



# Health related quality of life (HRQOL) among low socioeconomic population in Malaysia

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## Abstract

**Background:** The rapid growth of economy and increasing cost of living in Malaysia have given significant impact especially to the lowest household income population. The main objective of this study was to determine risk factors for low quality of life (QOL) and poor health status of this population.

**Method:** This was a cross sectional study design. A total of 347 respondents from low household income groups, including persons with disability and Orang Asli were recruited from E-kasih. A semi-guided self-administered questionnaire was used. QOL measured by EQ. 5D utility value and health status measured by visual analogue score (VAS). Descriptive statistic, bivariate Chi-square analysis and binary logistic regression were conducted to determine factors influencing low QOL and poor health status.

**Results:** Majority of the respondents were Malay, female (61%), 63% were married, 60% were employed and 46% with total household income of less than 1 thousand Ringgit Malaysia. 70% of them were not having any chronic medical problems. Factors that associated with low QOL were male, single, low household income, and present chronic medical illness, while poor health status associated with female, lower education level and present chronic medical illness. Logistic regression analysis has showed that determinants of low QOL was present chronic illness [AOR 4.15 95%CI (2.42, 7.13)], while determinants for poor health status were; female [AOR 1.94 95%CI (1.09,3.44)], lower education [AOR 3.07 95%CI (1.28,7.34)] and present chronic illness [AOR 2.53 95%CI (1.39,4.61)].

**Conclusion:** Low socioeconomic population defined as low total household income in this study. Low QOL of this population determined by present chronic illness, while poor health status determined by gender, education level and chronic medical illness.

**Keywords:** Bottom 40, Quality of life, Low socioeconomic status

## Background

Malaysia is a multiracial country with a total population of 31.7 million in 2016. The highest percentage distribution by ethnic group were Bumiputra (68.6%), followed by Chinese (23.4%), Indians (7.0%) and others (1.0%). Almost 70% or 22.0 million people from the total population belonged to the middle age group of 15 to 64 years old. There was a total of 7.6 million households with average of 4.1 persons per household [1]. Household income which is defined as total income received by

members of households from four types of sources (income of paid employment, self-employed, income from property and investment and current transfer received) both in cash and in other forms of transfer which occur repeatedly within the reference period i.e. within a year, or more frequent. It showed an average monthly gross household income of Malaysian Ringgit (RM) 6141 in 2014 (equal to 1573.65 US Dollar for 31st December 2014) with an increase of 10.3% growth annually from the year 2007 (which was RM 3686) as reported by the economic planning unit [2].

Socioeconomic status (SES) can be viewed from the social and economic context, which is typically characterized by three dimensions namely education, employment and

money [3]. There are few possible measures or indicators that can be considered to measure SES in order to decide the gradient level [4]. People from lower SES background tend to use public health services more than people from

provide measure for health and quality of life in clinical and economic appraisal. HRQOL of the B40 participants has been assessed using EQ. 5D and EuroQol Visual Analogue Score (EQ-VAS) for the health status. EQ-VAS records the respondent's health on the same day on a vertical visual analogue scale from 0 to 10, in which 10 is labelled as 'best imaginable health' and 0 score is the 'worst imaginable health state' as rated by the respondents. EQ. 5D-3 L has been validated among Malaysian adult population with an acceptable concurrent validity

which include gender, education level and chronic med-



Table 4 Bivariate analysis of LSE population factors towards EQ-VAS

Independent variables	Visual analogue score (EQ-VAS)		$\chi^2$	p-value	OR (95% CI)
	Poor	Good			
Gender					
Female	76 (50.3)	75 (49.7)	5.14	0.023	1.82 (1.08–3.07)
Male	35 (35.7)	63 (64.3)			
Age (years)					
≤ 42	50 (43.5)	65 (56.5)	0.16	0.9	0.97 (0.58–1.60)
> 42	58 (44.3)	73 (55.7)			
Ethnic					
Non-Malay	42 (48.8)	44 (51.2)	0.96	0.326	1.30 (0.77–2.19)
Malay	69 (42.3)	94 (57.7)			
Education					
Low	96 (49.2)	99 (50.8)	7.10	0.008	3.03 (1.30–7.05)
High	8 (24.2)	25 (75.8)			
Employment					
Employed	67 (42.4)	91 (57.6)	0.87	0.351	0.78 (0.47–1.30)
Unemployed	46 (48.4)	49 (51.6)			
Marital status					
Single	42 (47.7)	46 (52.3)	0.56	0.453	1.22 (0.72–2.06)
Married	68 (42.8)	91 (57.2)			
Living place					
Urban	50 (45.9)	59 (54.1)	0.07	0.784	1.07 (0.064–1.78)
Rural	56 (44.1)	71 (55.9)			
Household income (MYR)					
≤ 1737	68 (43.9)	87 (56.1)	0.10	0.750	0.92 (0.55–1.53)
> 1737	45 (45.9)	53 (54.1)			
Medical status					
Present	46 (61.3)	29 (38.7)	11.98	0.001	2.63 (1.51–4.58)
Absent	67 (37.6)	111 (62.4)			

Table 5 Logistic Regression analysis for determinants of LSE population health status by VAS

Variable	QOL utility value	Wald	p-value	Adjusted Odds Ratio (AOR)	95% CI
Gender					
Female		5.19	0.023	1.94	1.09–3.44
Male				1.00	
Education					
Lower education		6.35	0.012	3.07	1.28–7.34
Higher education				1.00	
Chronic medical illness					
Present		9.27	0.002	2.53	1.39–4.61
Absent				1.00	

may give impact to the study analysis, and self-reported questionnaire could give possible reporting bias in this study. For future study, we suggest on having a larger sample size and to conduct an interview-based data collection. We also recommend analysing specific medical illness or other sociocultural factors that were not studied in this research.

## Conclusion

This study has demonstrated an assessment of HRQOL by EQ, 5D and VAS among low SES population in Malaysia that was presented by the lowest household income group. We found that factors such as differences in sociodemographic, socioeconomic and medical illness status were associated with the HRQOL of the respondents. From this study, absent chronic medical illness was factor related with high HRQOL and good health status among LSE population. External and supporting factors such as economic stability and good health condition could help in improving well-being and quality of life of the poorer group. It is recommended for future research to enhance the recruitment of B40 group either to do in exploratory or qualitative study.

## Abbreviations

B40: Below 40% or Bottom 40%; EQ 5D: EuroQol five Dimension; EQ-VAS: EuroQol Visual Analogue Score; HRQOL: Health Related Quality Of Life; LSE: Low Socioeconomic; M20: Middle 20%; QOL: Quality Of Life; RM: Ringgit Malaysia; SES: Socioeconomic Status; T20: Top 20%; VAS: Visual Analogue Score

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## Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

## Additional information

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## Authors' contributions

SEWP, CS and MASZ contributed to project design and delivery, decision-making and direction throughout the research. HAK drafted and writing the initial manuscript. SEWP, CS and MASZ provided feedback. All authors read and approved the final manuscript.

## Ethical approval and consent to participate

All procedures performed in studies involving human participants were in accordance with the ethical standards of Research Ethics Committee, National University of Malaysia (UKM) and its later amendments or comparable ethical standards, and was approved by the committee with approval number EP-2016-014. Written informed consent was obtained from all the participants.

## Consent to publish

Not Applicable.

## Competing interests

The authors declare that they have no competing interest.

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