. BEME quality assessment for the selected qualitative and review studies

BEME Criteria: Qualitative Studies		BEME Criteria: Review Studies						
		(Mongsala, Anbäcken & Rosendahl 2021)	(Bhaktikui et al. 2019)	(Elisawahli, Ahmad & Ali 2017)		(Nguyen, Nantharath, & Kang 2022)	(Liming et al. 2015)	(Mahendran et al. 2013)
Section A: Are the results valid? (Validity of the basic study design)	1. Was there a clear statement of the aims of the research?	1	1	1	Did the review address a clearly focused question?	1	0	0
	2. Is a qualitative methodology appropriate?	1	1	1	Did the authors look for the right type of papers?	1	1	1
	3. Was the research design appropriate to address the aims?	1	1	1	Do you think all the important, relevant studies were included?	1	1	0
	4. Was the recruitment strategy appropriate to the aims?	1	1	1	Did the review's authors do enough to assess quality of the included studies?	1	0	0
	5. Was the data collected in a way that addressed the research issue?	1	1	1	If the results of the review have been combined, was it reasonable to do so?	1	0	0
	6. Has the relationship between researcher and participants been adequately considered?	1	1	1	What are the overall results of the review?	1	1	1
Section B: What are the results?	7. Have ethical issues been taken into consideration?	0	0	0	How precise are the results?	1	0	0
	8. Was the data analysis sufficiently rigorous?	1	1	1	Can the results be applied to the local population?	1	1	1
	9. Is there a clear statement of findings?	1	1	1	Were all important outcomes considered?	1	0	0
Section C: Will the results help locally?	10. How valuable is the research?	1	0	0	Are the benefits worth the harms and costs?	1	0	0
Total		9	8	8		10	3	3

RESULTS

DESCRIPTION OF THE SELECTED STUDIES

The scoping review yielded 6,952 possible articles published between 2002 and 2022 to be included in this review. The scoping review yielded 6,952 studies published between 2002 and 2022, and only 21 studies were selected, of which seven are from Malaysia and Thailand each, five from Singapore, four from Vietnam, three from Myanmar, two from the Philippines, and one from Indonesia. There were three studies that focused on more than one Southeast Asian country. No study was selected from Brunei, Cambodia, and Laos, as the articles from these countries were only grey literature and excluded based on the search inclusion criteria. Most of the publications (10; 47.62%) are cross-sectional surveys, four are mixed-method approaches (19.05%), three are qualitative approaches (14.29%) and longitudinal studies (obtained from a national survey) each, and one systematic review study, respectively (Table 4). It was organized into six themes, including participation, health, perceived environment, security, personal characteristic, and behavioural characteristic.

PARTICIPATION

Participation is the most common determinant of active ageing in the reviewed literature, appearing in 15 studies (71.43%) and shown in five main categories (Table 5). First, ‘social participation’ includes three codes in ten studies: a) maintaining personal relationships and social networks (n= 7 studies; Elsawahli, Ahmad & Ali 2017; Elsawahli et al. 2017; Feng & Straughan 2017; Satsanasupint & Chamaratana 2019; Tiraphat et al. 2021; Utomo et al. 2018; Wongsala, Anbäcken & Rosendahl 2021), b) contributing to community events and activities (n= 5; Bhaktikul et al. 2019; Castillo-Carandang et al. 2020; Chansarn 2012; Feng & Straughan 2017; Tiraphat et al. 2021), and c) contributing to volunteer activity (n= 3; Satsanasupint & Chamaratana 2019; Tiraphat et al. 2021; Wongsala, Anbäcken & Rosendahl 2021). Maintaining personal relationships and social network, contributing to community activities, and volunteering are essential forms of social participation that predict the elderly’s well-being and healthy ageing. Contributing to community activities also includes participation in the family responsibilities, such as taking care of grandchildren and housekeeping (Satsanasupint & Chamaratana 2019; Wongsala, Anbäcken & Rosendahl 2021). The ‘social participation’ category is considered

in the whole of the Southeast Asia countries, including Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

Second, the category ‘participation in social-physical activity’ is mentioned in seven studies from Malaysia, the Philippines, and Thailand (Castillo-Carandang et al. 2020; de la Vega et al. 2020; Elsawahli, Ahmad & Ali 2017; Elsawahli et al. 2017; Loke, Lim & Senadjki 2020; Satsanasupint & Chamaratana 2019; Wongsala, Anbäcken & Rosendahl 2021). The authors confirmed that participation in leisure physical activities, such as daily exercise, cycling, and walking, is critical for enhancing older adults’ healthy ageing and well-being. Third, ‘continue working’ refers to elderly’s participation in employment and work is mentioned in four studies from Indonesia, Malaysia, Singapore, and Thailand. Participation in employment and work in old age is not just crucial for older adults’ active ageing but also for their economic status.

Fourth, ‘lifelong learning’ refers to participation in formal and informal learning in the life course (including older age) is included in two studies conducted in Malaysia, Myanmar, Thailand, and Vietnam (Tiraphat et al. 2021, 2020). Lifelong learning is a critical determinant of active ageing in Southeast Asia. It contributes to empowering older adults and enhancing their ability, education, and skills to continue working and participate effectively in the community. Fifth, one study from Singapore also included the category ‘participation in social-cognitive activity’, such as playing board games, reading, doing crossword puzzles, writing, and participating in group discussions, as a critical item of active ageing (Lim & Thompson 2016).

Therefore, participation, including social, social-physical, social-cognitive, working, and lifelong learning activities, is the most common determinant of active ageing in Southeast Asia (Table 5). However, many of the studies mentioned the need to enhance older adults’ participation in the Southeast Asia region to promote healthy and active ageing (Elsawahli, Ahmad & Ali 2017; Satsanasupint & Chamaratana, 2019; Wongsala, Anbäcken & Rosendahl 2021).

HEALTH

The scoping review showed that about half of the reviewed studies (n=10; 47.62%) have significant results on the health determinant of healthy active ageing. The health determinant is presented in three important categories (Table 5). First, the category ‘health status’ is

TABLE 4. Summary of the reviewed studies

Reference	Study objective	Study design	Study variable & tool	Study finding
(Gan et al. 2022)	To examine the role of neighbourhood cohesion on the relationship between active living and the mental health of the elderly in Singapore.	Method: A cross-sectional quantitative survey Year: 2018 Sample: n= 270; age: ≥50 Setting: Singapore	DV: Health-related quality of life (HRQOL) measured using 12-items of HRQOL Short Form (SF-12v2) IV: Active Ageing Living: measured using a 5-factors questionnaire MV: Neighbourhood cohesion: measured using a 4- factors questionnaire CV: Sociodemographic variables; including age, gender, and educational	The neighbourhood urban environment and its factors are the key indicators affecting elderly active living and healthy activity
(Nguyen, Nantharath & Kang 2022)	To explore evidence on models of care for the ageing community in Vietnam.	Method: A systematic review utilizing PRISMA Year: 2021-2022 Sample: n= 17 articles on elderly Setting: Vietnam	Variable 1= Population: Elderly and elderly care Variable 2= Outcome: Elderly care & healthy ageing Variable 3= Setting: in Vietnam	They found a lack of studies on professional care and policies for the ageing care in Vietnam, which may affect healthy ageing
(Chen, Nguyen & Comaroff 2021)	To investigate how to facilitate active, healthy ageing in the context of neighbourhood design in Singapore.	Method: a mixed-methods; survey, interviews, focus groups, and observations Year: 2018 Sample: 6 participants for focus group; 121 participants for a survey; age: ≥55 Setting: Singapore	DV: Active Ageing Level IV: Physical Activity: measured various forms of physical activity in the neighbourhood context MV: Neighbourhood Elements: measured using main elements of the neighbourhood	Three design elements of the neighbourhood, including stairs, walking paths, and seating, were the predictors of elderly physical activity to enhance active ageing
(Tiraphat et al. 2021)	To investigate the factors associated with the active ageing in Southeast Asia, focusing on Malaysia, Myanmar, Vietnam, and Thailand.	Method: A cross-sectional quantitative survey Year: January to March 2019 Sample: n= 2,031; age: ≥55 Setting: Malaysian, Myanmar, Thailand, and Vietnamese older adults	DV: Active Aging: measured using a 3-dimensions self-reported questionnaire IV: Age-Friendly Environments: measured using a 7-Items self-reported questionnaire Covariate 1: Lifestyle Behaviours, including dietary behaviours and physical activity Covariate 2: Demographics, including age level, gender, educational level, marital status, and country of residents	Older persons living in a community with high levels of age-friendliness will be over five times more active than older persons living in low levels of age-friendliness communities. They found a positive relationship between overall active ageing and neighbourhoods with respect and social inclusion, job support, enough elderly parking lots, and more accessible bus stations

(Wongsala, Anbäcken & Rosendahl 2021)	To explore the elderly perspective on active ageing and its three indicators, including health, participation, and security.	Method: A qualitative approach using interviews Year: - Sample: n= 20; age: 60-92 Setting: Thailand	Variable 1: Three pillars of active ageing, including health, participation, and security Variable 2: Sociodemographic variables, including gender, age, education, occupation, marital status, and habitational status	The three health pillars were explained as the absence of barriers to continued daily living and a peaceful and adaptive mindset. The participation pillar was described as maintaining social networks, being a formal volunteer, and doing meaningful activities. Security was described as good living conditions
(Castillo-Carandang et al. 2020)	To identify the perceptions of active ageing, successful ageing, gender identity, resilience, and vulnerability among the elderly in the Philippines.	Method: Mixed-methods: qualitative (FGDs) and quantitative (survey) Year: - Sample: n= 236 participants in survey; 37 participants in FGDs: age: 55-88 Setting: Philippines	DV 1: Perceptions of Active Aging DV 2: Perceptions of Successful Aging DV 3: Perceptions of Frailty IV: Sociodemographic variables, including gender and employment status	Perceptions of active ageing successful ageing vary based on working status and gender. Overall, social and physical activity are the key indicators of active ageing
(de la Vega et al. 2020)	To identify the demographics and determine the factors of active ageing of specific elderly in the Philippines.	Method: Mixed-methods: qualitative (FGDs) and quantitative (survey) Year: - Sample: n = 194; age: ≥55 Setting: Philippines	DV: Healthy ageing indicators, obtained from 3-indicators, including health, security, and physical activity IV: Sociodemographic variables, including age, gender, type of work, education, marital status, living arrangement, and health insurance	Health ageing indicators included the elderly self-assessed health, oral health, physical activity, financially secure, and behaviour and lifestyle.
(Loke, Lim & Senadjki 2020)	To explores the relationship between active ageing and health promotion among the elderly in Malaysia.	Method: A cross-sectional quantitative survey Year: - Sample: n = 662; age: ≥60 Setting: Malaysia	Variable 1: Health status: measured using included three indicators of health Variable 2: Active Aging: measured using 3-Items, including participation, security, health Variable 3: Socioeconomic and demographic variables, including age, gender, ethnicity, education attainment, household income, household size and availability of transport.	Active ageing and its positive indicators, including continuous working, physical activity, social activity, and participation in society, were associated with positive health status

(Tiraphat et al. 2020)	To survey the perceived age-friendly environments in Southeast Asia, including Malaysia, Myanmar, Vietnam, and Thailand, for their active ageing.	Method: A cross-sectional quantitative survey Year: January to March 2019 Sample: n = 2,171; age: ≥ 55 Setting: Malaysia, Myanmar, Vietnam, and Thailand	Variable 1: Age-Friendly Environments: measured using a 20-Items self-reported questionnaire Variable 2: Lifestyle Behaviours: measured using dietary behaviours and physical activity Variable 3: Sociodemographic, including age level, gender, educational level, marital status, and country of residents	Overall, there is a low score of the perceived age-friendly environment in Southeast Asian countries, which may affect their active ageing level
(Bhaktikul et al. 2019)	To study the important indicators of active ageing in two provinces in Thailand.	Method: A qualitative approach using semi-structured interviews Year: 2018-2019 Sample: n= 12; age: ≥ 80 Setting: Chiang Mai and Nakhon Pathom, Thailand	Active Ageing and its three pillars, including health, participation, and security	The key indicators of active ageing were family or neighbourly support, community participation, health care, social security, and the need for: innovative policies and public services specifically targeted to the elderly' active ageing
(Jumadi et al. 2019)	To determine terms associated with active ageing and to identify the housing environment for the elderly from the Muslim perspective.	Method: A cross-sectional quantitative survey Year: - Sample: n= 411; age: ≥ 50 Setting: Johor, Malaysia	DV: Active Aging IV: Housing environment: included a 3-items self-reported questionnaire CV: Sociodemographic variables, including gender, age, marital status, employment, living arrangement after retirement	The physical, social, spiritual, and religious aspects of housing were essential indicators for active ageing
(Satsanasupint & Chamaratana 2019)	To investigate the relationship between active ageing, social network, and community-dwelling in Thailand.	Method: A cross-sectional quantitative survey Year: 2018 Sample: n= 405; age: ≥ 60 Setting: Thailand	Variable 1: Three pillars of active ageing, including health, participation, and security Variable 2: Sociodemographic variables, including gender, age, education, occupation, marital status, and habitational status	The participation indicator has a critical role in elderly active ageing in Thailand. There is a need to enhance the social participation of the elderly in Thailand
(Subramaniam et al. 2019)	To estimate the overall prevalence and sociodemographic correlates of successful ageing in Singapore.	Method: A longitudinal study (Data of Well-being of the Singapore Elderly) Year: - Sample: n= 2,565; age: ≥ 60 Setting: Singapore	DV: Active Aging indicators: measured using a 5-indicators of active ageing IV: Sociodemographic variables, including age, gender, ethnicity, education and income	Active ageing levels vary based on elderly age, ethnicity, and education level. Being older Chinese aged 75 and over and completed their secondary education had higher odds of ageing successfully than those who were Malay or Indian aged 60–74 with tertiary schooling

(Utomo et al. 2018)	To investigate the levels of social engagement among the elderly in Indonesia.	Method: A cross-sectional quantitative survey Year: 2010 Sample: n = 2,750; age: ≥ 60 Setting: Indonesia	DV: Social engagement, including three dimensions of activities IV: Health status, including two dimensions Covariate: Sociodemographic variables, including gender, age, education, marital status, occupation, and income	Active ageing and its indicators are significant to promote healthy living in the ageing rural communities
(Elsawahli, Ahmad & Ali 2017)	To explore the influence of neighbourhood characteristics on elderly active ageing in Malaysia.	Method: A qualitative approach: interviews Year: - Sample: n = 12; age: ≥ 60 Setting: Malaysia	Active ageing and its indicators: measured using ten open-ended questions related to active ageing	The analysis showed the themes of active ageing, including physical activity, facilitators to physical activity, accessibility, social interaction, safety, and barriers to physical activity
(Elsawahli et al. 2017)	To investigate the perceived environment and variables that inhibit active ageing in Malaysia.	Method: A cross-sectional quantitative survey Year: - Sample: n = 385; age: ≥ 60 Setting: Malaysia	DV: Active ageing variables measured using 2-Items or active ageing IV: Neighbourhood environmental factors: measured using 7-items Covariate: Sociodemographic variables, including age, gender, ethnicity, education, marital status, occupation, and income	Overall, permeability, accessibility, and facilitators to walking are key determinants of active ageing, as there is to enhance the physical design of the neighbourhoods about these three factors
(Feng & Straughan 2017)	To investigate perceptions of successful active ageing among the Singapore elderly	Method: Mixed-methods: qualitative interviews and quantitative survey Year: - Sample: n = 49 for interview; 1,540 for survey; age: ≥ 50 Setting: Singapore	DV: Successful Aging indicators: measured using a 12-factors of active ageing IV: Depression measured based on five symptoms (unsatisfied with life, empty, unhappy, helpless, or worse) Covariate: Sociodemographic variables, including age, gender, ethnicity, education, and employment	The self-sufficiency indicator of active ageing received the highest acknowledgement among Singapore's elderly
(Lai et al. 2016)	To test eight domains of WHO guidelines for the age-friendly community and active ageing.	Method: A cross-sectional quantitative survey Year: 2014 Sample: n = 1,226; age: ≥ 50 Setting: Malaysia	DV 1: Age-Friendly Environment DV 2: Active Aging DV 3: Sociodemographic variables, including gender, nationality, age, educational background, marital status, income level, employment status, and living arrangement IV: Domains of Active Ageing measured using the 8-items of WHO	They found that transportation and housing, community support and health services, and outdoor spaces and buildings are critical indicators of an age-friendly environment, which has a significant positive relationship with active ageing

(Lim & Thompson 2016)	To explain the Singapore elderly participate in social life and community, focusing on the effect of culture and policy context of socialization.	<p>Method: A cross-sectional quantitative survey</p> <p>Year: -</p> <p>Sample: n= 120; age: ≥55</p> <p>Setting: Singapore</p>	<p>DV: Active Aging: measured using a 12-items self-reported questionnaire</p> <p>IV 1: Spirituality and Well-Being: measured using the Spirituality Index of Well-Being (SIWB) a 12-items measure of spirituality as a separate construct from religiosity</p> <p>IV 2: Activity Level: measured using a 12-items questionnaire that focuses on 3-factors, including cognitive, physical and social activities</p>	<p>Age, ethnicity, spirituality, and cognitive activity have predicted active ageing levels among the elderly in Singapore</p> <p>The elderly who are higher in spirituality seeks to participate in various activities, maintain their quality of life, and contribute to society; this affects their active ageing level</p>
(Teerawichitthainan, Pothisiri & Long 2015)	To investigate the role of living arrangements and family support for elderly healthy ageing.	<p>Method: A longitudinal study (data from national representative ageing surveys)</p> <p>Year: 2011-2012</p> <p>Sample: 3,042 participants from Myanmar; 2,310 from Vietnam; 16,015 from Thailand; age: ≥60</p> <p>Setting: Myanmar, Vietnam, and Thailand</p>	<p>DV: Elderly psychological wellbeing</p> <p>IVs: Living arrangement, intergenerational support, and social contacts</p> <p>Covariate: Sociodemographic variables, including gender, age, education, marital status, occupation, housing type, and employment status</p>	<p>They found that living arrangements and intergenerational support significantly affect the elderly psychological well-being in the three countries</p>
(Chansam 2012)	To assess the active ageing of the elderly in Thailand and to investigate its determinants.	<p>Method: A longitudinal study (National Statistical Office's elderly survey)</p> <p>Year: 2007</p> <p>Sample: n = 20,997; age: 60-95</p> <p>Setting: Thailand</p>	<p>DV: Indicators of Active Ageing: measured using a 3-indicators self-reported questionnaire (health, participation, and security)</p> <p>IV: Sociodemographic variables including, age, gender, and marital status</p>	<p>Overall, being old and living in urban areas negatively impacts active ageing in Thailand, whereas awareness of social benefits for older people and education positively influenced it. Therefore, the participation indicator is critical in active ageing among older people in Thailand</p>

DV: Dependent variable, IV/IVs: Independent variable, MV: Mediating variable, CV: Control Variable, FGDs: Focus group discussions

mentioned in seven studies and included three codes a) physical body health (e.g., self-rated health, weight status, NCD, and disability) (n= 7 studies; Castillo-Carandang et al. 2020; Chansarn 2012; de la Vega et al. 2020; Feng & Straughan 2017; Gan et al. 2022; Loke, Lim & Senadjki 2020; Wongsala, Anbäcken & Rosendahl 2021), b) mental health (e.g., feeling of anxiety, frustration, despair, sadness and pessimism) (n= 4; Chansarn 2012; Feng & Straughan 2017; Gan et al. 2022; Wongsala, Anbäcken & Rosendahl 2021), and c) oral health (e.g., periodontal disease and teeth problems) (n= 1; de la Vega et al. 2020). The 'health status' is indicated as a healthy ageing determinant in four Southeast Asian countries, including Malaysia, the Philippines, Singapore, and Thailand.

Second, 'health service' is highlighted in two studies and included four codes: a) reachability, b) affordability, c) diversity, and d) adequate range of health services. Each code mentioned in two studies (Bhaktikul et al. 2019; Lai et al. 2016). They believed that providing reachable, affordable, adequate, and diverse health services contributes to the active ageing of the elderly in Malaysia and Thailand. Third, 'community health service' is mentioned in two studies with four codes: a) reachability, b) affordability, c) adequate range (Lai et al. 2016), and d) availability of community healthcare (Nguyen, Nantharath & Kang 2022). These significant codes of 'community health service' refer to the availability of reachable, affordable, and adequate community service, which is investigated in Malaysia and Vietnam. Therefore, the health determinant of active ageing is a prevalent theme in the literature from five Southeast Asian countries. It was described as the physical, mental, and oral health that predicts the active ageing of older adults (Table 5).

PERCEIVED ENVIRONMENT

The perceived environment appeared in eight literatures (38.10%) as a common determinant of active ageing in Southeast Asia. It is divided into two main categories (Table 5). First, 'neighbourhood spaces design' included ten codes: a) accessibility (e.g., accessibility to spaces, buildings, public toilets, public transportation stops, and public transportation) (n= 8 studies; Chen, Nguyen & Comaroff 2021; Elsawahli, Ahmad & Ali 2017; Elsawahli et al. 2017; Gan et al. 2022; Jumadi et al. 2019; Lai et al. 2016; Tiraphat et al. 2021, 2020), b) Walkability and path design were mentioned in seven studies (Chen, Nguyen & Comaroff 2021; Elsawahli, Ahmad & Ali

2017; Elsawahli et al. 2017; Gan et al. 2022; Lai et al. 2016; Tiraphat et al. 2021, 2020), c) Safety and security appear in four studies (Elsawahli, Ahmad & Ali 2017; Elsawahli et al. 2017; Jumadi et al. 2019; Lai et al. 2016), d) enhance job opportunities and e) provide car parking in three studies each (Lai et al. 2016; Tiraphat et al. 2020, 2021), f) Seating and gathering areas are mentioned in three studies (Chen, Nguyen & Comaroff 2021; Gan et al. 2022; Lai et al. 2016), g) socialisation in three studies (Gan et al. 2022; Jumadi et al. 2019; Tiraphat et al. 2021), h) aesthetic and attractiveness mentioned in two studies (Gan et al. 2022; Lai et al. 2016), i) convenience and permeability in one study (Elsawahli et al. 2017), and j) free of pollution in one study (Lai et al. 2016). The 'neighbourhood spaces design' category is reviewed in five Southeast Asia region countries, including Malaysia, Myanmar, Singapore, Thailand, and Vietnam. Therefore, well-designed neighbourhoods that indicate various aspects and characteristics are an essential determinant of active ageing in Southeast Asia.

Second, the category 'housing' is mentioned in one study conducted in Malaysia by Jumadi et al. (2019). It is divided into three codes: a) physical housing aspect, including manageable house, accessibility to public transport from the house, disability feature, and housing location; b) housing social aspect, including community-based design of housing and attachment to the neighbourhood; d) housing spiritual aspect, including enhancing religious activities, providing mosque as a community centre, providing designs based on Islamic beliefs, providing space for personal privacy, enhancing the involvement of family, religious activities and charities. Therefore, three main aspects of housing, including physical, social, and spiritual, are indicators of active ageing, especially in Malaysia.

SECURITY

Security determinant is mentioned in seven studies (33.33%) and divided into three significant categories (Table 5). First, the 'financial security' appeared in five studies conducted in six Southeast Asian countries (Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam) (Bhaktikul et al. 2019; de la Vega et al. 2020; Feng & Straughan 2017; Tiraphat et al. 2021; Wongsala, Anbäcken & Rosendahl 2021). The financial security of older adults, including good economic status, availability of social security benefits, and financial preparations, is an essential determinant of active ageing in most reviewed Southeast Asian countries.

Second, 'social status', which refers to the support of family and community, is highlighted in five studies from Myanmar, Singapore, Thailand, and Vietnam (Bhaktikul et al. 2019; Chansarn 2012; Feng & Straughan 2017; Teerawichitchainan, Pothisiri & Long 2015; Wongsala, Anbäcken & Rosendahl 2021). 'Social status' is an essential item of the security indicator described as having good children who care for their parents. Third, the 'independence' category is mentioned in three studies conducted in five countries Malaysia, Myanmar, Singapore, Thailand, and Vietnam (Feng & Straughan 2017; Tiraphat et al. 2021; Wongsala, Anbäcken & Rosendahl 2021). 'Independence' is referred to the ability to have independent living in ageing, which predicts active ageing (Feng & Straughan 2017; Tiraphat et al. 2021).

Overall, good health, good economic status, suitable housing, and good social status are considered to have good living conditions that predict active ageing (Wongsala, Anbäcken & Rosendahl 2021). Therefore, the security indicator is described as having a good economic status, social support, living conditions and independent living. However, the reviewed literature showed disagreement about the security status of older adults in Southeast Asia, especially in terms of financial security. Some of the studies mentioned that many older adults in Southeast Asia received pensions and allowances from the government when retiring (Feng & Straughan 2017; Wongsala, Anbäcken & Rosendahl 2021). Other studies confirmed that the economic security of many older adults in Southeast Asia is low (Tiraphat et al. 2021; Wongsala, Anbäcken & Rosendahl 2021).

PERSONAL CHARACTERISTICS

Personal demographic characteristics are mentioned in five studies (23.81%) as determinants of healthy ageing in Southeast Asia. It included one category, 'sociodemographic characteristics' of the elderly, which is divided into six codes: a) age, b) ethnicity, c) education are mentioned in two studies each (Lim & Thompson 2016; Subramaniam et al. 2019); d) gender and e) working status in two studies each (Castillo-Carandang et al. 2020; Utomo et al. 2018); f) living arrangement in one study (Teerawichitchainan, Pothisiri & Long 2015). The 'sociodemographic characteristics' are reviewed in all the Southeast Asia countries, including Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam studies as a critical indicator of active ageing.

BEHAVIOURAL CHARACTERISTICS

Only three studies (14.29%) describe behavioural characteristics as determinants of active ageing in some Southeast Asian countries. It is divided into two categories (Table 5). First, 'spirituality', which refers to the behavioural aspects of the elderly, is presented in one study conducted in Singapore and included two codes: a) life scheme (e.g., ability to view life as meaningful), b) self-efficacy (e.g., ability to create goals and overcome obstacles in life) (Lim & Thompson 2016).

Second, a 'healthy lifestyle', which indicates the healthy behaviour and activity of the older adults' daily living, is described in two studies conducted in Malaysia, Myanmar, Philippines; Thailand, and Vietnam (de la Vega et al. 2020; Tiraphat et al. 2021). However, behavioural is the less represented determinant of active ageing in Southeast Asia. Yet, the elderly behavioural aspects, including a healthy lifestyle and spirituality, are critical determinants of successful ageing in Southeast Asia that could predict active ageing in Malaysia.

DISCUSSION

In line with the suggested framework of active ageing by the WHO (2002), the current study aimed to scope review the related determinants of healthy ageing in the Southeast Asia region to predict active ageing indicators for Southeast Asia region, including Malaysia. There is a lack of evidence on the comprehensive concept of active ageing that includes the overall determinants of active ageing, especially in Southeast Asia. The review found a noteworthy finding regarding six possible predictors of active ageing in Southeast Asia (Figure 3). The most common predicted indicator of active ageing is participation, followed by health, perceived environment, security, personal demographic characteristics, and behavioural characteristics. Existing literature from Malaysia and Southeast Asia confirmed the critical role of participation, health, and security determinants in old age (Elsawahli, Ahmad & Ali 2017; Feng & Straughan 2017; Loke, Lim & Senadjki 2020; Utomo et al. 2018). A study from China conducted by Chen, Ye and Kahana (2019) also indicated that participation, mental health, and financial security are critical aspects to achieving successful ageing in urban China.

Overall, participation, health, and security are the essential pillars determining active ageing suggested by the WHO (2002). However, perceived environment

TABLE 5. Determinants and predictors of healthy active ageing in Southeast Asia

Determinant of AA	No.	Category of AA	Items (Codes)	No.	Country
Perceived Environment	8 studies (38.10%)	a) Neighbourhood spaces design	1. Aesthetic and attractiveness	2 studies	Malaysia and Singapore
			2. Accessibility	8 studies	Malaysia, Myanmar, Singapore, Thailand, and Vietnam
			3. Walkability and paths design	7 studies	Malaysia, Myanmar, Singapore, Thailand, and Vietnam
			4. Enhance job opportunity	3 studies	Malaysia, Myanmar, Thailand, and Vietnam
			5. Provide car parking		
			6. Seating and gathering area	3 studies	Malaysia and Singapore
			7. Socialization	3 studies	Malaysia, Myanmar, Singapore, Thailand, and Vietnam
			8. Safety and security	4 studies	Malaysia
			9. Convenience and Permeability	1 study	Malaysia
			10. Free pollution	1 study	Malaysia
		b) Housing	1. Housing physical aspect	1 study	Malaysia
			2. Housing social aspect		
			3. Housing spiritual aspect		
Health	10 studies (47.62%)	a) Health service	1. Reachability	2 studies	Malaysia and Thailand
			2. Affordability		
			3. Adequate range of health services		
			4. Diversity of health services		
		b) Community health service	1. Reachability	1 study	Malaysia
			2. Affordability		
			3. Adequate range		
			4. Availability of community healthcare		
		c) Health status	1. Physical body health	7 studies	Malaysia, Philippines, Singapore, and Thailand
			2. Mental health	4 studies	Singapore, Thailand
3. Oral health	1 study		Philippines		

Participation	15 studies (71.43%)	a) Social participation	1. Maintaining personal relationships and social networks	7 studies	Indonesia, Malaysia, Myanmar, Singapore, Thailand, and Vietnam
			2. Contributing to community events and activities	5 studies	Singapore, Malaysia, Philippines, Myanmar, Vietnam, Thailand
			3. Contribute to volunteer activity	3 studies	Malaysia, Myanmar, Vietnam, and Thailand
		b) Continue working	Participation in employment and work	4 studies	Indonesia, Malaysia, Singapore, and Thailand
		c) Physical activity	Daily exercise, daily cycling, and daily walking	7 studies	Malaysia, Philippines, Thailand
		d) Cognitive activity	Playing board game, reading, crossword puzzles, and writing	1 study	Singapore
		e) Lifelong learning	Formal and informal learning	2 studies	Malaysia, Myanmar, Thailand, and Vietnam
Security	7 studies (33.33%)	a) Financial security	Economic status, social security benefits, and financial preparations	5 studies	Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam
		b) Social status	Social support of family and community to keep elderly secure	5 studies	Myanmar, Singapore, Thailand, and Vietnam
		c) Independency	Independent living	3 studies	Malaysia, Myanmar, Singapore, Thailand, and Vietnam
Behavioural Characteristic	3 Studies (14.29%)	a) Spirituality	1. Life scheme	1 study	Singapore
			2. Self-efficacy		
		b) Healthy lifestyle	Healthy living and habits	2 studies	Malaysia, Myanmar, Philippines; Thailand, and Vietnam
Personal Demographic Characteristics	5 studies (23.81%)	Sociodemographic characteristics	1. Age	2 studies	Singapore, Malaysia
			2. Ethnicity		
			3. Education		
			4. Gender	2 studies	Indonesia and Philippines
			5. Working status	1 study	Myanmar, Thailand, and Vietnam
			6. Living arrangement		

and personal and behavioural characteristics, as indicators of active ageing, have little expressiveness in the existing literature. Environment, behavioural, and personal demographic characteristics are also critical determiners of active ageing suggested by the WHO (World Health Organization 2002). Recent evidence mentioned that the nearby environment is directly connected with active ageing, as a sound social and physical environment enhances active ageing in Southeast Asia (Gan et al. 2022; Jumadi et al. 2019).

Participation is the most common determinant of active ageing in Southeast Asia (71.43% of selected studies). Participation is described as the elderly’s contribution to the meaningful activities, including social participation at the community and family level, participation in continued employment and work, participation in social physical and cognitive activity, voluntarism and lifelong learning (Castillo-Carandang et al. 2020; Lim & Thompson 2016; Satsanasupint & Chamaratana 2019). Contributing to such activities at old age would enhance health, income level, and wellbeing (Wongsala, Anbäcken & Rosendahl 2021). Similarly, a qualitative study from Australia showed that social participation and community engagement are determinants of successful healthy ageing (Teh, Brown & Bryant 2020). However, there is a disagreement about the critical factor of participation, whether physical activity, employment (Loke, Lim & Senadjki 2020),

or social activity (Utomo et al. 2018). Yet, different aspects of participation (social, physical, employment, and learning) are critical to predicting active ageing in Southeast Asia. Participation is also the most popular determinant considered in the whole of the Southeast Asia reviewed countries, including Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

The health determinant of active ageing is mentioned in about half of the reviewed studies (47.62%). Health is described as both the personal health status of older adults and provided health services in old age. The elderly’s physical and mental health is also a critical determinant of active ageing (Castillo-Carandang et al. 2020; Gan et al. 2022; Wongsala, Anbäcken & Rosendahl 2021). Similarly, a longitudinal study conducted by Lee et al. (2020) found that elderly health status is a significant predictor of successful ageing. In addition, providing a reachable, affordable, diverse, and adequate range of health services is essential in health (Bhaktikul et al. 2019; Lai et al. 2016). Therefore, providing good health services and community service contributes to older adults’ healthy status to promote active ageing.

As a key determinant of active ageing, the perceived environment mentioned in many reviewed literatures (38.10%) is described as a well-designed, accessible neighbourhood and housing. The well-designed

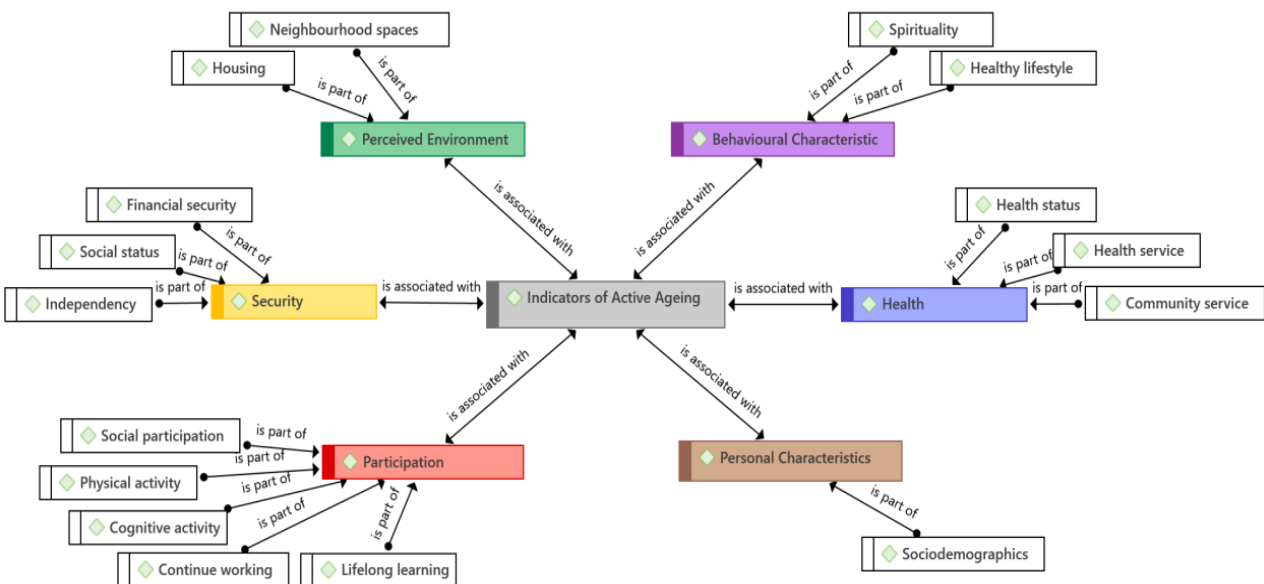


FIGURE 3. Potential indicators of active ageing in Southeast Asia and Malaysia

neighbourhood is included various characteristics such as easy access, walkable, safe and secure, sociable, attractive, clean, permeable, provides facilities and services (Elsawahli et al. 2017; Gan et al. 2022, Lai et al. 2016). The housing variable of the friendly perceived environment must indicate three aspects, physical, social, and spiritual (Jumadi et al. 2019). However, the spiritual aspects of built environment were noted in one study from Malaysia conducted by Jumadi et al. (2019). This result might be due to the unique cultural background of the Malaysian community, which concerns religious activity (altar or prayer area) and the privacy aspect of housing. Security is reviewed in 33.33% of the selected studies as the primary determinant of active ageing in Southeast Asia. It is defined as the protection, respect and safety of older adults by addressing their financial security, social status, and independence (Feng & Straughan 2017; Tiraphat et al. 2021; Wongsala, Anbäcken & Rosendahl 2021). However, few studies indicated the security determinants of active ageing in Southeast Asia compared to those conducted in Western countries. This may be due to a lack of awareness of the sensitivity of this determinant.

The current study also reviewed the personal characteristics of older adults (23.81%) as critical determinants of active ageing in Southeast Asia (Lim & Thompson 2016; Subramaniam et al. 2019). Overall, the personal characteristics refer to the sociodemographic characteristics of older adults. People from different sociodemographic backgrounds might have different health, social, and security levels, thus having different levels of active ageing (Subramaniam et al. 2019). Although personal characteristics are mentioned in only five studies; however, it is the most popular determinant considered in the whole of the Southeast Asia reviewed countries, along with the participation determinant. In addition, behavioural aspects of older adults, such as their lifestyle and spirituality, are evaluated in a few studies (14.29%) as predictors of active ageing (de la Vega et al. 2020; Lim & Thompson 2016). However, it is the less represented determinate of active ageing in the reviewed studies. Yet, active ageing is defined by various behavioural aspects, such as emotional vitality and spirituality (Lee et al. 2020).

Overall, the six determinants of healthy ageing in seven Southeast Asian countries predict active ageing indicators. The current review found a great diversity of active ageing indicator items included in the existing literature from Southeast Asia. The self-

administered questionnaire was the primary approach of measurement found in this review. The most popular determinant considered in the whole of the review countries is participation and personal characteristics in seven countries each, followed by health (six countries), security and behavioural aspects (six countries each), and perceived environment (five countries).

In future studies, a comprehensive empirical study including the whole indicators of active ageing is required to contribute to a new broad perspective of active ageing in Southeast Asia (Tiraphat et al. 2021). Although some studies indicate the active ageing determinants in Southeast Asia, these studies lack comprehensiveness in their framework. Behavioural, personal, and environmental (housing) characteristics must be included and given equal weight in future studies. Cross-sectional studies are also recommended to have the different aspects of the five determinants of active ageing. The limitations of this review are; first, all the studies reviewed were written in English. The authors excluded the investigations written in other (Asian) languages. Second, the authors included only the research studies and excluded the policy papers and governmental documentation.

CONCLUSIONS

The current review provided a broad, comprehensive scoping review over the last 20 years of the successful ageing determinants in the Southeast Asian region to predict active ageing indicators. The current study showed that literature from Southeast Asia became interested in active ageing and its indicators just ten years ago. The primary predicted indicator of active ageing is participation, represented in a wide range of variables, including participation in social, physical, cognitive, labour, volunteer, and lifelong learning activities. Various variables of health (health services and health status), perceived environment (neighbourhoods and housing), security (financial security, social status, and independency), behavioural (spirituality and lifestyle), and personal demographic characteristics are also potential indicators of active ageing in Southeast Asia and Malaysia.

Participation and demographic characteristics are the most popular determinants investigated in the Southeast Asia reviewed countries. Regardless of the instruments, the six determinants provided in the current review could predict active ageing in

Southeast Asia that contributes to the elderly's quality of life. Therefore, this scoping review contributes to understanding comprehensive indicators of active ageing.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the Ministry of Higher Education, Malaysia for funding the Development of Active Ageing Index Malaysia project (FRGS/1/2019/SS06/UPM/01/1).

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