



## Successful aging as a multidimensional concept: An integrative review

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### Abstract

**Background:** Successful aging as an umbrella term with a large amount of literature has emerged with a variety of meanings and dimensions in different studies. This article aims at determining what dimensions contribute to constructing the concept of successful aging.

**Methods:** The method used in this study is an integrative review of published literature related to successful aging. This method includes both qualitative and quantitative studies. Data searching was conducted during November and December 2014 and was then updated in October 2015. First, 2543 articles were identified, and after the screening phase, 76 articles were eligible for inclusion in the integrative review.

**Results:** The results specified 14 subcategories and 5 main categories of successful aging: social well-being, psychological well-being, physical health, spirituality and transcendence, and environment and economic security.

**Conclusion:** The present study provides a thorough understanding of successful aging dimensions and proposes the importance of the multidimensional concept of successful aging at the individual, interpersonal, and environmental levels for future studies and policymaking on population aging.

**Keywords:** Successful aging, Integrative review, Multidimensional, Well-being

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### Introduction

The public and academic attention given to aging was increased significantly at the beginning of the 21st century due to the increase of life expectancy and population aging in most countries. Based on United Nations projection (2015), the number of people aged 60 years or over would grow by 56% from 901 million (12.3% of the total population) in 2015 to 1.4 billion (16.5% of the total population) by 2030 in the world. Hence, the term “successful aging” emerged in the literature to describe the notion of aging well.

Successful aging as an umbrella term overlaps with a

variety of concepts such as positive aging, aging well, productive aging, and healthy aging. One of the fundamental issues underlying the debate is how successful aging should be defined by objective criteria or is it a subjective value judgment (1). Some researchers suggested that the concept of successful aging (SA) was introduced by Harvighurst as maximum satisfaction in the 1960s (2). Some others mentioned Cicero, and in gerontology Cumming and Henry (1961) (1). In 1997, Rowe and Kahn suggested successful aging as avoiding disease and disability, high cognitive and physical functioning, and engagement

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#### ↑What is “already known” in this topic:

Despite a large literature on successful aging, there is no general agreement on the dimensions of successful aging.

#### →What this article adds:

The concept of successful aging consists of 5 main categories: social well-being, psychological well-being, physical health, spirituality and transcendence, and environment and economic security. A comprehensive understanding of successful aging can be used in future studies, interventions, and policymaking to promote aging well.

with life (3). Following the Rowe and Kahn definition and framework, MacArthur studies started as a large attempt to study objective successful aging and distinguish successful agers using physical and cognitive cut-off scores (4, 5). Another popular model of successful aging is the SOC model, which was introduced by Baltes and Baltes to demonstrate how older adults adjust to aging. They stated that success is an individual development comprising 3 main components: selection, optimization, and compensation (6, 7).

Nonetheless, in reality, many of the old people imagine themselves as successful agers despite their disability and health problems such as diabetes or hypertension (8, 9). Thus, successful aging includes other dimensions (10, 11). Also, the cross-cultural perspective of successful aging has an important role in the definition of successful aging conceptual framework (9, 12). More models of successful aging have been explored by both quantitative (13-17) and qualitative (18-22) research designs. Also, in recent years, some new terms have been suggested for successful aging such as gerotranscendence (23) and harmonious aging (24). Despite a large literature on successful aging, some of the researches have mentioned that there is no general agreement on the dimensions of successful aging (11). Therefore, this article aimed at exploring the dimensions of successful aging using an integrative study.

**Methods**

The method used in this study was an integrative review of published articles related to successful aging. This methodology is the broadest type of research review method and allows concurrent inclusion of quantitative and qualitative research to allow a fuller understanding of a phenomenon of concern (successful aging). Integrative reviews may also merge/synthesize data from theoretical and empirical studies (25). Whittemore and Knafl (2005) introduced an integrative approach framework consisting

of 5 stages including problem identification, literature search, data evaluation, data analysis (results), and presentation (conclusion) to enhance the accuracy of the process when conducting an integrative review. The data from successful aging reviews were coded, categorized, and compiled into the matrix.

• *Problem identification*

Although aging is a natural process in our life, individuals can become involved in creating a successful aging process rather than the passive experience of later life. Thus, a discussion about successful aging converges with the search for factors and conditions that help us to understand the potential of aging, and if desirable, to identify ways to modify the nature of human aging as it exists today (6). The focus of this study was to answer the following question: What dimensions contribute to constructing the concept of successful aging?

• *Literature search*

The second stage of an integrative review is a literature search. Data searches were conducted during November and December 2014, and then updated in October 2015. A comprehensive search was conducted using the following electronic databases: ProQuest, EBSCO, JSTOR, PubMed, ISI, and Scopus. The keyword “successful\* aging” was used with both spellings of ageing and aging.

The inclusion criteria for the study were the term “Successful aging” in the title with the aforementioned spellings and abstracts including terms such as “model\*,” “definition,” “theory\*,” “structure\*,” “dimension\*,” and “perception”; the full-text articles were available and to prevent overlapping, we excluded other phrases such as healthy aging and aging well.

• *Data evaluation*

This integrative study aimed at exploring the current knowledge about the dimensions of successful aging. Thus, in the screening, articles that explained just 1 specific dimension of successful aging such as medical factors,

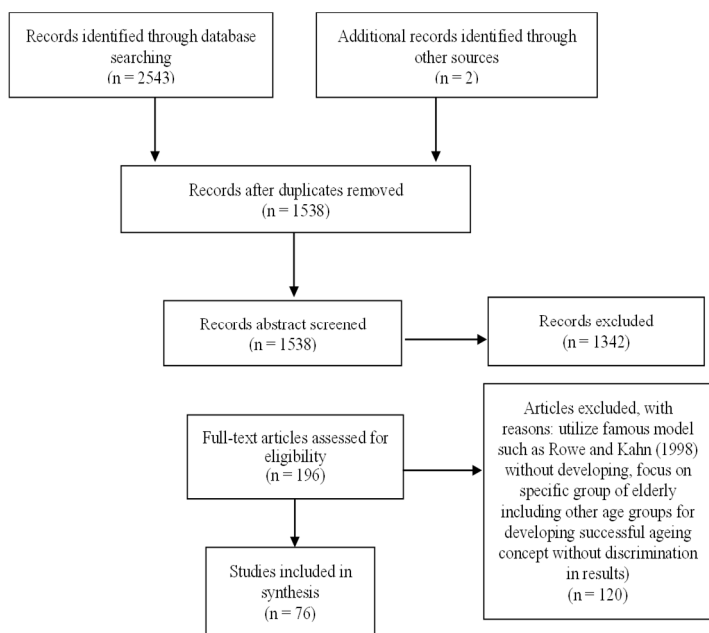


Fig. 1. The number of identified and included articles in the study

or those that focused on a specific group of older adults such as the elderly with chronic diseases or depression were excluded from the study. Moreover, studies that included young people's perception of constructing the concept of successful aging were excluded. Fig. 1 demonstrates the number of identified and included articles in this study.

In the data search, 2543 articles were initially identified, and after screening, 76 articles were eligible for inclusion in the study. A total of 34 articles used quantitative or mixed methods and 42 studies used qualitative methods or a literature review.

## Results

In this study, a matrix was developed by the authors outlining the year, country, population, and dimension of successful aging (Tables A and B in the Appendix). The articles included in the study were published between 1960 and 2015, and most of them had been conducted in the recent years. The most frequent articles in the field of successful aging were conducted in the United States. Many of the quantitative articles employed survey or second data analysis and follow-up methods. Although quantitative studies place more emphasis on physical/mental health and social engagement, in qualitative researches the

Table 1. Dimensions of successful aging extracted from integrative review

| Main categories           | Subcategories                     | Codes  | Meaning summary  |   |
|---------------------------|-----------------------------------|--|--|---|
| Social well-being         | Social presence & interaction     | Close relationship with others   | Family relationship, a network of friends and family, intergenerational relationship, doing some activities with family  |   |
|                           |                                   | Social activity  | Productive activity or job, volunteer activity, social teaching, self-employment, participating in public activity   |   |
|                           | Social support                    | Recreation   | Traveling, creative activities, having variety of hobbies  |   |
|                           |                                   | Not lonely   | Having a partner, wife/husband for close relationship and engagement   |   |
|                           |                                   | Social support from family   | Having a friend for speaking to or traveling, emotional and financial support from family, visiting family   |   |
|                           |                                   | Social support from governments  | Social welfare policy for older adults, sufficient healthcare system, facilitation of social role and productive activity for older adults, sufficient pension, and insurance                    |   |
|                           | Psychological well-being          | Individual positive characteristics and capabilities   | Happiness  | Being full of energy and happy, joyful  |
|                           |                                   |  | Having purpose/plan and hope   | Being hopeful, having aims for the future   |
|                           |                                   |  | Positive mood  | Generous, curious, sense of humor, other positive characteristics based on culture  |
|                           |                                   |  | Being useful   | No feeling of worthlessness, being productive, feeling of usefulness  |
| Good appearance           |                                   |  | Good figure, being stylish   |   |
| Self-acceptance           |                                   |  | Good feeling about his/herself, self-confidence, feeling of being useful,  |   |
| Self-efficacy             |                                   |  | Ability for self-care, ability to avoid risk factors, ability to recover from disease  |   |
| Mastery                   |                                   |  | Ability to change environment in his/her interest, ability to do complex activity in life and family, ability to change or select property environment for his/her physical or mental limitation |   |
| Maintaining balance       |                                   |  | Balance between opportunity and challenges, selection of alternatives, compensation, balance between body and mind, balance between aspirations and goals achieved                               |   |
| Coping and resilience     |                                   |  | Ability to face life problems and challenges, avoiding running away from problems, adoption of aging limitations, avoiding the wrong solutions   |   |
| Physical health           | Lifespan satisfaction             | Continuity in learning   | Learning new things, attempting to improve knowledge, attention to development in later life   |   |
|                           |                                   | Satisfaction with past life  | Acceptance of past life, good job, good memories from the past, satisfaction, and getting over bad memories such as war  |   |
|                           | Positive self-perception of aging | life satisfaction  | Satisfaction with whole life, satisfaction with partner  |   |
|                           |                                   | Acceptance of the natural process of aging   | Acceptance of transition and changes from aging, acceptance of decline   |   |
|                           | Absence of mental illness         | Positive perception towards aging  | Acceptance of positive points of aging, good self-image, without any bad image such as frail elderly   |   |
|                           |                                   | No depression  | No signs of depression, such as withdrawal, feelings of worthlessness and being useless, despair   |   |
|                           |                                   | No cognitive impairment  | No signs or symptoms of Alzheimer's and Parkinson suspicion of having attention problems, no language impairment   |   |
|                           |                                   | No stress or phobia  | Anorexia or stress eating, fear of the death of someone close, feeling guilty  |   |
|                           | Functional health                 | Good physical health   | No pain, no feeling of fatigue and feeling healthy and well  |   |
|                           |                                   |  | The absence of various diseases  | No symptoms of disease such as heart disease, heart attack, diabetes, cancer, emphysema, osteoporosis, asthma, hypertension, obesity, cardiovascular disease, lung disease, Parkinson's disease |
| Avoidance of risk factors |                                   | No smoking, eating Mediterranean diet, physical fitness and doing exercises such as stretching |  |   |
|                           |                                   | Doing daily living activities  | Doing personal activities such as taking a shower, ability to make phone call, shopping, climbing stairs   |   |
| Longevity                 | The absence of disability         | No hearing, visual, or physical impairment   |  |   |
|                           |                                   | Living to more than 80 or 85 years old   |  |   |

Table 1. Cntd

|   |   |   |   |
|---|---|---|---|
| Spirituality and transcendence  | Spirituality                                  |   | Feeling of inner peace, being thankful, being religious, accepting a superior power, having beliefs       |
|   | Gerotranscendence                             | Self-transcendence  | Rationality, self-recognition, decrease of self-orientation   |
| Environment and economic security   | Appropriate context and environmental amenity | Ontology  | Feeling of being part of world, part of life cycle, change of viewpoint on the world                      |
|   |   | Acceptance of death   | Reduction of stress from death, change of viewpoint on death  |
|   |   | Solitude  | Thinking about secret of life and relation with ancestors   |
|   | Financial and economic security               | Favorite living neighborhood  | Feeling of social security for walking in neighborhood, good accommodation with sufficient heat and light |
| Accommodation in the good zone of the city living in a good environment with accessibility to healthcare system age-friendly city |   | Nice weather, clean water, having sufficient garbage disposal system                              |   |
|   |   | Absence of negative image of elderly in media avoids marginalizing the social role of the elderly | Near to hospital, proper transportation to healthcare system  |
|   |   | Absence of negative stereotype in society   |   |
|   |   | Satisfaction with financial resources, sufficient pension, or assets and having a home            |   |

theme of satisfaction with life is more common.

During data analysis, dimensions of successful aging concept in the articles were coded and categorized. The results are presented as codes, subcategories, and main categories in Table 1. The dimensions are summarized in the matrix and include 14 subcategories and 5 main categories: physical health, social well-being, psychological well-being, spirituality, and environment and economic security.

1) Physical health

The main category of physical health includes 3 subcategories: good physical health, avoidance of risk factors, and functional health. An assessment of physical health is frequently performed in most studies on successful aging, particularly in quantitative research. Researchers of aging explore both self-rated health and the disease history of older adults (16, 26). Physical health assessment in the considerations is named as an objective (1) or medical dimension (27). Avoidance of risk factor is another subcategory related to healthy behaviors such as a Mediterranean diet and exercise (26). Moreover, in the qualitative studies, older adults indicated that avoidance of risk factor was an important dimension of aging well (22). Functional health is another significant factor of successful aging that indicates the ability to do daily activities (28, 29). Longevity was mentioned in some studies, but recently some studies mentioned that quality of life is more significant than longevity (9, 30, 31).

2) Psychological well-being

The main category of psychological well-being included 4 subcategories: absence of mental illness, individual positive characteristics and capabilities, lifespan satisfaction, and positive self-perception of aging. Absence of mental illness is one of the most important subcategories and has usually been studied in the absence of depression and dementia (15, 32). Individual positive characteristics and capabilities is one of the subcategories, which contains a variety of initial codes such as mastery, self-acceptance, happiness, having an aim and purpose in life, and being in a positive mood (14, 20, 21, 33). It seems that the codes of this category are flexible in different cultural contexts. Lifespan satisfaction is one of the subcate-

gories interwoven with successful aging from Havighurst's efforts to conceptualize successful aging. Satisfaction of the elderly is not only related to their present life but also to memories and past life (34). The codes that construct the positive self-perception of aging subcategory emerged from qualitative studies that revealed older adults with a positive aging perception accepted the natural cycle of life and aging but tried to feel young at heart (19, 35).

3) Social well-being

Social well-being is another main category and is based on 2 subcategories: presence in the society/community and having social support. Presence in the society means having a close relationship with others, doing social activities, and engaging in recreation (19, 30, 36). Social support is defined at 3 levels: individual (e.g., not being lonely), family (e.g., emotional or instrumental support), and government (e.g., social welfare policy for the elderly). Family social support is an important element and provides a buffer against depression and stress in later life.

4) Spirituality and transcendence

Spirituality and transcendence is one of the latest dimensions of successful aging in the literature. Spirituality is defined as having beliefs or accepting a higher power and being thankful (9). Crowther et al. (37) revised Rowe and Kahn's model of successful aging and added spirituality as the fourth dimension of successful aging. Gerotranscendence is the second subcategory that emerges in the successful aging literature as a new and partly complicated concept. Gerotranscendence includes factors such as self-transcendent, ontology, and accepts death and solitude. Gerotranscendence theory indicates that older adults transfer from a rational view to a more cosmic one in their third stage of life (23, 38).

5) Environment and economic security

The main category of environment and economic security indicates a good relationship between the elderly and external factors. The subcategory "appropriate context and environmental amenity" can be categorized at the neighborhood level as well as at macro levels such as living in an appropriate environment with nice weather, infrastructure facilities, and health systems (10, 27, 39). In successful aging literature, less attention is given to social con-



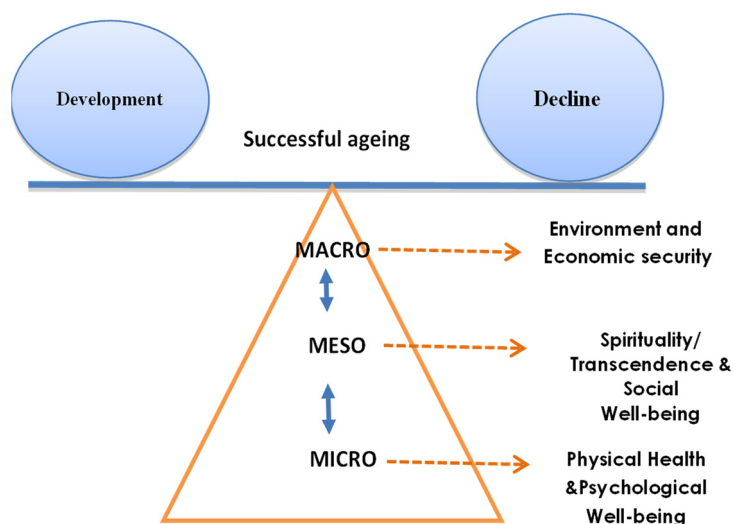


Fig. 2. Balance in "successful aging" concept

texts such as absence of negative stereotypes, which can shape a desirable living environment for the elderly (19). The last subcategory is financial sufficiency through pensions, governmental support, or individual property, which is known to be a basic need for aging well (40, 41).

### Discussion

This study aimed at exploring the dimensions of successful aging using an integrative review. The results revealed 5 main categories (social well-being, psychological well-being, physical health, spirituality and transcendence, and environment and economic security) and 14 subcategories for successful aging. According to the main categories and subcategories, the 4 following characteristics of successful aging concept are suggested:

**Multidimensional:** Successful aging is not a single-dimensional concept that only focuses on physical aspects, but it consists of social, psychological, spiritual/transcendent, and economic and environmental aspects. This is consistent with the existing literature on successful aging that emphasizes the multidimensional nature of successful aging (15, 42).

**Life course:** Successful aging does not emerge spontaneously in the third stage of life (late life). In fact, it is the fruit of the previous life stages. Aging successfully is based on the past life conditions of the elderly (6, 43).

**Multilevel:** The results showed successful aging to be a multilevel concept. The definition starts with an underlying individual level such as individual characteristics and continues to a higher level such as structural and environmental amenity. In other words, it covers many determinants at different levels from micro to macro levels of successful aging.

**Contextual:** The concept of successful aging is sensitive to culture. As Torres (1999) noted, the elderly have different viewpoints from a variety of cultures in the meaning of a good old age. While Chinese older adults define it in terms of how others view them, elderly Americans define successful aging in terms of how they view the world (44).

As Baltes (1987) emphasized in his theory of lifespan development, "Throughout life, development always consists of the joint occurrence of gain (growth) and loss (decline)." (45, p.616). With regard to the results of the present study, the concept of successful aging is constructed with individual and social elements. The elderly try to maintain a balance between losses such as physical decline and gains such as transcendence in their later life. The balance between development and decline is attained by having individual, social, and environmental resources. In other words, balance means having physical health and psychological well-being at the micro level, having social well-being, and spirituality/transcendence at the meso level, and living in an appropriate environment with economic security (Fig. 2)

Therefore, successful aging is a multidimensional and multilevel concept. As Bowling and Dieppe (2005) stated, "Achievement of successful aging in terms of all the criteria presented (here) is unrealistic for most people. However, successful aging needs to be viewed, not only multidimensionally, but as an ideal state to be aimed for, and the concept itself should be placed on a continuum of achievement rather than subject to simplistic normative assessments of success or failure." (8, p.1550).

### Conclusion

The present study clarifies the dimension of success in later life from among the huge body of literature on successful aging. Given the extent of this concept and the cultural nature of successful aging, there is no integrative definition of successful aging. In previous studies, the focus was on physical dimensions and less attention was given to the multidimensional approach. Recently, other dimensions of successful aging, particularly psychological aspects and other levels of successful aging including interpersonal and environmental dimensions, have been drawn to researchers' attention. The results of this study suggested the importance of successful aging at the individual, interpersonal, and environmental levels in the def-

inition of the multidimensional viewpoint of successful aging. Moreover, the findings of this study allow a thorough understanding of the dimensions of successful aging, which can be applied in future studies and interventions on older adults' well-being and policymaking on population aging.

### Conflict of Interests

The authors declare that they have no competing interests.

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Table A. Quantitative and mixed studies of successful aging

| No. | Author name & year of study | Type of study  | Population  | Country                    | Dimensions of successful aging   |
|-----|-----------------------------|--|---|----------------------------|--|
| 1   | Cho et al (2015)            | Sequential study (Structural equation modelling)                           | 375 centenarians (98+) and octogenarians(80-89 years old) | USA                        | Physical functioning, having no physical health impairment, education, past life experience, cognitive functioning, social resources, perceived economic status.   |
| 2   | Cheung and Lau(2015)        | Cross-sectional data analysis  | 120(95-108)   | China                      | Physical and functional health, Psychological well-being and cognition, Social engagement and family support, and Economic resources and financial security  |
| 3   | Cosco et al (2015)          | Population-based study   | 740(65+)  | UK                         | Physical functioning and cognitive Functioning, personal resources, engagement, and self-awareness   |
| 4   | Tyrovolas et al (2015)      | Survey (2005-2011)   | 2,663 older (aged 65-100 years old)                       | Greece                     | Education, financial status, physical activity status, BMI, psychological level, participation in social activities with friends and family, yearly excursions, the burden of CVD risk factors, and dietary habits   |
| 5   | Gasiorek(2015)              | Second data analysis(Latent class analysis across of two datasets          | 692(40-82 years old)                                      | New Zealand and USA        | Subjective approach (answer to questions: How successfully have you aged up to now? How well are you aging? How do you rate your life these days? I am happy with the age I am right now; at my age, I feel that life has much to offer, and I'm as happy at this stage of my life as I have been at other points in time)   |
| 6   | Feng et al(2015)            | Comparative study(longitudinal survey)                                     | 19,346(65+)   | China and Korea            | Free from major illness and disability, having no depressive or symptom, participating in social or productive activities, and being satisfied with life   |
| 7   | Tyrovolas et al(2014)       | Follow-up study  | 2663 elderly (aged 65–100 years old)                      | 21 Mediter-ranean Is-lands | Psychosocial economic factors(education, financial status, social activity with friends, Social activities with family, going to excursions, GDS score); Clinical characteristics factors(CVD risk score, Body mass index); Lifestyle characteristics factors(Med-Diet Score, Frequency of daily physical activities)  |
| 8   | Tovel and Carmel(2014)      | Cross-sectional study  | 262(75+)  | Israel                     | Subjective well-being measured by Positive Morale Scale ( Agitation, Attitude toward aging, Lonely, dissatisfaction), Life Satisfaction Scale(resolution, congruence, self-concept and mood tone) and Happiness Scale  |
| 9   | Li et al (2014)             | Population-based cross-sectional study                                     | 903(65+)  | Taiwan                     | SF-36 The SF-36 PCS and MCS scales (physical functioning, social functioning, role limitations due to physical problems, role limitations due to emotional problems, mental health, vitality, pain, and general perception of health   |
| 10  | Tate et al(2013)            | Content analysis from Manitoba Follow-up Study and Generalized Linear Mode | 2,043 men were alive at a mean age of 78 years in 1996    | Canada                     | Leisure activity and interests(activity/ interests/hobbies-specific; keeping active-nonspecific; pursuing interests-nonspecific; and performing mental activities), Happiness (content/satisfied/comfortable with self; reflecting on life; sense of humor/worth; sense of purpose; enjoying/having an interesting life; and knowing offspring are doing well), Attitude(positive attitude/being interested/looking ahead; having good fortune/who I am; don't think about aging; thinking young; being thankful; having virtues; having dignity; and less stress/worry), Health-General(being healthy, having few health problems, not having disabilities, absence of illness/sickness, and gradual deterioration), Physical Activity(keeping physically fit/working out; keeping physically active; participating in sports; and golfing), Relationships-Family(loving spouse and relationships with family), Coping, Adjustment, Acceptance, Being Productive, Contributing(Having goals/making plans; being productive/useful; contributing/helping family; contributing/helping friends; volunteering; and donating to charity), Living and Dying(not aging; staying alive; chronological; comparative; and die quickly), Life Experience(education/career; being retired; and having served in the war), Independence(autonomy; make own decisions; independent living; independent activities of daily living (IADL); basic activities of daily living (ADL); mobility; driving/flying; and financial security), Health-Physical(good physical health, no/minimal physical disease/impairment/disabilities, physical function(ability), and feeling healthy/energetic.), Relationships Companionship(companionship/ belonging; friendships/neighbours; and animal companionship), Adaptation(assistive devices; living one day at a time; moderation/accommodation; planning for future support/assistance; and receiving support when it is needed), Lifestyle(nutrition; no smoking/ drinking/drugs; smoking/drinking in moderation; and healthy lifestyle choices), Health-Cognitive(memory, mind, ability to communicate, and not having mental illness), Relationships-Society(keeping active socially and interest in/ties to the community/world), Spirituality, Health-System(health care provider, taking medication, and minimal/no health care required.), Quality of Life(good lifestyle and basic needs are provided), Relationships-Intimate |
| 11  | Hodge et al(2013)           | Cohort study   | 5512 older adults(70+)                                    | Australia                  | Who had survived to age 70 years, who at follow-up study reported none of: diabetes, heart attack, coronary artery bypass graft surgery, angioplasty, stroke, or had a cancer (excluding non-melanoma skin cancer), impairment, or perceived major difficulty with physical functioning(SF-12), without having any limitation in moderate activities (such as moving a table, pushing a vacuum cleaner, bowling, or playing golf), or having a lot of limitation in climbing several flights of stairs, no difficulty in using a telephone or perform the following instrumental activities of daily living: shopping, walking 200 m, getting out by car or public transport by themselves, going up stairs or doing heavy work around the house such as shovelling dirt or washing walls. Without psychological distress such as depression and anxiety(Kessler scale)  |

Table A. Cntd

|    |                          |  |  |             |  |
|----|--------------------------|--|--|-------------|--|
| 12 | Swift and Tate(2013)     | Manitoba Follow-up Study: thematic codes of an open question and correlation | 2043(74-88 years old)                            | Canada      | <p><u>Primary control proper</u>( Health care provider, Taking medication Education/career, Having served in the war Having/accomplishing goals/making plans, Assistive devices , Moderation/accommodation, Being productive/useful Contributing/helping family Contributing/helping friends, Volunteering Donating to charity, Keeping physically fit/working out, Keeping physically active, Participating in sports, Golfing, Activity/interests/hobbies, Keeping active, Pursuing interests, Performing mental activities, Healthy nutrition, No smoking/drinking/drugs, Smoking/drinking in moderation, Healthy lifestyle choices, Independence - autonomy, Independence - make own decisions, Independence — independent living, Independence - instrumental activities, Independence-basic activities, Independence — mobility, Independence - driving/flying, Independence - financial)</p> <p><u>Limited primary control</u>(Being healthy, Having few health problems, Absence of illness/sickness, Gradual deterioration, Good physical health, No/minimal physical disease/impairment, Physical functional ability, Feeling healthy/energetic, Memory, Mind Ability to communicate, Minimal/no health care required, Not aging, Staying alive, Comparative age, Being retired Good, lifestyle, Basic needs provided, Getting support when needed)</p> <p><u>Pertinent to primary control</u>(Not having disabilities, Not having mental illness, Reaching old age, Dying quickly)</p> <p><u>Secondary control proper</u>(Positive attitude, Having good fortune, Don't think about aging, Thinking young, Being thankful, Knowing offspring are doing well, Coping with personal stressors, Coping with family/friend's declining health/death, Adjusting to wife's/friend's declining health/death, Accepting changing body, Accepting the "natural progression" of life, Accepting wife's/friend's declining health/death, Loving spouse, Relationships with family, Companionship/belonging — non-specific, Friendships/neighbors, Animal companionship, Intimate relationships, Keeping active socially, Interest in/ties to the community/world, Being spiritual/having faith, Sense of purpose, Planning for future support/assistance, Sense of meaning and purpose)</p> <p><u>Limited secondary control</u>(Having virtues, Having dignity, Sense of humor/worth, Enjoying/having an interesting life, Less stress/worry, Content/satisfied/comfortable with self, Living one day at a time)</p> |
| 13 | Gwee et al (2013)        | Cross-sectional data analysis  | 489 community-dwelling (65+)                     | Singapore   | Self-rated SA on an analogue scale from 1 to 10 and five specific dimensions (physical health and function, mental well-being, social engagement, psychological well-being, and spirituality/religiosity)  |
| 14 | Jeon et al (2012)        | Cross-sectional data analysis  | 600 older adults (65+)                           | South Korea | Modified Rowe and Kahn model: self-reported health(Healthy habits, Subjective health, chronic diseases), social network(emotional support, instrumental support) physical-cognitive function, psychological trait(life satisfaction, self-efficacy), productive activity(hours of PA and Numbers of PA)  |
| 15 | Hilton et al(2012)       | multi-method approach  | 60 older Latinos (50+)                           | USA         | Quantitative results: highest and lowest rankings based on Phelan questions: act on inner standards, feel good about self, good health, cope with aging challenges, sense of peace about the end of life, friends and family support, no regrets, stay involved with world and others, able to work, longevity. Qualitative results: positive attitude, independence, good health, stay involved with life, social relationships/family, cognitive functioning, self-care, acceptance, financial well-being, spirituality/religion/transcendence   |
| 16 | Thielke and Diehr(2012)  | Population-based longitudinal study  | 5888 adults (65+)                                | USA         | Psychological, physical, cognitive, and functional status(not hospitalized, no bed days, life satisfaction, life as a whole, not depressed, no limitations in activities of daily living, no limitations in independent activities of daily living, intact extremity strength, Self-rated health, Intact cognition, Ability to ambulate, Frequent ambulation   |
| 17 | Lee et al (2011)         | Survey   | 312 participants aged 65+                        | Taiwan      | Physical(physical condition over the past two weeks), psychological(psychological symptoms of depression and stress), social support(personal interaction with others), leisure time(frequency of engaging in intense exercises or activities and frequency of out-of-town traveling during the past 12 months)  |
| 18 | Tan et al(2011)          | Survey (Phelan(2004)questionnaire used)                                      | Anglo-Australian and 116 Chinese-Australian(60+) | Australia   | Rated as an important aspect among both Chinese and Anglo-Australians: physical health and functioning, the absence of disability and disease, staying engaged with life, adjusting to changes, being able to make choices and having friends and family.  |
| 19 | Parslow et al (2011)     | Second data analysis   | 2286 elders(61 to 85 years old)                  | Australia   | Latent variable of successful aging: Self-assessed physical and mental Health(general health question), life satisfaction(Delighted– Terrible scale), and cognitive function(MMSE score)   |
| 20 | Bowling and Iliffe(2011) | Postal follow-up in 2007/8 of a 999 people                                   | 287 national random sample(65+)                  | UK          | Biomedical (having diagnosed, chronic medical conditions; ability to perform activities of daily living (ADL), psychiatric morbidity(GHQ-12)); Broader biomedical(number of different social activities engaged in during past month) Social functioning(number of different social activities engaged in during past month, frequency of social contacts, number of helpers/supporters); Psychological resources(self-efficacy, sense of purpose, playing useful part, coping, facing up to problems, overcoming difficulties; self-esteem, feels has self-confidence and has self-worth); Lay(gross annual income and perceived social capital, rating of area facilities transport, closeness to shops, services, area problems, crime, vandalism, graffiti, speed and volume of traffic, air quality, somewhere nice to go for a walk, feels safe walking alone during the day or night)   |
| 21 | Wang and Lin(2011)       | Cross-section national survey  | 1309(65+)  | Taiwan      | <u>Physical health</u> (self-rated health, self-reported ability to stand up), <u>mental health</u> (depression) <u>social/productive engagements</u> (having paid jobs, no. of weekly hours in paid work, no. of weekly hours in volunteer work, social support) <u>economic security</u> (current financial condition, economic sufficiency during retirement)   |
| 22 | Doyle et al(2010)        | Longitudinal study with follow-up data                                       | 3005 members aged 50+                            | UK          | Objective: avoidance of disease and related risk factors, maintenance of high function and sustained engagement with life Subjective: process of selection, optimization and compensation/confidence(optimal well-being as outcome)  |
| 23 | Pruchno et al (2010)     | Data analysis from a Panel study(2006 and 2008)                              | from 5,688 persons aged 50 – 74 years old        | USA         | Objective: functional ability, pain, number of diseases Subjective: aging well, life rating(self-rated)  |

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Table A. Cntd

|    |                            |   |   |                       |  |
|----|----------------------------|---|---|-----------------------|--|
| 24 | Hsu et al(2010)            | Secondary data analysis (modified Delphi method and analytical hierarchy process) | 23 city(4624 older adults)  | Taiwan                | Area-level indicators of Successful aging: <u>health status</u> (chronic disease prevalence, chronic disease screening, healthy aging), <u>health lifestyle</u> (smoking, drinking, chewing betel nuts, exercise, diet) <u>health care resources and utilization</u> (disease prevention and medical utilization, medical resources, long-term care resources) <u>social participation</u> (employment and productive activities, economic security, education, community development, volunteer) <u>social environment</u> (safety, infrastructure) <u>natural environment</u> (air, water, garbage disposal)   |
| 25 | Pin Ng et al(2009)         | Cross-sectional and longitudinal data analysis                                    | 1281 older adults(65+)  | Singapore             | Functioning and wellness: cognitive and affective status(MMSE and GDS), physical health(self-reported health and IADL), social functioning and engagement(the level of participation (often or at least once a week) engaging with at least one listed social or productive activities including social, recreational, civic activities, voluntary work, and paid employment or business, and domestic activities) and life satisfaction(self-reported of interest in life, happiness, loneliness, and general ease of living)   |
| 26 | Tate et al(2009)           | Manitoba Follow-up Study  | 734 Men older adults  | Canada                | <u>Health</u> (physical, mental, and cognitive health); <u>health behaviours</u> (physical and mental activity or interests including health care and lifestyle); <u>having life</u> (longevity, being alive, and resistance to aging); <u>productivity</u> (being useful, contributing, volunteering); <u>independence</u> (in mobility and self-care); <u>spirituality/faith</u> (in whatever way stated); <u>acceptance/adaptation</u> (including coping mechanisms); <u>social networks</u> (family/ friends, and social activity); <u>life experience</u> (earlier choices in occupations, education, and retirement to support quality of life)  |
| 27 | Jang et al(2009)           | Survey  | 1825 persons aged 65+   | The Republic of Korea | <u>Physical functioning</u> (chronic diseases and ADL scale), <u>mental functioning</u> (history of mental Disease and MMSE scale), <u>social functioning</u> (social activity participation per week) <u>subjective well-being</u> ( PGCMS scale)   |
| 28 | Kahng(2008)                | Second data analysis of Americans' Changing Lives (ACL) data                      | 683 older adults (65+)  | USA                   | <u>Physical health</u> (chronic health condition, functional health, physical health), <u>mental health</u> (depressive symptoms, cognitive impairment, self-efficacy), <u>engagement with life</u> (formal social integration, informal social integration, social support from friends and relatives)  |
| 29 | Bowling(2006)              | Second data analyses  | 854 older adults (50+)  | UK                    | Health and functioning; psychological factors; social roles and activities; financial and living circumstances; Social relationships; neighborhood/community; work; independence   |
| 30 | Li et al (2006)            | Cross-sectional   | 100000 older adults(65+)  | China                 | Chinese version of functional health (MMSE), activities of daily living (ADL), the Life Satisfaction (LSIA), functional social support (DUFSS), leisure activities, healthy behaviours, negative life events, health (SF-36)   |
| 31 | Hsu(2007)                  | Qualitative and quantitative method   | 720 elderly   | Taiwan                | physical health and independence(living without chronic disease), economic security, family and social support(living with family and receiving emotional care), engagement with life, spiritual well-being, and environment and social welfare policy   |
| 32 | Phelan et al (2004)        | Cross-sectional(mailed survey)  | 1985 Japanese American elders and 2581 white men and women (65+)              | USA                   | Physical health, functioning, psychological/mental health(perception of autonomy, control and coping), social health   |
| 33 | Tate et al (2003)          | The Manitoba Follow-up Study: content analysis and correlation                    | 3983(The mean age at entry was 31 after 50 years follow-up (a mean age of 78) | Canada                | Health and disease(good health or less pain, visits to physicians, and having check-ups), physical activity, keeping mentally active, Keeping socially, keeping active in general ( Keeping active (unspecified), keep busy, keep going, keep working), happy life or satisfying lifestyle ( Happiness, enjoy life, satisfying lifestyle, don't worry, retirement(quite work)), positive outlook on life or having a positive attitude(Positive outlook, attitude, interest in life), Having close and loving family and friends(Have a loving spouse, family, and friends), spiritual component, accepting growing old(growing old gracefully, peace of mind, tranquillity), Independence (being able to carry on, lead a normal life, make own decisions, mobile, do whatever you want, keep up responsibilities), Recognition of necessity for moderation (to decline gradually, limitations, adjust capabilities), A component encompassing mention of diet or eating (eating (includes all ingestible: smoking, drinking, vitamins), good appetite), having goals or challenges(travel), being financially secure, having hobbies or interests(having various interests, activities), being useful (volunteering, helping others, being productive), being content(having a sense of humor(laughing)), miscellaneous(staying alive) |
| 34 | Ford et al(2000)           | Followed up   | 602 older adults (70+)  | USA                   | Sustained Independence: receiving no help, in the form of either formal (paid) or informal (unpaid) service, with any of the personal or instrumental ADLs during the 2-year observation period(A total of 17 activities, including seven personal care tasks(feeding self, dressing, grooming, transferring, bathing, toileting and walking), seven instrumental activities(use of telephone, transportation, shopping, meal preparation, housework, taking medication and handling money), plus three self-designated, highly valued activities such as going to church or recreational activities, Visits to physicians and hospital admissions   |
| 35 | Strawbridge and e al(1996) | longitudinal study  | 356 older adults  | USA                   | Ability to do 13 basic physical activities: bathing, eating, dressing, grooming, using the toilet, walking across a room, transferring from bed to chair, shopping, cooking, doing housework, walking a half mile (0.8 km), walking up a flight of stairs, and having no problem getting where they needed to go. ability to do five physical performance activities: lifting or carrying weights over 10 pounds (4.54 kg); stooping, crouching, or kneeling; pushing or pulling a large object (like a living room chair); Lifting arms above the shoulders, and writing or handling small objects.   |

Table B. Qualitative and review studies of successful aging

| No. | Author name & year of study | Type of study                  | Population   | Country         | Dimensions of successful aging   |
|-----|-----------------------------|--------------------------------|--|-----------------|--|
| 1   | Chen(2015)                  | Constant comparative method    | 14 older female(60+)                               | Taiwan          | Being healthy, having no financial worries, maintaining connections with family and friends, contributing to society, and desiring a good death, not longevity   |
| 2   | Zolnikov(2015)              | Basic review                   | -  | USA             | Avoid disease and disability, optimal health activities, access to healthcare, healthy environment, engagement with life, high physical and cognitive function   |
| 3   | Sato-Komata et al(2015)     | Grounded theory                | 15(85+)  | Japan           | <u>Conflict over declining functions</u> (sensation of loss of physical and cognitive function, fear of one's inability to predict future decline, acceptance or denial of health condition, need to feel self-assured of one's health condition, realization of having aged compared to earlier years); <u>relationship with the aging body</u> (personal effort to maintain one's physical condition, essential medical treatment), <u>reflection on self</u> (gratitude, outlook toward living a long life, distinct views on objects, desiring few objects and goals); <u>reflection on daily life</u> (mundaneness of everyday life, economic factors of daily life, acceptance of daily life, objects to look forward); <u>reflection on society</u> (acknowledgment of the value of one's relationships, wish to be useful to society, interest in modern society); <u>reflection on life and preparation for death</u> (Reminiscence of life, Preparations for the future, ideal way of living, ideal way of dying)  |
| 4   | Nosraty et al(2015)         | Thematic analysis              | 45(90+)  | Finland         | <u>Death</u> (not being afraid of death, an easy death, a nice death, a painless death), <u>a balanced and harmonious life</u> (living in harmony, a rich life, a balanced life, a normal life, a happy life, living in peace), <u>independence</u> (physical independence, financial independence, autonomy and decision-making and self-mastery), <u>life circumstances</u> (Environment(a nice home and not being institutionalized), <u>a sense of security</u> , freedom from responsibilities, no transitions of care, not being alone) <u>physical</u> (Mobility: Ability to walk, <u>good mobility</u> , (good function activities: doing exercise and being physically active, health: good physical condition, not smoking, not having pain), <u>cognitive and psychological</u> (Mental health, absence of dementia, feeling good (mentally), absence of depression or cognitive problems, no painful memories, happiness and joy, preserving one's own personality, accepting reality, self-acceptance and self-contentment and focusing on the present, accepting others, a positive outlook and a positive attitude, tolerance, coping and adaptation and adjustment, maintaining an interest, humility, self-esteem, self-respect, satisfaction (with life), a calm personality, no arguments and conflict, being open and honest, peace of mind, not feeling loneliness, keeping up to date, learning new things and having a good memory) <u>social</u> (social network: family, friends, children, grandchildren, good neighbours, being surrounded by people and having company, having a partner and a good marriage, not being alone), <u>Social roles</u> (doing things for the family(taking care of grandchildren or a partner), helping others, being a member of an organization, having social interactions and relationships with others), <u>recreation and entertainment</u> (going out with others, having hobbies, keeping going, listening to music, visiting family) <u>Health</u> (health in general, health behaviour, physical fitness, mental health), <u>social resources</u> (care-related aspects, have social, feeling of social embeddedness/belonging resources, Social engagement/participation), <u>activities/interests</u> (activity without further specification, cognitive activities, work/job-related activities, sports, hobbies travel, culture/creativity, volunteering/unpaid engagement) <u>virtues/attitudes/beliefs</u> (positive attitude about life, acceptance, openness/curiosity, self-esteem, self-efficacy, be good to self, other psychological characteristics), <u>well-being</u> (well-being/satisfaction/happiness/fulfilment, enjoying life) <u>life management/ coping</u> (setting goals/having plans/planning for the future, realizing goals/working on tasks/starting new things, coping active or passive), financial resources(having money/wealth, financial security, retirement fund) <u>aging/age as a topic</u> (money/wealth not needed, acceptance of age/aging/death/dying, becoming old, thinking about/anticipating age/aging/ death/dying, remaining young, ignoring age/aging/death/dying) <u>independence</u> (independent without further, specification, autonomy, physical independence/mobility), <u>meaning in life</u> (religion, a life worth living) <u>growth/maturation, respect/status, respect/status, education/knowledge</u> (education, knowledge about life in general) <u>microenvironment</u> (environment (not further specified or Social, positive role models, family upbringing) <u>society/macro environment</u> (social policy (health/work/education retirement policy), policy/society (not further specified), <u>negative aging stereotypes, newspaper/TV</u> <u>Availability of support system</u> (supportive policies, culture, welfare facilities, family background and relationships, social interaction), <u>state of health, personal capabilities</u> (gained experiences, efficacy), <u>personality characteristics</u> (attitude, personal beliefs, temperament), <u>lifestyle</u> (life management, healthy lifestyle) |
| 5   | Jopp et al (2015)           | Qualitative approach           | 306(16+) and 91(60+)                               | USA and Germany | Positive perspective and coping, active independence, health, relationships with people, freedom, beneficial contribution, relationship with God, comfort resources  |
| 6   | Javadi et al(2015)          | Qualitative content analysis   | 16 women older adults(60+)                         | Iran            | <u>Biomedical</u> (physical functioning/disability, cognitive functioning/disability, affective status, presence/probability of disease, mental health, longevity); <u>psychosocial</u> ( personal resources, engagement, life satisfaction/well-being, support system, independence/ autonomy); <u>extrinsic factors</u> (environment/finances)   |
| 7   | Troutman(2014)              | Secondary qualitative analysis | 311 older adults (60+)                             | USA             | Meaning purpose in life: <u>gerotranscendence</u> (decreased death anxiety, meaningful activities, self-acceptance, relationships, solitude, wisdom) <u>spirituality</u> (spiritual Perspective, religiosity) <u>intrapyschic factors</u> (creativity, low level), negative affectivity, personal control), <u>functional performance mechanisms</u> (health promotion activities, physical health, physical mobility)   |
| 8   | Cosco et al(2014)           | Systematic review              | 84 quantitative studies and 26 qualitative studies | UK              | Chinese elders emphasized physical health and mobility, mental health, positive attitudes, shedding responsibilities, positive family relationships, financial stability, social engagement, religious faith, and accomplishments and volunteer work. Hmong elders emphasized physical health and mobility, mental health, harmonious relationships, positive family relationships, tangible family support, financial stability, social engagement, and religious faith   |
| 9   | Topaz et al(2014)           | Literature review              | 44 elders  | USA             | <u>Biomedical</u> (cognitive and mental, psychological health and functioning, health maintenance behavior, health and longevity); <u>external factors</u> (environmental factors, finance), <u>psychosocial</u> (engagement, perspective, self-awareness, independence, acceptance, quality of life, prevention and remediation, community, spirituality, social roles, maintenance, adjustment) <u>Transcendence</u> (relationships, creativity, introspection, contemplation, and spirituality)   |
| 10  | Nguyen & Seal 2014          | Qualitative approach           | 26 qualitative article                             | UK              | Themes: Self-respect through ability to keep fear of frailty at a distance<br>Categories: Having sufficient bodily resources for security and opportunities, structures that promote security and opportunities(satisfaction with one's financial situation, security and opportunities in the closest context, the health and well-being of close relatives and friends), feeling valuable in relation to the outside world(feeling noticed and appreciated in social relations, engagement in activities that provide pleasure or benefit), choosing gratitude instead of worries(choosing gratitude for not being as bad as others who are in a worse situation, denying difficulties, accepting things you cannot change)  |
| 11  | Cosco et al (2014)          | Systematic review              | 24 community-dwelling older (77-90 years old)      | Sweden          | maintaining physical, mental, and relational well-being; living a healthy life, and living a faithful life   |
| 12  | McCarthy and Bockweg(2013)  | Concept analysis               | 83 elders (60-94 years old)                        | USA             |  |
| 13  | Holder et al(2013)          | Qualitative content analysis   |  |                 |  |
| 14  | Cherry et al (2013)         | Grounded theory                |  |                 |  |

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Table B. Cntd

|    |                            |   |   |                        |  |
|----|----------------------------|---|---|------------------------|--|
| 15 | Troutman et al (2013)      | Focus group   | -   | USA                    | <u>Connecting and relating</u> (spirituality, friends and social life and spouse.), <u>temporality</u> (impressions of the past, family and history, and future generation), <u>perception and interpretation</u> (mental and cognitive and adjusting), <u>activity</u> (mobility, independence, exercise, and nutrition).   |
| 16 | Cosco et al(2013)          | Systematic review   | 103 Articles  | UK                     | <u>Physiological</u> (physical function/disability, cognitive function, illness/disease presence, health status, longevity, mental health), <u>well-being</u> (affective status, life-satisfaction/well-being), <u>engagement</u> (active life/social engagement, support system), <u>personal resources</u> (personal resources, independence/autonomy), <u>extrinsic factors</u> (environment/finances)  |
| 17 | Liang and Luo(2012)        | Literature review   | -   | USA                    | Harmonious aging includes: individual health, balanced outlook, inter-relationship, dialectic discourse(between challenge and opportunities, disengagement and activity)   |
| 18 | Craciun(2012)              | Thematic analysis   | 11 men and 11 women, aged 65 to 90 years old              | Romania                | Continuous learning process, planning for a future and accepting one's past and present  |
| 19 | Stordal et al(2012)        | Literature review   | -   | Sweden                 | <u>Biological and medical aspects</u> (disease and disability, genetic factors, brain characteristics, other basic biological factors), <u>psychological and social aspects</u> (lifestyle, self-rated health status, and SAE), <u>cognitive aspects</u> (cognition in usual aging, cognitive stability, )   |
| 20 | Marina and Ionas(2012)     | Literature review (without specified method)                          | -   | Romania                | satisfaction with life, self-acceptance, positive social, relationships, control over the own life, adaptation to life environment, sense of personal usefulness, personal development, social participation, subjective well-being  |
| 21 | Lewis(2011)                | Explanatory model(an inductive research)                              | 26 elders aged 61–93 years                                | Alaska                 | Emotional Well-Being, Community Engagement, Spirituality, Physical Health  |
| 22 | Troutman et al (2011)      | Grounded theory   | 99 elders(65+)  |                        | Independence/ability, health, mindset, activity/services, family, spirituality   |
| 23 | Iwamasa & Iwasaki(2011)    | Focus group   | 77 elders   | USA(Japonecas elderly) | <u>Physical</u> (health, exercise, activities, physical appearance, diet), <u>psychological</u> (positive affect and attitudes, maintenance of independence, willingness to change, openness to new experience, intrapersonal coping), <u>social</u> (social support/social network, recreation and entertainment, social learning, social roles), <u>social roles</u> (using one's mind, education), <u>spirituality</u> (religion, internal peace, faith, altruistic behaviour, appreciation), <u>financial</u> (monetary value, financial security)   |
| 24 | Reichstadt et al(2010)     | Qualitative approach(coding consensus, co-occurrence, and comparison) | 66 elders   | USA                    | Self-acceptance and self-contentment(realistic self-appraisal, a review of one's life, focusing on the present) engagement with life and self-growth(novel pursuits, giving to others, social interactions, positive attitude)   |
| 25 | Ferri and Pruchno (2009)   | Descriptive quantitative and qualitative                              | 53 older adults   | USA                    | Activity/exercise, physical health, social relationships, and psychological/cognitive health   |
| 26 | Young et al(2009)          | Literature review(and test on 1438 women age 65+ in another study)    |   | USA                    | <u>Physiological</u> (disease and impairment), <u>psychological</u> (emotional vitality), <u>sociological</u> (engaging with life and spirituality)  |
| 27 | Mortimer et al(2008)       | Thematic analyses   | 14 women aged(60-89)                                      | Australia              | <u>Personal agency</u> (adaptability, nature, health, life of the mind, finance, spiritual, and self-expression), <u>social value</u> (interpersonal, generativity, affiliations, value ), <u>quality of life/quality of death</u> (life quality, spirituality, death, autonomy, authenticity)   |
| 28 | Rossen et al (2008)        | Qualitative(Miles and Huberman's method)                              | 31 older women  | USA                    | <u>Acceptance</u> (physical change, relational change, environmental change), <u>engagement</u> (social, self-care), <u>compartment</u> (attributes toward life, demeanour toward others)  |
| 29 | Kanning & Schlicht(2008)   | Literature review   |   | Germany                | Bio-psycho-social model of SA with Subjective Well-being as a criterion of an SA process (Psychological need satisfaction, setting and pursuing personally valued goals, cognitive and emotional processes)  |
| 30 | Reichstadt and et al(2007) | Focus groups  | 12 focus group)six individual per group)                  | USA                    | Health and wellness, attitude and adaptation, security and stability, engagement and stimulation   |
| 31 | Nagaling (2007)            | Qualitative approach  | 32 older Indian adults(60-84 years old) and 10 informants | Singapore              | Financial resources, religiosity, purpose in life, life satisfaction, engagement with life, Leisure activities, volunteer work, health status, intergenerational, transfers & relationships, social support networks   |
| 32 | Bowling (2007)             | Systematic review   | 170 studies   | UK                     | <u>Social functioning</u> (social engagement, social roles, participation and activity, social contacts and exchanges, and/or positive relationships with others), <u>life satisfaction</u> (zest, resolution, fortitude, relationships between desired and achieved goals, self-concept and mood, including happiness), <u>psychological resource and medical</u> (possession of the resources of personal growth, creativity, self-efficacy, autonomy, independence, effective coping strategies, sense of purpose, self-acceptance, and self-worth, coping and self-concept)<br>From lay view: physical health and functioning; mental and cognitive health; psychological well-being and life satisfaction, including happiness; social relationships, support, activities and productivity; psychological resources, including personality, personal growth, accomplishments, sense of purpose, self-acceptance, coping, positive outlook, sense of humor; spirituality; lifestyles; neighborhood and financial circumstances and security  |
| 33 | Depp and Jeste(2006)       | Systematic review(quantitative articles)                              | 27 Articles   | US                     | <u>Disability/physical functioning</u> (clinician-rated disability, no impairment in daily activities, no more than a little difficulty in lifting weights, climbing stairs, good physical function); <u>Cognitive functioning</u> (no cognitive impairment, no delayed recall, normal orientation, absence of history of memory problem, no depressed mood, generally happy, contented and unworried), <u>Social/productive engagement</u> (contact with friends and relatives, participating in outside social activities, social support, role variety, occupational status, paid employment, caring for child, cleaning house, helping activity); <u>presence, illness</u> (absence of heart disease, stroke, diabetes, cancer, osteoporosis, emphysema, asthma, no smoking, hypertension, obesity, absence of cancer, cardiovascular disease, chronic obstructive pulmonary disease, Absence of coronary heart disease, stroke, cancer, diabetes, chronic obstructive pulmonary disease, Parkinson disease, number of health problems identified); <u>longevity</u> (living at age 85, survival to age 75); <u>self-rated health</u> (Good or excellent; Excellent to fair); <u>personality</u> (Extraversion, goal strength, Perceived control); <u>environment/finances</u> (financial security, Liking home environment, warm enough, no anxiety about intruders or going outside the home); <u>self-rated successful aging</u> (agreeing strongly to "I am aging successfully", scoring 7–10 on a 1- to 10-point scale) |

Table B. Cntd

|    |                               |   |  |           |  |
|----|-------------------------------|---|--|-----------|--|
| 34 | Bowling, and Dieppe(2005)     | Systematic literature review                      | 170 articles                               | UK        | Theoretical definitions: life expectancy, life satisfaction and wellbeing (includes happiness and contentment), mental and psychological health, cognitive function, personal growth, learning new things, physical health and functioning, independent functioning, psychological characteristics and resources, including perceived autonomy, control, independence, adaptability, coping, self-esteem, positive outlook, goals, sense of self, social community, leisure activities, integration and participation, social networks, support, participation, activity<br>Additional lay definitions: accomplishments, enjoyment of diet, financial security, neighborhood, physical appearance, productivity and contribution to life, sense of humor, sense of purpose, spirituality |
| 35 | Knight and Ricciardelli(2003) | Content analysis                                  | 60 older adults (ages of 70 and 101 years) | Australia | Health, Activity, Personal Growth, Happiness/ contentment, Relationships, Independence, Appreciation/ value of life, Longevity   |
| 36 | Baltes and Baltes (1990,2003) | Literature review (Test quantitatively among 244) | -  | Germany   | <u>Selection</u> (elective and loss-based concerns directionality of development including selection of alternative outcomes and goal structures)<br><u>Optimization</u> concerns(achieving desired outcomes (attaining higher levels of functioning))<br><u>Compensation</u> concerns(activation or acquisition of new means for counteracting loss/decline in means that threatens the maintenance of a given level of functioning)  |
| 37 | Crowther et al (2002)         | Literature review                                 | -  | USA       | Minimize risk and disability; engage in active life, maximize positive spirituality, maximize physical and mental ability  |
| 38 | Flood(2002)                   | Concept analysis                                  | -  | USA       | Life satisfaction, functional status, gerotranscendence, spirituality  |
| 39 | Rowe and Kahn (1997)          | Theory development                                | -  | USA       | Avoiding disease and disability, engagement with life, high cognitive and physical function  |
| 40 | Ryff(1989)                    | Literature review                                 | -  | USA       | Well-being (Self-Acceptance, Positive Relations with Others, Autonomy, Environmental Mastery, Purpose in Life, Personal Growth)  |
| 41 | Havighurst(1961)              | Literature review                                 | -  | USA       | Life satisfaction(Zest Vs. apathy; resolution and fortitude; goodness of fit between desired and achieved goals; positive self-concept; mood tone)   |

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