10TH MALAYSIA STATISTICS CONFERENCE
"Looking Beyond GDP: Towards Social Well-being and Environmental Sustainability"
25TH-26TH SEPTEMBER 2023

MyStats 2023

MALAYSIAN HEALTHY LIFESTYLE INDEX

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ABSTRACT

An evaluation instrument called the Malaysian Healthy Lifestyle Index was created to measure and evaluate people's overall health behaviors and lifestyle decisions in Malaysia. incorporating a variety of markers, such as healthy eating, physical activity, healthy without smoking, and mental well-being. The index is intended to provide a thorough reference for actions and choices related to public health in combating non-communicable diseases. Overall, healthy lifestyle index could serve as a means to assess and track the healthy lifestyle habits within society. Furthermore, it can assist in identifying areas that require improvement and setting achievable goals to enhance these health-conscious behaviors. Additionally, the index could serve as a valuable resource for public health guidance to individuals, enlightening them about the positive outcomes of adhering to these recommendations to lower the susceptibility to particular illnesses. By possessing precise data on lifestyle patterns, it becomes feasible to conduct disease management and primary as well as secondary prevention, ultimately reducing the future occurrence of non-communicable diseases.

Keywords: Healthy lifestyle index; physical activity; non-communicable disease; behaviour; mental health

INTRODUCTION

A system of evaluation is needed to measure the possibilities for healthy living.

As a result, we suggested developing the Malaysian Healthy Lifestyle Index (MHLI). The MHLI's objective is to offer Malaysians a simple health assessment tool that enables people to quantify their current health behaviors and, in turn, empowers them to make positive adjustments in their health behaviors to lead healthier lifestyles.

METHODOLOGY

There will be two stages to this study, consisting the first phase where The Malaysian Healthy Lifestyle Index tool was developed and validated. The second phase uses a cross-sectional quantitative study where the baseline study on the Health Lifestyle Index evaluation among Malaysians using the validated instrument.

Stage 1 of Development of the Index

ESTABLISHMENT OF TEAM OF EXPERTS

Expertise from academics and professionals in the area of sports science, health communication, psychology, psychiatry, epidemiology, nutrition, health promotion, and education

ITEM DEVELOPMENT

Stage 1: Identification of domain and Item Construction

a. Identification of domain: Constructing the new instrument will involve a review of the previous research.
b. Item selection: Items will be adapted or modified from the existing developed instruments.
c. Generating an item pool question based on identified domain from the literature review.
d. Item Reduction: Items selected based on the domain identified to be measured will look into Malaysia situational analysis and needs under the panel of experts' purview. Various process take place which include translation, revision, back-to-back translation, and cross-cultural adaption.

Stage 2: Assessment of Comprehensibility

a. Content Validity: Content validity refers to the adequacy of the items in measuring the domain in terms of content relevance and representation with 4-point scale choices to rate the comprehensibility of each item, with 1=not relevant, 2=somewhat relevant, 3=quite relevant, and 4=highly relevant (Polit & Beck, 2006; Schilling et al., 2007)
b. Face Validity: Face validity is an assessment of the instrument by non-experts in terms of feasibility, readability, consistency of style and formatting and the clarity of language used (Taherdoost, 2018)

Stage 3: Pre-Testing Questions

a. To ensure that respondents understand and can answer the developed questions, it is important to assess the comprehensiveness of the questions before administering the pilot test. Any confusing and problematic questions were identified and improved for clarity.

Figure 1.1: Steps of Instrument Development

Second Stage: Data Collection of the Index

The second phase of the study will focus on the baseline study of the Healthy Lifestyle Index assessment among Malaysians using the validated instrument using a cross-sectional approach. The data collection using quantitative methods through survey questionnaires.

Study Population

This study involves Malaysian citizens from the whole of Malaysia aged 18 and above.

Sampling

The sample size calculation is based on (Naing et al., 2006). Based on the NHMS 2015 & 2019, the sample size is calculated based on a variance of the proportion of the variable of interest (previous data from NHMS on mental health among adults, current tobacco use, dietary practices, physical activity, current alcohol use, and health literacy). Taking into consideration non-response, the sample size calculated for adults will be 9,200 participants (with a 35% non-response rate).

Research Instrument

The MHLI was used as a valid measurement for assessing the Malaysian Healthy Lifestyle Index (provided the Cronbach's alpha value of the instruments in Table 1.1).

Table 1.1: Cronbach's alpha for each factor

Variables	Sub-dimension	Number of Items (n)	Cronbach's alpha (Pre-test)
Health literacy related to healthy lifestyle	Seeking health information Understanding the information Evaluate the information Judging the information Making decision Act upon the decision	18 items	0.98
Physical activity	Willingness to spend money for physical activity Will to get active Usage of medium for physical activity Volunteerism	6 items	0.53
Healthy eating	Portion of food intake Taking of fried foods Taking of sweet foods and beverages Drinking of plain water Taking processed food	17 items	0.83
Healthy eating	Supportive environment	5 items	0.70
Healthy without smoking	Supportive environment Healthy living culture without smoking Healthy living culture without alcohol	6 items 4 items 4 items	0.87 0.72 0.92
Mental health	Psychological health High-risk behavior Social well-being Supportive environment Healthy living culture with good mental health Spiritual well-being	15 items 4 items 9 items 3 items 7 items 7 items	0.89 0.92 0.76 0.70 0.79 0.91

Data analysis

Minimum and maximum values are set in order to transform the indicators expressed in different units into indices between 0 and 1. Assuming the indicator scores across all four domains are equal in weight based on literature and experts, the score for each domain is derived (Livingstone & McNaughton, 2017; Villegas et al., 2008). Refer to Table 1.2, the score for each domain is obtained by summing the indicator scores in all four domains with considering all are the same in weightage based on literature (Livingstone & McNaughton, 2017; Villegas et al., 2008). The MHLI was further transformed to the categorical variable: very low in healthy lifestyle practise (below .34), Low in healthy lifestyle practice (score .35 - .44), moderate healthy in lifestyle practice (score .45-.54) and excellent healthy lifestyle practises (.55 and above)

Table 1.2: Calculating Healthy Lifestyle Index

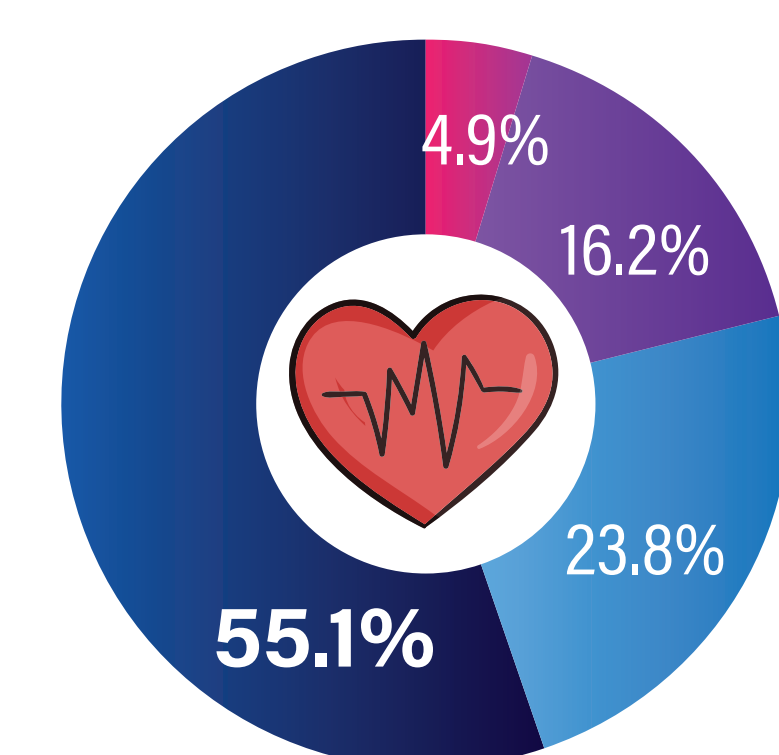| Step 1	Having defined the minimum and maximum values, the dimension indices are calculated as: $Dimension\ index = \frac{actual\ value - minimum\ value}{maximum\ value - minimum\ value}$ Each dimension index is a proxy for capabilities in the corresponding dimensions
Step 2	The HLI is the geometric mean of the four-dimensional indices: Aggregating the dimensional indices $HLI = (Physical\ activity \times \mid Mental\ health \times \mid Healthy\ eating \times \mid Healthy\ without\ smoking \mid)^{1/4}$

RESULT

The Malaysian Healthy Lifestyle Index score uses a range of 0 to 1, i.e. a score of 1 is a score maximum. The higher the percentage value obtained, the better the level of the healthy lifestyle index of the respondents. The score for each lifestyle factor was defined as follows: Physical activity (minimally active to active HEPA), healthy eating (0= unhealthy, 7=healthy eating), smoking (1= non-smoker, 0=smoker), mental health (0= less healthy, 90 healthy).

The index score is obtained by summing the scores for each domain along with its weights(weightage). The score for each domain is obtained by summing the indicator scores in all four domains with considering all are the same in weightage based on literature (Livingstone & McNaughton, 2017; Villegas et al., 2008). The MHLI was further transformed to the categorical variable: very low in healthy lifestyle practise (below .34), Low in healthy lifestyle practice (score .35 - .44), moderately healthy in lifestyle practice (score .45-.54) and excellent healthy lifestyle practises (.55 and above).

The overall index revealed that Malaysian has a very low healthy lifestyle, despite having high to moderate score for each domain. The results also revealed that the majority of respondents (55%) had very low scores on the healthy lifestyle index, while only 5% had high scores and 16% had moderate scores. There is evidence from numerous studies that the healthy lifestyle index and health conditions like hypertension are related. In Sri Lanka, individuals with low HLI scores are significantly associated with lower rates of hypertension among community adults (Fukunaga et al., 2020).
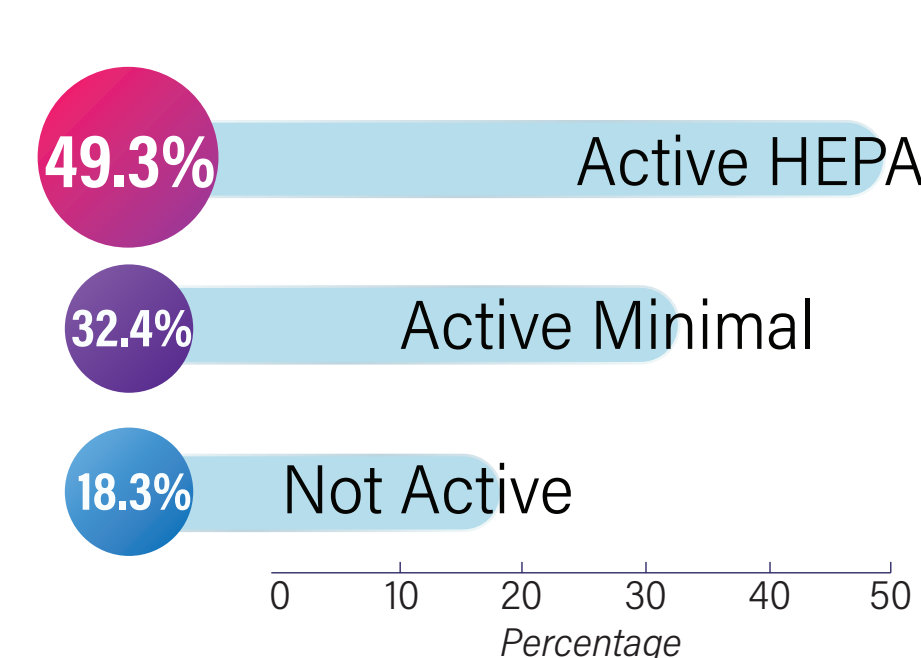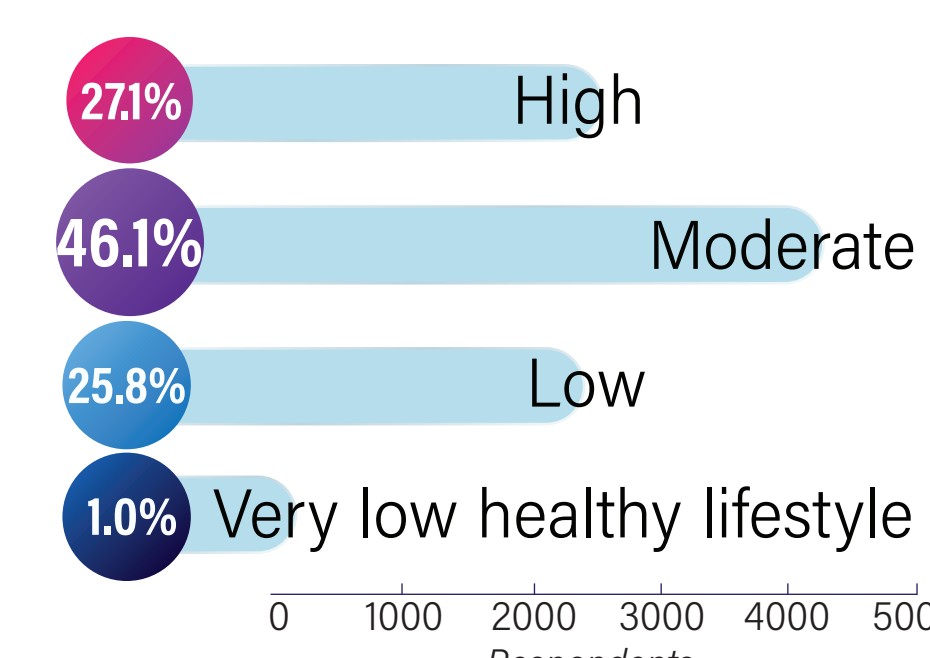
55.1% VERY LOW HEALTHY LIFESTYLE

OVERALL
- High — 4.9%
- Moderate — 16.2%
- Low — 23.8%
- Very low healthy lifestyle — 55.1%

PHYSICAL ACTIVITY
- 49.3% Active HEPA
- 32.4% Active Minimal
- 18.3% Not Active

HEALTHY EATING
- 27.1% High
- 46.1% Moderate
- 25.8% Low
- 1.0% Very low healthy lifestyle

HEALTHY WITHOUT SMOKING
- 79.9% High
- 2.5% Moderate
- 0% Low
- 17.6% Very low healthy lifestyle

MENTAL HEALTH
- 27.0% High
- 46.0% Moderate
- 26.0% Low
- 1.0% Very low healthy lifestyle
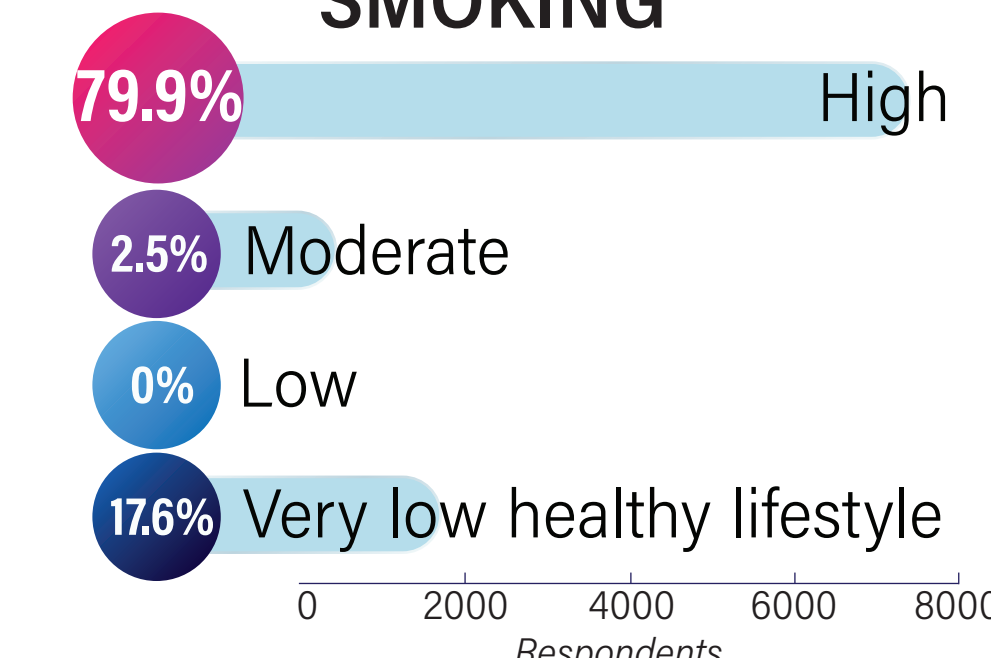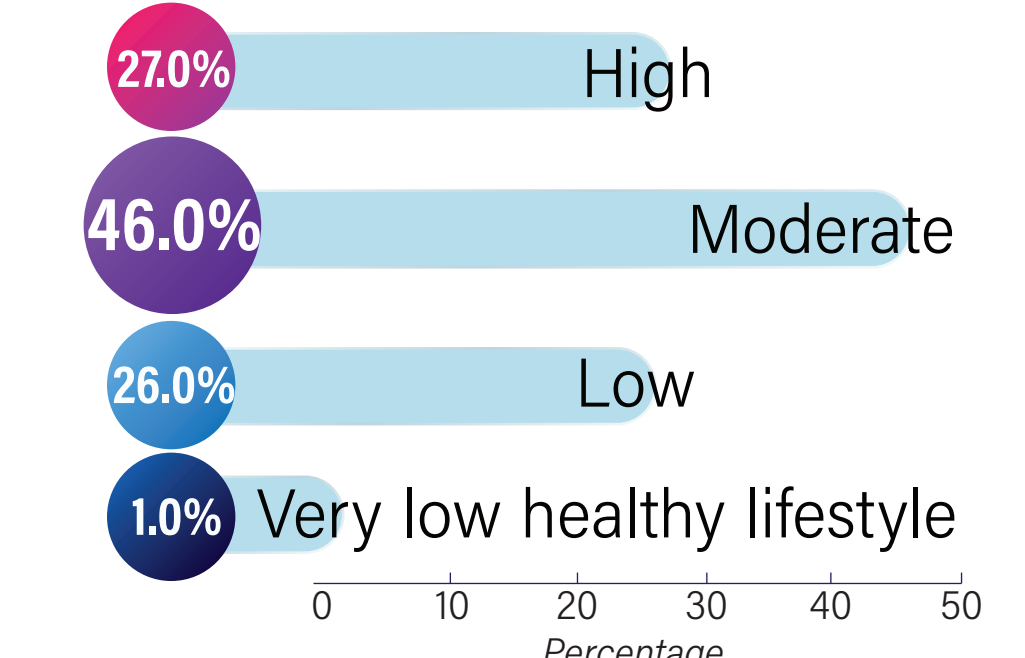
DISCUSSION AND CONCLUSION

The MHLI's purpose is to give Malaysians access to an easy-to-use instrument for assessing health behaviour that allows people to quantify their current health behaviour and, in doing so, empowers them to adopt healthy lifestyle adjustments. Behavioural risk factors, including physical inactivity, unhealthy diet, smoking, mental health, and unhealthy alcohol use are among the main factors leading to non-communicable diseases (NCDs). While for the policy maker, this index can be used as a mechanism to gauge and monitor society's healthy lifestyle behaviour. Tools for community-based prevention efforts to draw attention to opportunities for healthy living and create impetus for individual/community changes (Kim et al., 2004). This index can aid in identifying areas for development and establishing reasonable targets for increasing healthy lifestyle behaviour.

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