

ORIGINAL ARTICLE

FACTORS ASSOCIATED WITH HEALTH STATUS AND LIVING NEEDS IMPACT ON B40 WOMEN'S QUALITY OF LIFE IN MALAYSIA: AN ANALYSIS BASED ON B40 RURAL AND URBAN POOR AREAS

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ABSTRACT

Quality of life among low-income women could cause NCDs due to various factors. The study aims to determine the impact of holistic health, psychological health, life needs, and nutrition practices on the quality of life among B40 women. A cross-sectional study was performed among 1,127 women categorised under low-income populations in Kuala Lumpur and Selangor. The respondents were selected using a simple random sampling technique and guided questionnaires. Data were analysed using the Chi-square test and logistic regression models. The overall response rate was 100%. Women in rural locations were 0.378 times more likely to significantly experience low quality of life than women living in poor urban areas ($p < 0.001$; OR=0.378; CI=0.224 - 0.638). The factors related to health status and living needs that resulted in low quality of life among low-income women were sociodemographic, holistic health (physical, mental, and spiritual), psychological health, life necessities, and nutrition practices status. Women with holistic environmental health reflected 0.550 while those with holistic mind and mental health were 0.446 times more likely to experience low quality of life than women with high quality of life respectively ($p < 0.001$; OR=0.550; CI=0.318 - 0.953) and ($p < 0.001$; OR=0.446; CI=0.288 - 0.693). Aggressive efforts in raising the awareness and healthy lifestyle practices among B40 rural and urban poor women could reduce NCDs through preventive, lifestyle modification, and the prudent control of several common risk factors that could lead to chronic diseases.

Keywords: Health status, Living needs, Quality of life, Low income, Non-Communicable Diseases.

INTRODUCTION

Over nutrition and undernutrition coexist within the same individual, household, or population in low and middle-income countries. Singh et al.¹ stated that low-income Malaysians are at risk of malnutrition and overeating, which necessitates several cost-effective strategies to improve their quality of life and thus minimise health concerns and inequalities among low-income Malaysians including the rural population and the urban poor. Nationally representative data demonstrated that the prevalence of NCDs has consistently increased for the last two decades in Malaysia². The World Health Organisation (WHO) reported that 71% of all deaths in 2018 were caused by NCDs^{3,4}.

The NCDs include coronary heart diseases, hypertension, diabetes, cancer, mental health issues, and obesity, covering 48% of the Malaysian population^{5,6}. The statistic is constantly higher among women than men in nearly all global regions^{7,8}. The increasing involvement of women in the paid-labour market results in multifactorial exposure to NCD development⁹.

Although female participation in the paid workforce increases, women across the diverse

economies continue to provide for most unpaid care work^{10,11}. Considering all types of work (paid and unpaid), women work longer days than men on average. Unpaid work describes the services provided within a household for its members, such as personal care and housework^{12,13}. Higher levels of objective stress among women may also translate into higher levels of perceived stress (burden and role strain) compared to men^{14,13}. Moreover, the cognitive and emotional involvement and the lack of respite (time for leisure, communication with partners or friends, and self-care) from unpaid work could eventually cause physical and emotional distress, depression, and anxiety^{15,13} that potentially lead to NCD.

Due to the growing concern, NCDs among women should be managed with particular attention to the risk factors and consequences, considering that the diseases manifest differently between sexes. Following the increasing trend of women entering the workforce, one strategy is to emphasise NCD prevention by imparting health education on risk factors at the workplace and home. Consequently, the Ministry of Health implemented the National Strategic Plan for NCD (NSP-NCD) from 2010 to 2014 and the NCD

Prevention 1 Malaysia (NCDP-1M) programme. The NCDP-1M allowed the government health services to engage the community as a partner in the prevention and promotion of NCDs, such as NCD risk factor screening and intervention in the community and workplace^{16,2} where the most categorised cases (68%) were grouped as highly cost-effective¹⁷ and assessment was supported by new health technology¹⁸. Hence, identifying women's health risk factors among the low-income group could increase the understanding of the significance of NCDs among the rural and urban poor to construct a sex-specific intervention with more detail and target-specific.

Conceptual framework

Figure 1 illustrates the study framework. Sociodemographic factors linked with perceived control are based on Robinson and Lachman's^{19,20} model, which includes age, gender, ethnicity, and socioeconomic status (education, employment, and income). The quality of life-related factors includes life necessities, eating habits, and holistic health among B40 women. Holistic health status impacts other factors, such as health symptoms, NCD disease, access to health services, and mental health.

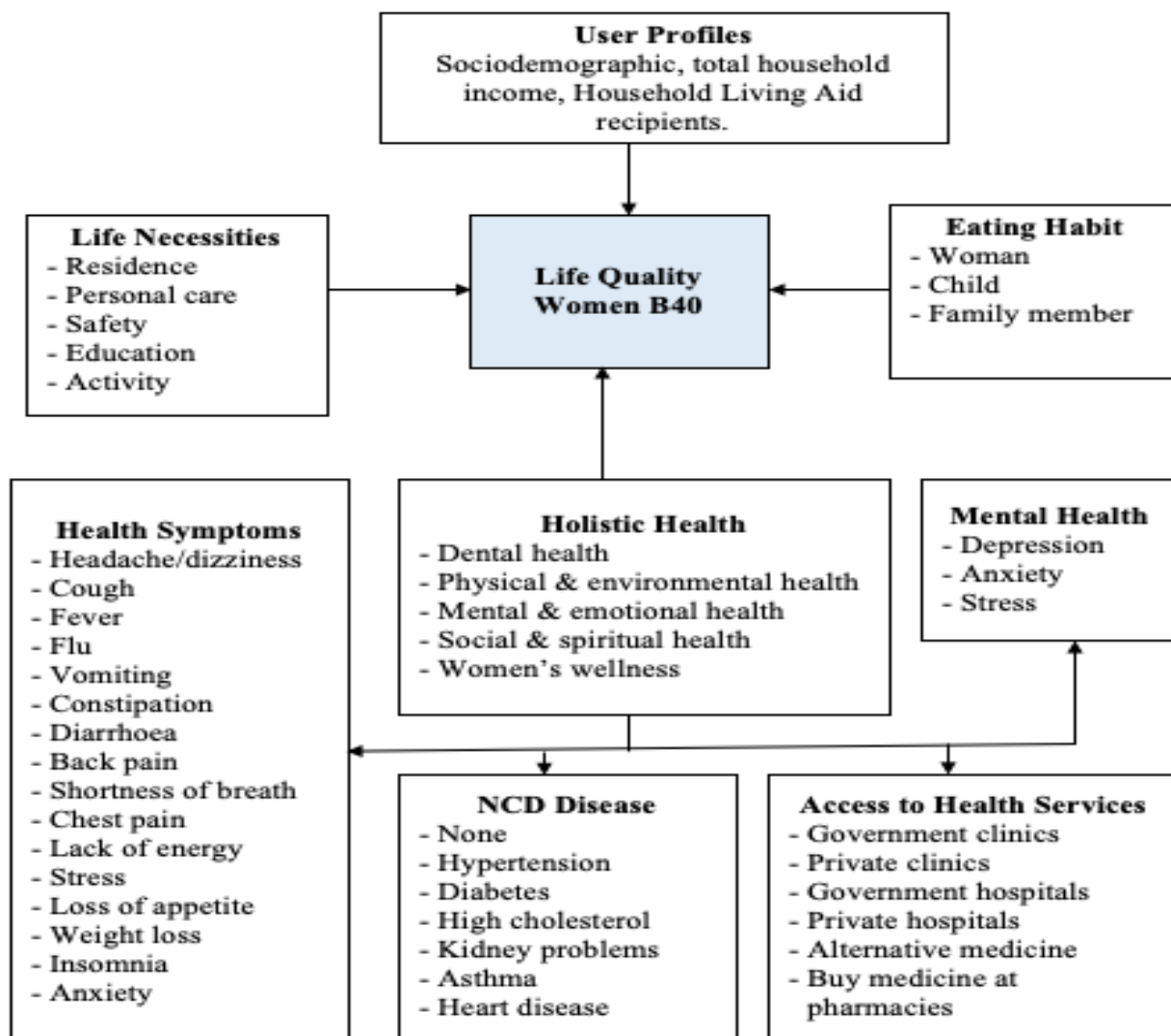


Figure 1 The research framework

Health-related quality of life (HRQOL) measurement

The study determined the quality of life of B40 women using the descriptive system of the EQ-5D-5L, which includes five dimensions: 1) mobility, 2) self-care, 3) routine activities, 4) pain or discomfort, and 5) anxiety or depression. Each dimension comprises five response levels: 1) none, 2) slightly problem, 3) moderate problem, 4)

severe, and 5) extremely severe. For instance, the score of 12345 demonstrates respondent experiences: 1 = no problem in walking (mobility), 2 = little trouble washing or wearing clothes (self-care), 3 = moderate problem doing routine activities, 4 = severe pain or discomfort and 5 =

too worried or depressed. The score of 11111 depicts no issue in all five dimensions. The EQ-VAS questionnaire comprised the overall health level described on the Vertical Visual Analogue Scale (VAS) scale and labelled with a scale from 0 to 100 to signify the women's health level on the interview day.

The relationship between socioeconomics and HRQOL has been extensively scrutinised where the significance of socioeconomic status to health has been long established^{22,23}. Low socioeconomics is usually closely associated with the risk of premature death from NCDs²⁴. Zainal et al.²⁵ noted a significant relationship between housing conditions, health, and social support in poor urban settings with quality of life²⁶. Thus, the HRQOL measurement using the EQ5D instrument has been broadly applied in clinical trials or intervention studies²⁷, economic impact research, and utility cost analysis²⁶. Shafie et al.^{28,30} demonstrated that in Malaysia, higher quality of life was related to better education and freedom from medical issues but income and gender had no relationship.

MATERIALS AND METHODS

Study design, settings, and participants

A total sample of 1,127 respondents enrolled in the study survey using simple random sampling. Participants aged 18 years and above were voluntarily selected among the B40 category living at People Housing Programme (PPR) Bukit Jalil and PPR Muhibbah (urban poor) and Beranang, Selangor (rural). The study was based on a baseline cross-sectional survey from January until March 2020. The study was approved by the Medical Research and Innovation Secretariat Committee, National University of Malaysia (UKM PPI/111/8/JEP-2018-651).

Study instrument and measure

Sociodemographic information of low-income B40 women

The study encompassed sociodemographic background (age, location, ethnic, marital status education employment status, household income, and Household Living Aid Recipient (BSH Recipient), health-related conditions [health problem, symptom, and obtaining medical treatment (outpatient or inpatient)], living needs, and quality of life.

Holistic and psychological health

The Holistic and Psychological Health among B40 women were accessed using the Holistic Health Assessment and Wellness Survey (Open Access website) and inventory DASS-21, respectively. The Holistic Health Assessment and Wellness Survey questionnaire covered three domains: Health (Physical and Environment) and Health (Mind and

Emotions) and Health (Social and Spiritual. The DASS-21 (Depression, Anxiety, Stress Scale 21) is a clinical assessment tool that evaluates three clinical conditions linked with mental health, namely depression, anxiety, and stress.

Life necessities, quality, and eating habits

The respondents used and completed the CANSAS-P (Camberwell Assessment of Need Short Appraisal Schedule-P) version, which is a screening test, to detect an individual's unmet needs²⁹. For eating habits, the questionnaire was modified to suit the needs of women and family nutrition practices in Malaysia. Three experts evaluated the content's validity. Factor analysis was used to conduct a test of the construct validity. For testing internal consistency, Cronbach alpha was used. The intraclass correlation coefficient was used to calculate the test-retest reliability. The validity of the criterion was evaluated using an independent samples t-test and an analysis of variance. The reliability test signified a reliability value of 0.737 for the nutritional practice domain in Malay version.

Statistical analysis

The Statistical Package for Social Sciences (IBM SPSS, Version 25) was employed for the data analysis. The results are depicted as frequency (n) and percentage (%) for the categorical variable and as the method and standard deviation (S.D.) for the continuous variable. Chi-square tests were performed to determine the relationship between all independent and dependent variables.

A further analysis applied a bivariate test, which is a statistical chi-square test [(Chi-Square test (x²)] to determine any significant relationship between the quality-of-life status of B40 women and other study variables. Subsequently, statistical analysis using binary logistic regression was performed for the multivariate test to assess the strength of the significant relationship. A p-value <0.05 was considered statistically significant with a study strength of 80% and a confidence interval (CI) of 95%. Binary logistic regression was employed with the quality-of-life status as the dependent variable and the independent variables of location, age group, race, marital status, religion, education level, household income level, Household Living Aid (BSH) recipient or otherwise, each item for holistic health (dental, environmental, mental, spiritual, and women's wellness), overall holistic health, psychological health, living needs, and nutritional practices.

RESULTS

Descriptive results

Table 1 depicts the demographic information relationship with quality of life among B40 women.

The results presented a significant relationship between age, marriage status, education, total household income, and BSH recipient but no significant findings between location, race, citizenship, and religious status with quality of life. Generally, 75.2% of the respondents have higher quality of life, and most of them are 30 to 45 years old. Women over 60 years old experience the lowest quality of life. The Chi-square value was 253.803 and the p-value was 0.000 (p-value < 0.001), $\text{Min} \pm \text{SP}$ (43.82 ± 15.056), thus proving a significant relationship between younger age and higher quality of life. Meanwhile, married women (52.7% of the respondents) presented a high quality of life, while only 22.5% of the respondents were unmarried and had a high quality of life. The findings suggested that the relationship between marital status of B40 women with quality-of-life status of rural and urban poor women with value $X^2 = 134.472$ and p-value < 0.001 with Odd Ratio (OR) quality of life status of married B40 women was 0.647 times higher than unmarried B40 women [$p < 0.001$; OR = 0.647; CI = 1.166 - 2.047]. Therefore, the results depicted a significant difference between marital status and high quality of life.

Observably, 43.2% of the women with secondary school education and 26.5% of the respondents with diploma education demonstrated a higher quality of life, while only 4.7% of the respondents with primary school education had a high quality of life. The respondents who presented the least percentage (0.8%) for high quality of life were women who never attended school. The value of Chi-square was 203.746 and the value of p was 0.001 with $\text{Min} \pm \text{SP}$ (5.59 ± 2.091), hence suggesting a difference between a high standard of education and high quality of life.

Higher total household income also determined the quality of life among B40 women. The data depicted that the women who earned over RM3,860.00 (50.3% of the respondents) had better quality of life. The Chi-square value was 18.324 and the p-value was 0.001 (p-value < 0.001), $\text{Min} \pm \text{SP}$ ($\text{RM}3252.06 \pm 3315.01$), thus signifying a significant relationship between earning less than RM3,860.00 with low quality of life. Women who did not receive BSH (42.2% of the respondents) exhibited a higher percentage of quality of life

than those who received BSH. The value of $X^2 = 24.487$ and the value of $p < 0.001$ indicated a significant difference between high total income with high quality of life where 372 (33.0%) BSH recipients have a higher quality of life than 170 (15.1%) BSH recipients with a low quality of life status [$p < 0.001$; OR = 0.501; CI = 0.380 - 0.660].

Multivariate analysis

Multivariate analysis was performed to determine the strength of the relationship between quality-of-life status and all other variables. Table 2a and Table 2b depicts that high quality of life had a significant relationship with several variables that were considered risk factors, such as several health symptoms experienced, chronic NCD, holistic health status, mental health status (depression, anxiety, and stress), living needs, and dietary practices. Other variables indicating a significant relationship ($p < 0.05$) were location, age, BSH recipients, holistic environmental health, holistic mental and emotional health, and DASS-21 mental health screening (anxiety). The findings signified that women from rural areas would be 0.378 times more likely to significantly experience low quality of life than those living in urban poor areas ($p < 0.001$; OR = 0.378; CI = 0.224 - 0.638).

Women over 45 years would be 5.621 times more likely to significantly experience low quality of life than women under 45 years ($p < 0.001$; OR = 5.621; CI = 3.657 - 8.639). Meanwhile, the BSH recipients would be 1.613 times more likely to significantly experience low quality of life than non-recipients ($p < 0.001$; OR = 1.613; CI = 1.031 to 2.524). For holistic environmental health, B40 women would be 0.550 times more likely to significantly experience low quality of life than the women with high quality of life status ($p < 0.001$; OR = 0.550; CI = 0.318 - 0.953). For holistic mental and emotional health, the respondents would be 0.446 times more likely to significantly experience low quality of life than the respondents with high quality of life ($p < 0.001$; OR = 0.446 CI = 0.288 - 0.693). Under psychological health, the women would be 6.555 times more likely to significantly experience little anxiety than those with severe anxiety ($p < 0.001$; OR = 6.555; CI = 2.636 - 16.299).

Table 1: Sociodemographic with the Quality of Life Status Among B40 Women (N = 1,127)

Variables (n=1127)	Quality of Life Status		χ^2	p-Value	OR	Min ± SP	95% CI
	High n (%)	Low n (%)					
Age	< 30 years	202 (17.9%)	11 (1.0%)	253.80 3	0.000	43.82 ± 15.056	
	30 – 45 years	350 (31.1%)	54 (4.8%)				
	45 – 60 years	246 (21.8%)	99 (8.8%)				
	> 60 years	50 (4.4%)	115 (10.2%)				
	Total	848 (75.2%)	279 (24.8%)				
Location Residence	Urban poor	370 (32.8%)	107 (10.2%)	2.398	0.121	1.243	0.943– 1.641
	Rural	478 (42.4%)	172 (15.3%)				
Race	Malay	752 (66.7%)	255 (22.6%)	5.907	0.116	1.21 ± 0.649	
	Chinese	26 (2.3%)	4 (0.4%)				
	Indian	59 (5.2%)	20 (1.8%)				
	Others (OA)	11 (1.0%)	0 (0.0%)				
Citizenship	Malaysian	837 (74.2%)	279 (24.8%)	3.655	0.056	1.01 ± 0.098	
	Others	11 (1.0%)	0 (0.0%)				
Marriage Status	Not married	254 (22.5%)	111 (9.9%)	134.47 2	0.000	0.647	1.166– 2.047
	Married	594 (52.7%)	168 (14.9%)				
Religion	Muslim	764 (67.8%)	256 (22.7%)	5.252	0.154	0.817	0.504– 1.324
	Non-Muslim	84 (7.4%)	23 (2.1%)				
Educational Status	Never attend school	10 (0.8%)	17 (1.5%)	203.74 6	0.000	5.59 ± 2.091	
	PSRA or Primary School	53 (4.7%)	98 (8.7%)				
	SRP or PMR or SPM	487 (43.2%)	114 (10.1%)				
	Certificate Skills or STPM or Diploma	165 (14.7%)	18 (1.6%)				
	Degree and above	133 (11.8%)	32 (2.9%)				
Total Household Income	< RM3,860	567 (50.3%)	222 (19.7%)	18.324	0.000	RM3252.06 ± RM3315.01	
	RM3,861 – RM8,319	238 (21.1%)	43 (3.8%)				
	> RM8,320	43 (3.8%)	14 (1.3%)				
BSH Recipient	Yes	372 (33.0%)	170 (15.1%)	24.487	0.000	0.501	0.380– 0.660
	No	476 (42.2%)	109 (9.7%)				

Table 2a: Strength Relationship Analysis for Variables with the Quality-of-Life Status Among B40 Women

Variables (n = 1,127)	Quality of life Status	χ^2	p-Value	OR	95% CI	
					Lower	Upper
Location		13.308	0.001*	0.378	0.224	0.638
Urban Poor						
High	433(90.8%)					
Low	44(9.2%)					
Rural Area						
High	529(81.4%)					
Low	121(18.6%)					
Age		61.994	0.001*	5.621	3.657	8.639
< 45 years	488(43.3%)					
> 45 years	639(56.7%)					
Race		1.379	0.240	2.521	0.539	11.803
Malay	847(75.1%)					
Others	280(24.9%)					
Marital Status		2.981	0.084	0.677	0.434	1.054
Unmarried	328(29.1%)					
Married	799(70.9%)					
Religion		0.564	0.453	0.540	0.108	2.697
Muslim	859(76.2%)					
Others	268(23.8%)					
Educational Level		2.275	0.131	1.601	0.869	2.953
Certificate, Diploma, Degree	183(16.2%)					
SPM and lower	944(83.8%)					
Total income		0.214	0.644	0.767	0.249	2.361
< RM3000	751(66.6%)					
> RM3000	376(33.4%)					
BSH Recipient		4.385	0.036	1.613	1.031	2.524
Yes	533(47.3%)					
No	594(52.7%)					
Dental Health		0.012	0.911	0.971	0.579	1.629
Yes	783(69.5%)					
No	344(30.5%)					
Environmental Health		4.550	0.033	0.550	0.318	0.953
High	517(45.9%)					
Low	610(54.1%)					
Mental & Emotional Health		12.931	0.001*	0.446	0.288	0.693
High	555(49.2%)					
Low	572(50.8%)					
Spiritual Health		2.573	0.097	0.691	0.433	1.072
High	397(49.2%)					
Low	730(50.8%)					
Women Health		0.028	0.868	1.044	0.627	1.738
Healthy	496(44.0%)					
Not Healthy	631(56.0%)					
Holistic Health (All)		1.814	0.178	1.627	0.801	3.306
High	575(51.0%)					
Low	552(49.0%)					

Significant at p < 0.05

Table 2b: Strength Relationship Analysis for Variables with the Quality-of-Life Status Among B40 Women

Variables (n = 1,127)	Quality of life Status	χ^2	p-Value	OR	95% CI	
					Lower	Upper
DASS-21 (Depression)		3.517	0.061	5.645	0.925	34.458
Normal or Mild or Moderate	936(83.0%)					
Severe or Extremely severe	191(17.0%)					
DASS-21 (Anxiety)		16.368	0.001*	6.555	2.636	16.299
Normal or Mild or Moderately	912(80.9%)					
Severe or Extremely severe	215(19.1%)					
DASS-21 (Stress)		1.447	0.229	0.259	0.029	2.342
Normal or Mild or Moderately	949(84.2%)					
Severe or Extremely severe	178(15.8%)					
Living Needs		1.459	0.227	0.748	0.467	1.198
Fulfilled	503(44.6%)					
Unfulfilled	624(55.4%)					
Nutritional Practice		1.217	0.270	0.814	0.565	1.173
Good	561(49.7%)					
Bad	566(50.3%)					

Significant at $p < 0.05$

DISCUSSION

The study assessed the impact of health status and living needs on the quality of life of B40 women living in Malaysian rural and urban poor areas. Results concerning the NCD impact on their quality of life suggested that more than the majority of the respondents have high quality of life. Nonetheless, several risk factors, such as age, marriage status, education, total household income, and BSH recipient status significantly influenced the respondents' quality of life. The risk factors are crucial as poor quality of life has been related to a desire to hasten death in terminally ill patients due to possible mediators, such as depression, demoralisation, loss of control, low self-worth, will to live, and suicidal thoughts³¹ where it is a strong clinical indicators of the desire to hasten death. Suicidal thoughts may be alleviated by existentially-oriented therapies, such as meaning-centered therapy, that target these symptoms.

The findings align with other research reporting on remarkable health disparities that are primarily motivated by income^{32,21} [Woolf et al., 2015; Li and Zhang, 2020], where health and poverty are inextricably associated^{33,34}. The middle-aged population (45 to 60 years) and married women were connected to an increased likelihood of higher quality of life. Low quality of life might be linked with healthcare accessibility and the number of chronic diseases among women over 60 years old due to food insecurity, poor nutrient intake,³⁵ and malnutrition³⁶. The educational level has become an indicator of social class, which compromises the opportunities for personal and social development^{37,38} and influences quality of life. For example, Darias-

Curvo^{39,38} discussed that education, family, and socioeconomic inheritance span the life cycle and impacts the individual's present and future resources (health status, social networks, and living conditions). Government cash transfers through the BSH programme significantly impacted high quality of life due to improved economic security on expenditure, food insecurity, and asset ownership⁴⁰ among B40 women.

Overall, B40 women (75.2% of the respondents) experienced good holistic health, which contributed to a high quality of life. The fundamental dimensions of holism encompass physical, psychological, social, and spiritual aspects⁴¹. Psychological and emotional distress^{42,43} could lead to significant disruption in individual, family, and social life^{44,43}. Therefore, an individual's optimal holistic health and well-being are crucial and aligned with a better quality of life experience where spirituality leads to finding a purpose and meaning in life attributed to human existence^{45,46}.

Severe and extremely severe depression and anxiety and stress were higher among B40 women with low quality of life. The inability to manage anxiety reduced their ability to communicate effectively^{47,48}. Considering that social interactions are crucial production factors in health, a strong positive relationship exists between social interaction and mental health^{49,50}. Another researcher revealed that loneliness and social isolation were associated with increased mortality risk and controlled baseline mental and physical health^{51,50}.

Gweshengwe et al.'s⁵² case study in Brunei described that a high quality of life is expressed through the basic needs and capability lenses, including 'fulfilled basic needs', 'being financially secure', 'being well-educated', 'having a well-paying and permanent job', 'living comfortably', and 'being healthy', which are similar descriptions as in urban and rural areas. Overall, 41.7% of the respondents with complete living needs scored the highest quality of life. A human need involves satisfying their basic needs from opportunities offered by the social, built environment, and natural resources. Meanwhile, social indicators question the validity of solely using economic progress as the fundamental in assessing the quality of life, whether more is always better⁵³. Hence, the goals are a crucial global agenda concerning good governance and human rights to improve quality of life.

Dietary choices are another significant lifestyle factor in the health production function. A low-quality diet is related to higher mortality risk^{54,50}. The results indicated no significant difference between good nutritional practices among B40 women than those who did not practice. Nevertheless, B40 women are advised to conduct good nutritional practices as a study⁵⁵ found a strong and positive relationship between increased fruit consumption and increased wellbeing and happiness. Nonetheless, few B40 women still tend to purchase nutritious foods, such as fruits and vegetables. For example, Mancino et al.⁵⁶ reported low-income households to have higher preference for buying more sugar-sweetened beverages, high sugar intake among the elderly,⁵⁷ and fewer healthy foods or high sodium⁵⁸ than higher-income households, hence the risk of under-and over nutrition⁵⁹.

Studies have suggested that a poor state of health among older people affects their functional efficacy, fulfilment of social roles, possibilities of further development, and perception of their old age. The statement supported the current study findings on B40 women over 45 years' old who experienced a low quality of life. Consequently, good health lowers the risk of physical and social disability, increases the tendency for further development, and inhibits physical changes. Good health is also linked with a higher quality of life⁶⁰. Given that the BSH recipients were categorised under people with low quality of life, financial support from the government impacts life. Angeles et al.⁶¹ mentioned that unconditional cash grants could break the cycle of poverty and poor mental health. Considering that human and environmental health are closely connected, safeguarding the topics is a complex research issue and a practical real-world challenge⁶². The factors linked with low scores among B40 women

lead to low quality of life, which results in low anxiety.

CONCLUSION

The study explored the high quality of life among B40 women linked with risk factors, such as the number of health symptoms experienced, chronic NCD, holistic health status, mental health status (depression, anxiety, and stress), living needs, and nutritional practices where a significant relationship was observed ($p < 0.05$) between several variables, such as location, age, BSH recipient status, holistic environmental health, holistic mental and emotional health, and mental health screening DASS-21 issue. Ultimately, preventive measures and accurate and consistent information need to be implemented in society, specifically among B40 women. Therefore, a healthy lifestyle can be practised and emphasised to enhance B40 women's quality of life.

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Competing Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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