THE PSYCHOMETRIC PROPERTIES OF WORLD HEALTH ORGANIZATION QUALITY OF LIFE BRIEF ASSESSMENT IN MALAY (WHOQOL-BREF)

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by

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DECLARATION

, Siti Amirah Hanna binti Jafri Malin, certify that the content of this thesis is my original work except for relevant information and sources that have been directly referenced. I also declare that this thesis has not been submitted for any other assessment in any other institute.

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The Psychometric Properties of World Health Organization Quality of Life Brief Assessment in Malay (WHOQOL-BREF)

ABSTRACT

Introduction: The World Health Organization Quality of Life Brief (WHOQOL-BREF) (WHOQOL Group, 1998) was translated into the Bahasa Malaysia language by Hasanah, Naing and Rahman (2003) and has been widely used in Malaysia. However, the lack of generalisability of the sample population and the type of validity used in the previous study required an update in psychometric properties of this instrument. **Methodology:** This study sample comprised of 301 Malaysian adults who completed the original WHOQOL-BREF, the Malay WHOQOL-BREF and DASS-21 through SurveyMonkey. To establish the model fit of the translated instrument, Confirmatory Factor Analysis (CFA) using Maximum Likelihood estimation were run in SPSS version 26 and AMOS version 24 were used. **Results:** Through CFA, the original four-factor model showed a good model fit in the current study sample population, Chisq/df = 2.08, comparative fit index (CFI) = .93 and root mean square of error approximation (RMSEA) = .06. Construct reliability was established through composite reliability and average variance extracted (AVE) values. All four domains had composite reliability more than .60, which ranged from .79 (social relationship factor) to .88 (psychological health factor). All AVE values were above .50, except for Environmental factor. Convergent validity was established with significant positive relationships between all four domains and two items from the instrument that evaluates overall QoL and general health facet (p <.001). Divergent validity was established with significant negative correlations between all four factors and Depression Anxiety and Stress-21 (DASS21) (p <.001). However, only Social Relationships domain of the instrument showed good discriminant ability between healthy and non-healthy participants (p

= .04). **Conclusion:** The Malay WHOQOL-BREF showed appropriate model fit, reliable construct and convergent validity and good construct reliability. However, the instrument was unable to discriminate between healthy and non-healthy participants. Future research should discuss the findings in clinical samples with cautions.

Keywords: psychometric properties, WHOQOL BREF, Malay, quality of life, validity, reliability

Sifat – Sifat Psikometrik Soal Selidik Kualiti Hidup Organisasi Kesihatan Dunia (WHOQOLBREF) versi Bahasa Malaysia.

ABSTRAK

Pengenalan: Soal Selidik Kualiti Hidup Organisasi Kesihatan Dunia (WHOQOLBREF) (WHOQOL Group, 1998) telah di terjemahkan ke dalam Bahasa Malaysia pada 2003 oleh Hasanah, Naing dan Rahman dan telah digunakan secara meluas. Namun kekurangan kaji selidik terdahulu dalam memberi populasi sampel yang lebih besar dan jenis jenis kesahan telah membawa kepada fokus kajian ini iaitu untuk mengemaskini penterjemahan dan sifat-sifat psikometrik soal selidik WHOQOLBREF (WHOQOL Group, 1998). **Metodologi**: Seramai 301 peserta dewasa di Malaysia melengkapkan soal selidik WHOQOL-BREF asal dan yang diterjemahkan, soal selidik DASS21 melalui *SurveyMonkey*. Untuk menunjukkan bahawa model empat-faktor yang ditunjukkan dalam kajian asal merupakan model yang sesuai, faktor analisis pengesahan (CFA) menggunakan penganggar kemungkinan maksimum menggunakan perisian SPSS versi 26 dan AMOS versi 24 telah digunakan. **Keputusan**: CFA menunjukkan, model empat-faktor asal ialah model yang bagus untuk dalam sampel populasi kajian ini, Chisq/df = 2.08, comparative fit index (CFI) = .93 and root mean square of error approximation (RMSEA) = .06. Kebolehpercayaan konstruk disahkan menggunakan kebolehpercayaan komposit dan purata varians terekstrak (AVE). Keempat-empat faktor menunjukkan hasil kebolehpercayaan komposit melebihi .60 dan AVE melebihi .50, kecuali untuk faktor persekitaran. Kesahan konvergen disahkan melalui korelasi positif dan bererti diantara keempat-empat faktor dan item tahap kualiti hidup menyeluruh dan kesihatan umum (p <.001).. Kesahan divergen disahkan melalui korelasi negatif bererti diantara keempat-empat faktor dan instrument DASS21 (p <.001). Kesahan diskriminasi tidak tertubuh di instrument ini melalui

faktor perhubungan sosial. Sifat – Sifat Psikometrik Soal Selidik WHOQOLBREF (WHOQOL Group, 1998) versi Bahasa Malaysia telah ditubuhkan. Instrumen ini menunjukkan indeks kesepadanan model yang berpatutan, kesahan konstruk, konvergen dan divergen dan kebolehpercayaan konstruk yang bagus menjadikan ia satu instrument yang boleh dipercayaai dan berguna untuk mengukur tahap kualiti hidup. Bagaimanapun, instrumen ini tidak boleh mendiskriminasikan di antara peserta yang sihat dan yang mempunyai masalah kesihatan. Kajian dimasa hadapan perlu membincangkan dapatan kajian dalam kalangan klinikal dengan berhati-hati.

Kata kunci: Sifat Psikometrik, WHOQOL BREF, Melayu, kualiti hidup, kesahan, kebolehpercayaan

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LIST OF ABBREVIATIONS

QoL	Quality of Life
WHOQOL-BREF	World Health Organization Quality of Life Brief Assessment
CFA	Confirmatory Factor Analysis
RMSEA	Parsimony Correction Indices Using Root Mean Square Error
Of	Approximation
CFI	Comparative Fit Indices
AVE	Average Variances Extracted
COVID-19	Coronavirus

CHAPTER ONE: INTRODUCTION

This study aimed to establish psychometric properties of the Malay, World Health Organization Quality of Life Brief Assessment (WHOQOL-BREF) (WHOQOL Group, 1998) amongst Malaysian populations. This chapter briefly explains, amongst others, the problem statements, study rationale, research objectives, and hypotheses.

1.1 STUDY BACKGROUND

This study has two pertinent backgrounds. The first regards to the importance of assessing quality of life (QoL). Second, multiple assessment measuring QoL and, lastly, issues with available QoL measures.

1.1.1 The Importance of QoL Assessment

There is a critical need to continuously assess QoL. Clinically, QoL measures are sought to assess and incorporate patients' opinions on the influence of health and healthcare treatments on their lives into clinical decision making and research (Addington-Hall & Kalra, 2001) and often, QoL is the deciding factor in determining whether effective treatment for a life-threatening condition will be given or withdrawn (Pellegrino, 2000). Concurrently, QoL measures support objective clinical or biological measures of diseases in order to assess service quality, the need for health care, the efficacy of interventions, and cost utility analyses (Carr & Higginson, 2001, Moons, Budts, & De Geest, 2006).

Furthermore, measurements of QoL is not limited to health-related policy. QoL is tied with the idea of social well-being in mainstream economics, and has traditionally been primarily related to monetary considerations such as Gross Domestic Product GDP, price levels, and cost

of living (Lambiri, Biagi & Royuela, 2007). Ideally, people would want to live in a city with higher QoL and contributes to their wellbeing by providing safe environment, good accessibility and transportation and many others.

Diener and Seligman (2018) proposed that societies' well-being are imperative in cruising policymakers' decisions. Greater levels of subjective well-being are associated with being healthier, living longer, having a better social life, earning higher earnings, and being better citizens which in turn gives impact to the economy (Ibid). This can be achieved by continuous assessment and data publication regarding QoL from various department.

1.1.2 The Multiple Assessments Measuring QoL

Indubitably, QoL have helped researcher and clinicians to measure patients' subjective experience of life (Barcaccia, Esposito, Matarese, Bertolaso, Elvira & De Marinis, 2013). However, due to the complexity and ambiguity nature, previous attempts to consolidate the meaning of QoL often resulted in multiple definitions and measurements of QoL (Estoque, 2019). There are a wide range of QoL instruments available including Short Form-36 (SF-36), the Quality of Life Scale (QOLS) and EuroQoL targets physical aspect of QoL with little focus on other aspect of life (Aliot, Botto, Crijns and Kirchhof, 2014). Moreover, these instruments did not account for the subjective and individual perception of their condition. Hence, these instruments are more strongly influenced by physical condition of the individual (Ibid).

1.1.3 Issues With Available QoL Measurements

In Malaysia, the use of QoL assessment has not been standardized, although it is a growing field of research (Mohit, 2014). Available international QoL measures in the Malay language that have been validated are also limited. After literature research, there is only one

study that has reported the full psychometric analysis of the Malay WHOQOL-BREF (WHOQOL Group, 1998) in Malaysian populations (Hasanah, Naing & Rahman, 2003). Two other psychometric studies in Malaysia also did not include healthy Malaysian adults.

Abdullah Bandar, Jani and Karim (2013) used 127 disabled students in his study. Almost half of the participants had hearing impairment, 13.9% were visually impaired and the rest were physically impaired. Nevertheless, data from this study was not inclusive as it did not include data from healthy participants. Comparison between different groups in psychometric studies allow researcher to establish Known-Group validity (Bolarinwa, 2015) which will lead to the generalizability and representativeness of the measures from the sample to the target population (Ferguson, 2004). Therefore, by excluding healthy participants, there is no support for generalizability of the measurement in Malaysia.

Meanwhile, Abdullah (2014) attempted to measure validate the WHOQOL-BREF (WHOQOL Group, 1998) amongst Malaysian's youth who were aged between 15 and 40 years old. However, in 2019, the National Youth Development Policy amended their definition of the youth to the people aged 15 to 30 years old. This calls for an update and revision of data as the youth has been seen to take for responsibility in the current political and social situation. Investigating specific aspects of QoL in the youth would be beneficial for the country's future.

Since then, no other validation study has been published on the psychometric properties of the translated scale using healthy Malaysian adults. This is surprising because the WHOQOL-BREF is used as primary assessment tool in research to assess the QoL of Malaysians in the clinical (Baharom, Hassan, Ali & Shah, 2012, Iqbal et. al., 2020) and non-clinical settings (Al-Naggar, Osman, Musa, & Malaysia, 2013, Shaik, Hassan, Tan, & Gan, 2015). Thus, this study aimed to conduct a contemporary validation study as a continuing

process of establishing the utility of Malay WHOQOL-BREF (WHOQOL Group, 1998) among healthy and non-healthy Malaysians. The significance of this study is described in section 1.8.

1.2 PROBLEM STATEMENT AND STUDY RATIONALE

There are three problem statements have been identified in this section, followed by the rationales. First is concerned with the type of sample. The second is about the characteristics of the sample used in previous validation studies. The third is a lack of contemporary information about the psychometrics itself. The problem statements are described below.

1.2.1 Type of Sample Is Insufficient To Be Used As Reference Guide

The first problem statement identified in this study is that currently, the sampling type available was based on convenient sampling (Hasanah, Naing & Rahman, 2003, Abdullah Bandar, Jani and Karim, 2013, Abdullah, 2014). This is problematic for use as reference for clinicians. The previous study only collected participants from one state in Malaysia, which is in Kelantan (Hasanah, Naing & Rahman, 2003). This is not representative of the population as it did not use probability methods of sampling (Polit & Beck, 2010). This method of sampling needs a researcher to use probability or random chances in order to assume that every person in the population has an equal chance to be included in the study (Ibid).

Another concern related to the problematic sampling type is insufficient sample size. Hasanah, Naing, and Rahman's (2003) study had a sample of 200. Forty healthy participants and 40 participants in each hypertension, diabetes mellitus, epilepsy and schizophrenia group. The sample size for Abdullah Bandar, Jani and Karim's (2013) study was 281 and the study by Abdullah (2014) had a sample size of 435.

Based on a sample size calculation using Raosoft (2020), a minimum of 328 participants are required in the study for generalisation purposes. Two of the previous studies (Hasanah, Naing & Rahman, 2003, Abdullah Bandar, Jani and Karim, 2013) did not meet this requirement nor described the calculation process involved. When the minimum number of participants and calculation process are not provided in a study, findings need to be interpreted with cautions (Faber & Fonseca, 2010).

1.2.2 Characteristics of The Sample Used In Previous Validation Studies Are Not Generalizable

The second problem identified in the study is the characteristics of the sample used in previous validation studies. The previous study by Hasanah, Naing & Rahman (2003) only used four types of non-healthy populations (hypertensive, diabetic, schizophrenic and epileptic) which are not generalizable to other types of non-healthy populations. The Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) which is the standardized classification of mental disorders; have listed nearly 300 types of mental disorders that falls under categories of mood disorders, anxiety disorders, personality disorders, psychotic disorders, eating disorders, trauma-related disorders and substance abuse disorders. It is insufficient to use just one type of mental illness (schizophrenia) in a study and to generalize study findings to other mental disorders.

The range of clients' presenting symptoms or problems suggest a need to increase the heterogeneity of people in studies that seek to be generalisable to a wider and divergent population. The small sample used in the earlier Kelantanese study (Hasanah, Naing & Rahman, 2003) may have excluded groups of people with different ill-health conditions or co-morbidities. This is problematic because the norm reference assumes that new patients or clients

who will be assessed using the Malay WHOQOL-BREF have the same inclusion criteria where this may not be the case (Kalfoss, Reidunsdatter, Klöckner, & Nilsen, 2021). Subsequently, the interpretation of scores may be adverse to treatment or rehabilitation progress and success (Ibid).

Next, second validation study by Abdullah Bandar, Jani and Karim (2013) recruited disabled students in higher learning institutions. The researchers categorized the participants in hearing, visual and physical impairments although Persons with Disabilities (PWD) Act (2009) categorized seven group namely, Hearing, Visual, Speech, Physical, Learning, Mental and Multiple Disabilities or Impairments. However the issue in this study is the sampling method. This method leads to sample non-representation and biased data that are nongeneralizable to the population of interest. Therefore, results from this study should be interpreted with caution.

The last study by Abdullah (2014) aimed to establish psychometric properties of WHOQOL-BREF for the Malaysian youths. The researcher included participants between the age of 15 and 40 years old. However, the age range has been revised in 2019 by the Ministry of Youth and Sports (UNICEF, 2019). The current definition for youth in Malaysia is individual between 15 to 30 years old. The revision aimed to close generational gap, hasten maturity and lower risky behavior amongst the youth. Obsolete representation of the youth jeopardizes the interpretation of the findings from the study.

For example, there are clear developmental and psychosocial differences that people experience at different age stages of their life. One of the major differences is cognitive capacity, which is the individuals' ability to limit themselves when faced with emotional, exciting or risky stimulus (Icenogle et. al., 2019). Cognitive capacity also underpins logical thinking and psychosocial maturity of a person (Ibid). This significant change of age gap changes the validity of previous study's findings.

1.2.3 Lack of Contemporary Information Findings About the Psychometrics Makes It Questionable For Contemporary Clinical Usage.

Looking at the time frame of the previous two studies on the Malay WHOQOL- BREF (WHOQOL Group, 1998) which was in 2003, 2013 and 2014, it is more than timely to obtain contemporary information that is relevant to the present time, which includes the psychosocial impact of COVID 19 on people's QoL. In addition, as some issues have been raised with earlier validation studies, there is a need to generate more contemporary information findings about the psychometrics of the Malay WHOQOL- BREF (WHOQOL Group, 1998) to enable clinical usage (Khazi & Khalid, 2012, Jain, Dubey & Jain 2016). This instrument is beneficial for screening (McClane, 2006), rehabilitation (Ackerley, Gordon, Elston, Crawford & McPherson, 2009, Choi, 2020) and diagnosis usage (Silva, Santana, Silva, & Novaes, 2019). Without current and updated psychometrics, usage of the Malay WHOQOL-BREF in data collection is questionable (Truijens, Cornelis, Desmet, De Smet & Meganck, 2019).

1.3 STUDY RATIONALE

Based on the problems identified, the current study has a strong rationale for conducting the study. The rationale of the study is revision of items in the Malay WHOQOL-BREF (WHOQOL Group, 1998). Problems in the earlier Malay-language versions of this instrument have been ascertained. The language, terminology and structure of the Malay WHOQOL-BREF may not be valid.

This is because Dewan Bahasa Pustaka (DBP) has done periodic revisions to the Malay language with each edition of "Kamus Dewan" or dictionary. Due to this issue in linguistics, there is a need for a revision. For example, the word "banyakkah" (items 4 and 5) is not in DBP's (2005) dictionary and should be changed into a more contemporary and appropriate

word that is available in the dictionary. Another example, the word “kegelisahan” (Question 26, Appendix A), is not the translated word for anxiety according to DBP 4th edition (2005). Therefore, it is crucial to revise the words that are no longer relevant in the instrument to better reflect the meaning of the original English-language instrument.

On this matter, Angel (2013) and Im, et. al. (2017) both claim that language is one of the most important mediums to collect data. Specific changes and alterations significantly impact on how participants response to a survey (Angel, 2013, Im & Chee, 2021). Therefore, there is an urgent need to continuously update and validate any questionnaire that are adapted into a new language and culture (Ibid).

1.4 RESEARCH QUESTIONS

Based on the problem statements and study rationale, the current study has six research questions. The research questions guided the formulation of general and specific objectives. This section summarizes the research questions in the current study.

1. Do the English and Malay versions of WHOQOL-BREF have similar content and face validities?
2. Do the English and Malay versions of WHOQOL-BREF have similar internal reliability?
3. Do the English and Malay versions of WHOQOL-BREF have similar factor construct?
4. Do the test takers of the English and Malay versions of WHOQOL-BREF have similar scores in both instruments?
5. Will the Malay WHOQOL-BREF have convergent and divergent validities?
6. Can the Malay WHOQOL-BREF show discriminant validity between healthy and non-healthy populations?

1.5 OBJECTIVES

This section highlights the general and specific objectives of the current study. One general objective and five specific objectives are listed below. The objectives are then used in the formulation of hypotheses.

1.5.1 General Objective

The general objective of the current study is to determine the psychometric properties of the Malay WHOQOL-BREF questionnaire

1.5.2 Specific Objectives

The specific objectives were formulated based on the gaps in literature and is the expansion of the general objective. The specific objectives focus on the reliability and validity of the Malay WHOQOL-BREF. Listed below are the five specific objectives of the current study.

1. Determine internal consistency of the Malay WHOQOL-BREF
2. Determine the face and construct validities of the Malay WHOQOL-BREF
3. Determine the translational validity of the Malay WHOQOL-BREF
4. Generate the convergent validity of Malay WHOQOL-BREF with other measures
5. Generate the discriminant validity of Malay WHOQOL-BREF in healthy and non-healthy populations

1.6 HYPOTHESES

This section describes the hypotheses of the current study. The hypotheses were formulated based on the objectives mentioned above. Below are the relevant five hypotheses.

H01: There is a relationship between the original English WHOQOL-BREF and the Malay WHOQOL-BREF

H02: Each of the Malay WHOQOL-BREF domain scores are positively correlated indicating high internal consistency

H03: There are significant relationships between overall QoL score and general health score with each of the Malay WHOQOL-BREF domains indicating convergent validity

H04: There are significant negative relationships between the domains in the Malay WHOQOL-BREF and DASS-21indicating divergent validity

H05: There are significant differences between the healthy population and non-healthy populations using the Malay WHOQOL-BREF

1.7 DEFINITION OF TERMS

This section defines a number of terminologies that are used in the study. The brief definitions for QoL, reliability and validity are presented below.

1.7.1 Quality of Life

QoL has multitude of dimensions that can be in objective and subjective manners (Maricic, 2019). Objectively, the gross domestic product (GDP) has been a common measure of QOL across nations. Despite its importance, objective measurement needs to be complimented with subjective measures, in order to capture maximum details of human's life experience. Subjectively, QOL is embodied in individual's personal consciousness (Cummins, 2005). Furthermore, Cummins (2005) summarized that the conceptualization of QOL's principles are based on its multidimensionality and effect of personal and environmental factors, has same components for everyone, its objective and subjective components and

enhanced by self-determination, resources, life purposes and sense of belonging. All these conceptualizations are important in describing QOL in literatures and in research.

QoL is defined by the WHO as "individuals" perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (WHOQOL group, 1998). The definition was agreed upon between international QoL experts during the first phase of WHOQOL project to develop a sound QoL measures that can be used by health professionals and researchers. This definition highlights subjective experience of life and the importance of social and environment in determining one's QoL.

Similarly, Fry (2000) proposes that QoL is a subjective and personal experience that reflect his or her social-emotional health and medical and non-medical aspects of their lives and is the reflection of gap between real life and ideal life that people aspire to be. Psychologically, QoL can be explained from the individual's process of cognitive appraisal that reflects one's current life satisfaction that, consequently, affect QoL (Fry, 2000).

Barcaccia, et al. (2013) wrote elaborately how the changes in defining QoL across decades and across different population have affected the understanding of the concept of QoL itself. The lack of consensus about the meaning of QoL has resulted in ambiguous definitions and lead to difficulty in measuring QoL in population level. Nevertheless, most researchers agree that QoL is a subjective experience, based on individual's perception and it is multidimensional, that includes positive and negative aspect of life (Holmes, 2005).

1.7.2 Reliability

Reliability in measurement is the ability of an instrument to provide consistent, accurate and stable scores across different intervals or during one assessment (Cronbach, 1947). Reliability formula utilize error measurement and true score in the data to estimate different types of reliability (Cureton, 1958). Through test scores, the least amount of measure errors will provide proper guideline in decision making of the study outcome (Urbina, 2014).

1.7.3 Validity

Validity refers to the ability of an instrument to correctly measure specific theory of interest (Sirecci and Sukin, 2013). A valid test would produce scores that are accurate representation of appropriate models or theories (Newton, 2012). Other than reliability, validity is an important construct that should be taken in consideration when deciding which instrument to use in a study.

1.8 SIGNIFICANCE OF THE STUDY

To date, no studies have been conducted to revise the Malay WHOQOL-BREF (WHOQOL Group, 1998) and update the psychometric properties of the instrument amongst Malaysian. The results of the current study have the ability to contribute to the evaluation and measurement literature in QoL. The validation might be utilized by clinicians and researchers to assess QoL. Other than that, by establishing the psychometric properties, the use of QoL measures in Malaysia can be standardized. Standardization of QoL measures could reduce inconsistency of QoL data collection. Considered as a whole, the data can help policy makers to investigate domains of QoL and identify specific concerns in the particular population.

1.9 INTERIM SUMMARY

This chapter highlighted the background of the study. There is an urge to update the translation and the validation of the instrument as there are revisions in language. Described in section 1.2, there is a need to increase generalizability of the instrument and add to the increase the additional contemporary information about the Malay WHOQOL-BREF (WHOQOL Group, 1998). The next chapter is a review of the present study's literature.

CHAPTER TWO: LITERATURE REVIEW

This chapter discusses past literature relevant to the research. Discussions of theoretical framework, conceptual framework, recent updates on psychometrics of the Malay WHOQOL-BREF (WHOQOL Group, 1998), QoL factors are found therein. At the end of this chapter, gaps in knowledge are identified and described.

2.1 THEORETICAL FRAMEWORK

Multiple studies have theorise that there are several factors underlying QoL. Felce and Perry (1995) established that there are three QoL domains within five life conditions. Second theory from WHOQOL Group (1995) posited that QoL is a multidimensional construct with six main domains . Each of these theories are discussed below.

At the heart of Felce and Perry's theory are three major components of QoL and five life domains were established. According to the researchers, the major components, objective life conditions and subjective feelings of wellbeing on multiple life domains and personal values of those domains are constantly interacting and affecting each other (see Figure 2.1). The life domains theorized by the researchers were physical, material, social, productive emotional and civic wellbeing.

In addition, changes in a single component is plausible when external factors are in place. External factors varies from genetic to political variables. In other words, QoL exists within the realm of specific life domains and personal experience, individual's objective and subjective perception of that domains can be influenced by life's changes that are inevitable

and often, unexpected (e.g. aging, employment). The multidimensionality of QoL in this model were observed by interaction of multiple components within each life domains.

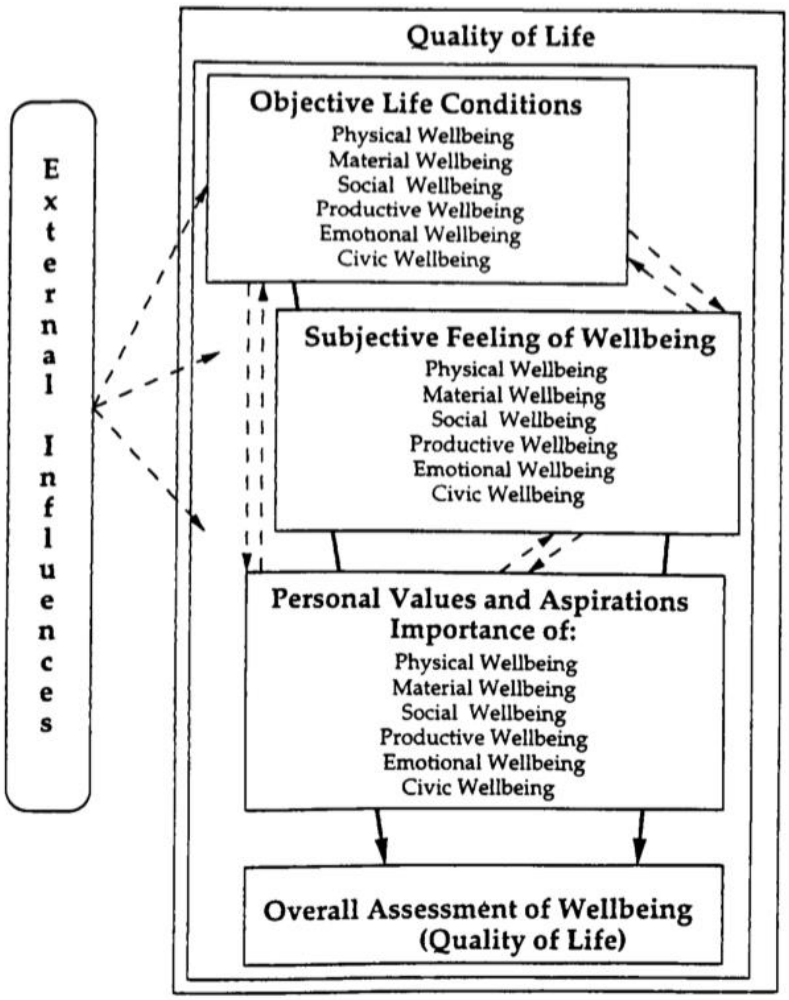

Figure 2.1 Quality of Life framework Felce and Perry (1995)

Second model by WHOQOL Group (1995) (see Figure 2.2) argued that there are six main domains of QoL and within these domains there are specific facets that are pertinent to QoL. The WHO QoL theory derived from its definition, where personal evaluation of QoL is confined within in cultural, social and environmental context. This theory focuses on how a person view their current life conditions in specific environment but did not extend beyond that.

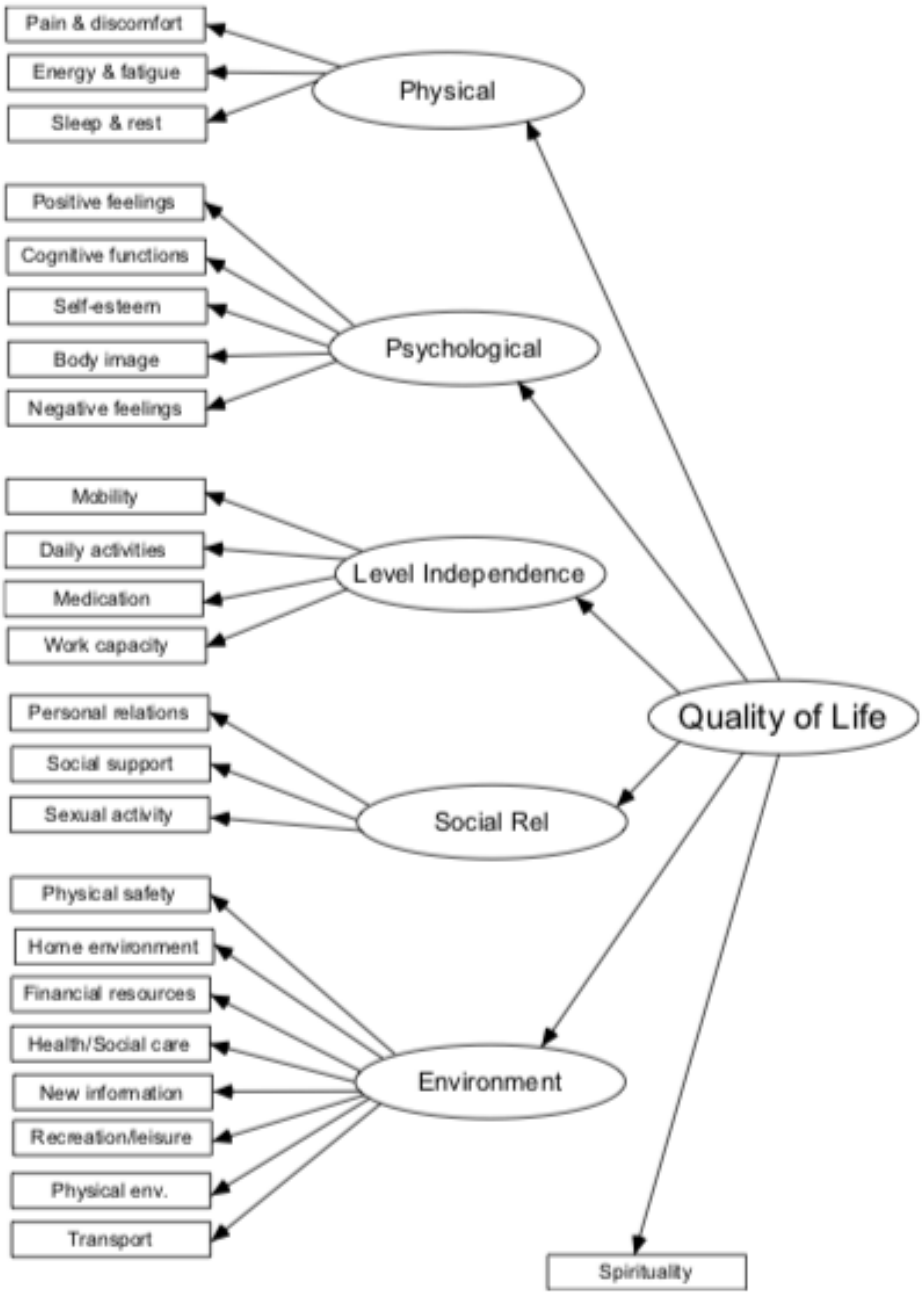

Figure 2.2 The WHOQOL framework

2.2 CONCEPTUAL FRAMEWORK

The current study will utilise the WHO Group (1998) QoL framework. However only four domains will be the focus of this current study. Figure 2.3 demonstrates that the QoL is a function of physical health, psychological health, social relations and environment. These domains are the primary contributors to overall QoL and should be integrated into the instrument measuring QoL. Similar domains were expected in this current study.

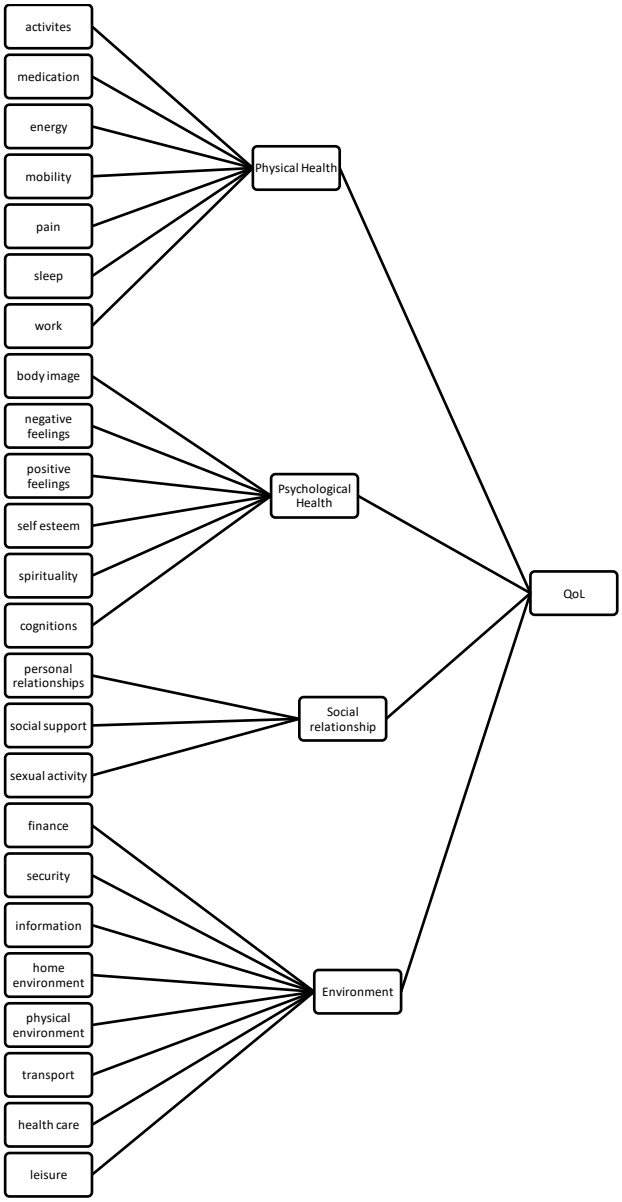

Figure 2.3 The current study domains adapted from WHO Group (1998)

2.3 THE RECENT UPDATE ON PSYCHOMETRIC PROPERTIES OF WHOQOL-BREF

Measuring QoL is a crucial step to research and policy making as it connects boundaries between multiple disciplines such as social, medical and psychological services (Centers for Disease Control and Prevention (CDC), 2019). However, lack of consensus among researchers on what constitutes QoL has led to differences in approaches in how to effectively measure QoL (Fry, 2000, Salamah, 2018) and is thus reflected in the items included in the measurements (Skevington, Lotfy, O'Connell, 2004, Salamah, 2018). These inconsistencies jeopardize QoL data collection and subsequently, the interpretation of those data in clinical settings, research areas and policy making (Skevington, Sartorius, & Amir, 2004, Skevington & McCrate, 2012).

Cognizant of that, the WHO (1998) developed a QoL assessment that encompasses multilevel and multidimensional domain of QoL which is cross-cultural and internationally accepted. After vigorous processes, the WHOQOL-100 (WHOQOL Group, 1998) and WHOQOL-BREF (WHOQOL Group, 1998) were established and have been reported as the most widely used QoL assessments in the world that can be used in healthy and ill populations (Skevington, Sartorius, & Amir, 2004). Using the WHOQOL-BREF (WHOQOL Group, 1998), Kalfoss, Reidunsdatter, Klöckner and Nilsen (2021) established the reliability and validity of the instrument among Norwegian adults. Satisfactory level of reliability, convergent and discriminatory validities were shown. However, Kalfoss et. al. (2021) did not find the four-factor model, as proposed in the original study but one-model factor showed a better fit. Similarly, Uddin and Islam (2019) recruited 2425 participants from Narail, Bangladesh and found one-factor model. Both studies administered translated version of the instrument and this could influence the construction of QoL domains.

Following this, a more complex outcome and interpretation could come from multilingual countries. The ability to understand multiple languages could influence comprehension and alter the instrument factor structure. For example, Price, Conteh and Esliker (2019) translated the instrument to Krio language, and conducted the study with 425 participants and found similar construct with the original instrument. Similar results were found in Swedish. A research by Rosen, Ahlstrom and Lexen (2020) using the Swedish WHOQOL-BREF (WHOQOL Group, 1998) found significant four-factor model. Participants in both countries are fluent in English and their native languages that leads to better interpretation of the questions.

In Malaysia, the use of QoL assessment has not been standardized as QoL assessment in a growing field of research (Mohit, 2014, Ainuddin, Ab Ghani, Dahlan & Ibrahim, 2016). Available international QoL measured in the Malay language that have been validated is also limited. After a literature research, there was only one study that reported the full psychometric analysis of the Malay WHOQOL-BREF (WHOQOL Group, 1998) in Malaysian populations (Hasanah, Naing & Rahman, 2003). That particular study was cited in research involving different populations including patients with cardiovascular diseases (CVD) (Iqbal, et. al., 2020) and cancer patients (Akhtari-Zavare, Mohd-Sidik, Periasamy, Rampal, Fadhilah, & Mahmud, 2018).

Iqbal et. al., (2020) investigated different aspects of QoL level in CVD patients who were prescribed Warfarin in Malaysia as part of their treatment program. This was the first research to include Warfarin and QoL using the Malay WHOQOL-BREF (WHOQOL Group, 1998). The study found that the psychological domain had the highest mean score, and lowest for physical domain. These results provided a direction of post-treatment or support group for

patients taking Warfarin in order to improve their QoL domains. Specifically, post-treatment targeting specific physical disabilities or discomfort.

Similarly, Akhtari-Zavare et. al. (2018) recruited 2120 cancer patients in ten government hospitals to assess QoL's determinants among cancer patient. Results indicated that treatment side effects, including nauseating, hair loss and bleeding, were the main determinants for QoL, followed by race, religion, cancer stage and treatment cycle. All domains of QoL were found to be the lowest in patients who had treatment side effects, Indian, Hindu religion, and were in advanced stage of cancer. These findings would be beneficial for clinicians in oncology medicine in Malaysia to create a specific program that caters to the cancer patients.

Based on the studies above, the use of Malay WHOQOL-BREF (WHOQOL Group, 1998) were significant in the clinical population. The questionnaire is the main tool for researchers to collect data and translate it to a useful and understandable data which will later help inform future research and aid clinician in making decisions. Scarcity of psychometric properties question the accuracy of the instrument and thus, continuous critical appraisal of an instrument is needed.

Although the above described the updated knowledge concerning the psychometric properties and usage of the Malay WHOQOL-BREF (WHOQOL Group, 1998), there remains areas in need of attention. Specifically, greater focus on determining factors that influence how individuals view their QoL. This current study aims to add to the updated knowledge on this instrument via producing a contemporary validation study as a continuing process of

establishing the utility of Malay WHOQOL-BREF (WHOQOL Group, 1998) among healthy and non-healthy Malaysians.

2.4 FACTORS OF QOL

Depending on whose model is referenced, there are many factors that underlie QoL. These factors range from x to xx factors. Utilizing the QoL concept developed by WHO (1998), there are four important factors that affect an individual's QoL. The factors are: physical health, psychological health, social relationships and environmental factors (Pukeliene & Starkauskiene, 2011, Sharma, & Purkayastha, 2017). These four factors are measured in this current study and are discussed below.

2.4.1 Physical Health

Generally, QoL are affected by physical, psychological, social and environmental health (Rahiminia, Rahiminia & Sharifirad, 2017, Hasanifar & Roustakhiz, 2020). Research that focuses on physical health, often assessed the subjective impact of disease and treatment on functional and physical well-being components (Rodríguez-Fernández, Zuazagoitia-Rey-Baltar, & Ramos-Díaz, 2017). Various research has been conducted to establish this relationship.

In line with physical health, physical activity is body movement that increases the metabolic rate of an person above the normal rate (Vuori, 1998). Physical activity has a direct relationship with physical health. Systematic review by Carson et. al (2017) revealed a significant impact of physical activity on motor and cognitive development, psychosocial and cardiometabolic health in children across 96 studies. A certain level of physical activity

intensity and spending more than 30 minutes per day were found to be beneficial in infancy (Ibid).

Other than that, studies have shown that physical activity is one of the protective factors for chronic diseases (Warburton & Bredin 2017; Winzer, Woitek & Linke, 2018) including ischemic heart disease (Schnohr, O'Keefe, Lange, Jensen, & Marott, 2017), stroke (Howard and McDonnell, 2015), and diabetes type 2 (Hamasaki, 2016) and in turn affect QoL (Gill et al., 2013; Diggins, Hearn, Lechner, Annane, Antoni & Whitehead, 2017).

However, with the recent worldwide pandemic, lockdown and social distancing, physical activity has been reduced and contained to a limited space and amount and consequently affect QoL (Slimani, Paravlic, Mbarek, Bragazzi & Tod, 2020). Reduced physical activity or sedentary lifestyles leads to a negative physical health including neuromuscular disease (Di Stefano, 2021), congenital heart disease (Hemphill, Kuan & Harris, 2020) and people with physical disabilities (Rhodes, Janssen, Bredin, Warburton, & Bauman, 2017). Failure to address this issue could affect the world's QoL as we go through the pandemic on top of existing stress and pressure of a fast-paced world.

Rodríguez-Fernández et al. (2017) found that patients who suffered acute ischemic cardio pathology (within the last three months) and had active physical lifestyles had significant higher overall well-being and satisfaction with lives than patients who did not engage in any physical activities. Specifically, of those who has an active physical lifestyle, engaging in activities more than three times a week significantly improved well-being and satisfaction with life (Ibid). Gill et al. (2013) had earlier revealed that physical activity not only affect physical aspect of QoL but emotional and social aspect as the by-product of community

and group activity done in their study. Therefore, physical health influences one's level of QoL and should be considered into the development of a relevant measurement.

2.4.2 Psychological Health

Psychological health encapsulates a wide range of concerns, which can be categorized under psychological functioning, emotional health, or good spirituality. This section summarises past research findings regarding each of these categories of psychological health and allude to their importance as salient factors in QoL.

2.4.2.1 Psychological functioning

Previous studies found that healthy psychological functioning contributes to a better QoL through multiple paths. One of the pathways is through self-compassion (Neff et. al., 2018). In a study with Japanese undergraduates, Miyagawa, Niiya and Taniguchi (2019) revealed significant positive relationship between self-compassion and adaptive views on failures and significant negative relationship with maladaptive views of failure. Specifically, students with higher level of self-compassion saw failures as learning opportunities and as part of life and less likely to feel that failures were aversive experience and should be avoided (Ibid). Hence, having self-compassion could improve psychological functioning during adverse time by being kinder and more compassionate towards self.

The findings above were supported by Waring and Kelly (2019) and additionally, found that the impact of self-compassion on failure were moderated by interpersonal context. People who experienced higher self-compassion coped better with failure when shared with other

people (Ibid). The relationship between self-compassion and psychological functioning further established in Rahmandani, Kahija and Salam's (2021) study. Self-compassion were found to have significant negative relationship with distress, social dysfunction, anxiety and depression symptoms and loss of confidence (Rahmandani, Kahija & Salam, 2021). The abovementioned studies established the importance of having a healthy psychological functioning in order to have better QoL through practicing self-compassion as it buffers the effect of adverse life events.

Another pathway to a healthy psychological functioning is through resiliency. Kocjan, Kavcic and Avsec's (2020) study revealed that resiliency significantly mediated personality and psychological functioning during COVID-19 among Slovene adults. Among Neuroticism, Agreeableness, Conscientiousness, Extraversion and Openness, only Extraversion did not have a strong relationship with high psychological functioning when mediated with resiliency (Ibid). Based on the finding, the presence of resiliency help people to adapt to their situation better, especially during unpredictable and difficult time. These studies proved that psychological functioning of an individual contributes to the psychological health through multiple factors, including self-esteem and resiliency,

2.4.2.2 Emotional health

One of the contributors to psychological health is positive emotion. According to Xu and Roberts (2010), it influences one's social interaction, creativity, attention span and overall healthier behaviors. Also, Xu and Roberts (2010) found that positive emotions build better resilience during hard time and help individuals to overcome difficulty in a healthier way. Thus,