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Healthy Lifestyle Profile Scale for Elderly: A novel tool to assess healthy lifestyle among young elderly live in South Asian settings

ABSTRACT

Background: Many lifestyle modification interventions have been introduced for young elderly population (aged from 60 to 74 years) in Sri Lanka to improve their health and well-being. However, little is known about the outcome of those interventions as there is no valid tool available to measure the level of a healthy lifestyle. This study was conducted to develop and validate a new tool to assess the level of healthy lifestyle among young elderly in Sri Lanka.

Materials and Methods: An operationalized definition of the healthy lifestyle was formulated. Items for the tool were identified following a literature review, key informant interviews, and focus group discussions. The content validity of the tool was ensured by the panel of experts. Both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted to explore factor structure and construct validity, respectively. The internal consistency, test-retest, and interobserver reliabilities of the tool were also assessed.

Results: Sixty-two items were identified initially, and they were reduced to 31 based on experts' opinion. Out of those, 28 items were loaded into 8 factors during the EFA. The results of the CFA showed a satisfactory model fit. Internal consistency (Cronbach's alpha >0.7), test-retest, and interobserver reliabilities (Interclass correlation coefficients >0.7) were also found to be satisfactory.

Conclusions: The tool was named the Healthy Lifestyle Profile Scale for Elderly (HLPSE). The HLPSE is a valid and reliable tool to assess the level of healthy lifestyle among Sri Lankan young elderly.

Keywords: Elderly, factor analysis, healthy lifestyle, reliability testing, Sri Lanka, validity

INTRODUCTION

A healthy lifestyle is a key determinant factor of health among elderly.^[1] A healthy lifestyle encompasses different dimensions such as physical activity, nutrition, mental relaxation, social relationships, and avoiding alcohol and smoking.^[2,3] Adherence to a healthy lifestyle improves the health-related quality of life and longevity among elderly. The construct of the healthy lifestyle has been introduced through different lifestyle modification interventions in different parts of the world and many of those showed positive results on elderly health.^[4,5] Similarly, lifestyle modification interventions have been implemented for elderly live in Sri Lanka and those are mainly targeted at young elderly (aged between 60 and 74 years) as they are more capable to adhere to healthy lifestyle instructions than old elderly (aged 75 years and above). Those

interventions are helpful in improving their health and wellbeing and provide better answers to health-related implications raised

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due to population aging of the country. However, little is known about the outcome of those interventions as there is no mechanism to measure the level of healthy lifestyle objectively.

There are many tools developed and utilized to assess the construct of healthy lifestyle in other parts of the world. Health Promoting Lifestyle Profile II^[6] and Health Protective Behavior Scale^[7] are such instruments that are used in the United States of America and China, respectively. Another instrument was developed and validated by Eshaghi in 2010 to assess healthy lifestyle among the Iranian elderly.^[8] Those tools were developed according to their sociocultural contexts thus, such tools may not be applicable to the Sri Lankan elderly who experience different sets of sociodemographic and cultural profiles. Furthermore, a similar kind of tool is not available in other South Asian countries which could be adjusted to Sri Lankan perspective. The unavailability of such measurement tools is a felt need to have a clear understanding of the level of healthy lifestyle among the Sri Lankan elderly. Therefore, the current study was conducted to develop and validate a new tool to assess the level of healthy lifestyle among young elderly population residing in Sri Lanka and other South Asian countries with similar sociocultural environments.

MATERIALS AND METHODS

Ethical approval was obtained from the Ethics Review Committee, Faculty of Medicine, University of Colombo. Informed written consents were obtained from all participants. The study population was young elderly people which has been defined as people aged between 60 and 74 years according to the local classification.^[9] The study was carried out in 7 phases.

Phase 1

In the first phase, the healthy lifestyle has been defined based on the consensus of experts in elderly health.

Phase 2 Item generation

In the second phase, items for the tool were generated based on conceptualized definitions following a literature search, key informant interviews, and focus group discussions.

Review of the literature

An extensive literature search was conducted using the following keywords: “Healthy Lifestyle,” “Health Promoting Lifestyle,” “Healthy Behaviors,” and “Tool AND Healthy Lifestyle.” Google Scholar and PubMed were used with the advanced search options. This was carried out to explore available tools and their items that could be used for the newly developed tool.

Key informant interviews

Key informant interviews were conducted among twelve stakeholders who were involved in elderly health at different levels. They represented different disciplines such as public health, behavioral science, sociology, psychology, and geriatric medicine. These were conducted to identify more appropriate items according to their expertise.

Focus group discussions

Four focus group discussions were conducted among young elderly living in urban and rural settings (two discussions per stratum) to accommodate their views and identify more country-specific items. All focus group discussions were audio recorded following informed written consent of the participants. Important items were identified after reviewing each recording carefully.

Phase 3

Content analysis of the items and preparation of scoring method

In the third phase, identified items were presented to the panel of experts using the Modified Delphi Technique. The expert panel consisted of a geriatric physician, a public health specialist, a sociologist, an university academic, and a health-promoting officer. However, experts who participated in the previous phase were excluded in this phase. All panel members were requested to rate each item from 1 to 10 based on cultural acceptability, clarity, and relevance separately. All responses were evaluated, and items that received higher scores were selected for the instrument, and they were transformed into questions and a response method was also formulated. The questionnaire was initially developed in English and then translated into Sinhala by bilingual experts. Each question could be rated on a 5-point Likert scale from 1 to 5. Participants were asked to respond to the questionnaire considering the past 2-week period from the time of data collection. Scores of each question were summated to determine the total score and it was transformed into a standardized score using the following formula.^[7] A higher score indicates a better level of healthy lifestyle.

Standardized score

$$= \frac{\text{Observed value} - \text{minimum value}}{\text{Maximum value} - \text{minimum value}} \times 100\%$$

Phase 4

In the 4th phase, the tentative questionnaire was pretested among 15 young elderly participants to explore the acceptability of the tool, and the questionnaire was adjusted according to the responses given by the participants.

Phase 5

Statistical item reduction

The draft questionnaire was subjected to exploratory factor analysis (EFA) during the 5th phase. A community-based cross-sectional study was conducted among 300 young elderly participants residing in the Kesbewa Divisional Secretary area in the Colombo district. Minimal sample size was calculated as nine participants per item in the tool.^[10] Participants who were already diagnosed to have psychiatric illnesses based on clinical records and were acutely ill at the time of the data collection were excluded from the study. The sample frame was prepared using the electorate list obtained from the Divisional Secretariate office Kesbewa. Participants were identified randomly using the prepared sample frame. Data collection was conducted by two trained field investigators who were trained simultaneously on the data collection procedure. In addition to the draft instrument, a judgmentally validated questionnaire was used to ascertain information related to the sociodemographic data. Both questionnaires were prepared as interviewers administered tools and field investigators collected data by visiting selected participants at their households. The collected data were entered into computer software (SPSS-23rd version)^[11] and analysis was performed.

Statistically significant results of Bartlett's test of sphericity and the Kaiser–Meyer–Olkin (KMO) value higher than 0.6 were considered to decide sample adequacy.^[12] Eigenvalues of more than 1 were considered for factor loading^[13] and a Scree plot was also observed.^[14] Items were rotated using different methods to obtain the most meaningful factor structure. Identified factors were named appropriately while considering the contents of the items within a factor.

Phase 6

Construct validity of the instrument

In the 6th phase, the identified factor structure was subjected to confirmatory factor analysis (CFA) to ensure the construct validity of the tool.^[15] Another community-based cross-sectional study was conducted among a separate 280 young elderly people residing in a different setting to avoid contamination with participants in the previous phase. The same sample size calculation method and exclusion criteria used in phase 5 were adopted. Participants were recruited randomly using an electorate list of the Moratuwa Divisional Secretary area in the Colombo district. The collected data were analyzed using Lisrel 8.8. software. Absolute, relative, and parsimony fit indices were calculated and compared with acceptable values.

Phase 7

Reliability of the tool

Internal consistency, test–retest, and interobserver reliabilities were taken into consideration to evaluate the reliability of the tool during the 7th phase.

Internal consistency

The internal consistency was assessed by calculating Cronbach's alpha coefficient for the total tool and each domain.^[16] Cronbach's alpha coefficients equal to or above 0.7 were considered acceptable.^[17]

Test–retest reliability

The tool was re-administered among 30 randomly selected participants after 14 days from the initial date of data collection and interclass correlation coefficients (ICC) were calculated. The ICC value equal to or above 0.75 was considered good reliability.^[18]

Interobserver reliability

Since the tool was developed as an interviewer-administered one it was important to ensure interobserver reliability. Thus, the tool was re-administered to 20 randomly selected participants by another field investigator and total and domain-specific ICC values were calculated.

Table 1: Distribution of the sociodemographic characteristics of the participants in exploratory factor analysis (n=300)

Sociodemographic characteristic	Frequency (%)
Age category (years)	
60–64	76 (25.3)
65–69	112 (37.3)
70–74	112 (37.3)
Gender	
Male	113 (37.7)
Female	187 (62.3)
Ethnicity	
Sinhala	288 (96.0)
Non-Sinhala	12 (4.0)
Religion	
Buddhist	210 (70.0)
Non-Buddhist	90 (30.0)
Current marital status	
Currently married	198 (66.0)
Currently not married	102 (43.0)
Level of education	
Less than O/L	205 (68.3)
Equal or above O/L	95 (31.7)
Current employment status	
Currently employed	43 (14.3)
Currently unemployed	257 (85.7)
Income status	
Have a permanent monthly income	85 (28.3)
Not having a permanent monthly income	215 (71.7)

O/L: Ordinary level

RESULTS

The “Healthy Lifestyle for Young Elderly” was defined as “A set of actions and perceptions which will maintain and promote physical, mental, social and spiritual wellbeing of young elderly.” Initially, 62 items were identified during phase 2 and they were subjected to content analysis. Based on the consensus of the panel of experts, items were reduced to 31 and they were converted to questions. Those 31 questions were divided into actions and perceptions as denoted by the formulated definition and they were subjected to EFA.

Results of the exploratory factor analysis

Three hundred participants were interviewed out of selected 312, thus the nonrespondent rate was 3.8%. The mean (standard deviation [SD]) age of the participants was 66 years (SD = 2.8) and majority of them were

female (62.3%). Out of the total sample, 66% were married and 71.7% did not have a permanent monthly income [Table 1]. During the EFA, KMO value was found to be 0.709 and the value of Bartlett’s test of Sphericity was 2090.33 and it was statistically significant at a 0.0001 level. Thus, the study sample was adequate to perform factor analysis. Out of 31 initial items, three items showed multiple cross-loadings and they were removed from the tool. The remaining 28 items were loaded into 8 factors. The extracted eight factors were considered as domains of the tool and named appropriately as (1) physical activity, (2) mental health, (3) nutritional intake, (4) dietary concerns, (5) social relationships, (6) risk behaviors, (7) health responsibility, and (8) body consciousness [Table 2]. Those eight domains jointly explained 57.07% of the total observed variance. The newly developed tool has been named the Healthy Lifestyle Profile Scale for Elderly (HLPSE) and it is presented in Annexure 1.

Table 2: Domains and respective items with their loading coefficient

Domain number	Name of the domain	Item number	Item in the domain	Loading coefficient
1	Physical activity	1	How often you followed a planned exercise program	0.825
		4	How often you did walk for at least 30 min per day	0.807
		6	How often you did do activities to stretch your body	0.804
		10	How often you did do activities such as gardening, jogging, cycling, swimming, and dancing	0.666
2	Mental health	27	To what extent you would prefer walking or cycling instead of using a motor vehicle when traveling to nearby places	0.598
		3	How often you got enough sleep	0.591
		13	To what extent you felt relaxed in day-to-day life	0.665
		18	To what extent you would like to engage with hobbies	0.432
3	Nutritional intake	19	To what extent you could bear things in life that cannot be changed	0.696
		20	To what extent you viewed your life in a positive way	0.647
		2	How often you ate at least 3 portions of vegetables per day	0.633
4	Dietary concerns	5	How often you ate at least 2 portions of fruits per day	0.486
		8	How often have you consumed milk or milk product	0.751
		9	How often you ate fish/meat/eggs	0.821
		17	To what extent you are concerned about consuming less sugar and sweet food items	0.632
5	Social relationships	22	To what extent you are concerned about eating less oily food items	0.679
		23	To what extent you are concerned about eating less salty food items	0.766
		24	To what extent you are concerned about drinking enough water	0.406
		14	To what extent you would like to discuss your problems with people close to you	0.402
6	Risk behaviors	16	To what extent you would like to participate in common activities organized in your community	0.846
		21	To what extent you would like to spend time with people close to you	0.848
		7	How often have you skipped your main meal	0.470
7	Health responsibilities	11	How often have you consumed alcoholic beverages	0.722
		12	How often have you chewed beetle	0.746
		26	To what extent you could pay attention to health-related media programs or articles	0.433
8	Body consciousness	28	To what extent you would adhere to medical advice from a doctor	0.753
		15	To what extent you are concerned of your body weight	0.622
		25	To what extent you would like to discuss symptoms or changes in your body with a doctor	0.519

Results of the confirmatory factor analysis

The eight-factor tool was administered to 290 participants out of selected 300. Thus, the nonresponse rate was 3.3%. The mean age and SD of the participants were 63 and 2.3, respectively. Out of them, 65.2% were females and most of the participants (73.8%) were married at the time of data collection. The sociodemographic characteristics of the participants are shown in Table 3. During the CFA the calculated values of all three types of fit indices were compared with accepted cutoff values as shown in Table 4. According to the results, the 8-factor structure of the HLPSE showed a satisfactory model fit.

Results of the reliability of the Healthy Lifestyle Profile Scale for Elderly

The Cronbach's alpha coefficient for the total tool was 0.772 and it ranged from 0.687 to 0.837 across the eight domains. The calculated ICC values for test-retest and interobserver reliabilities were above 0.94 and 0.91, respectively, and the reliability results of HLPSE are shown in Table 5.

DISCUSSION

The construct of healthy lifestyle has been discussed in the literature for many years and several studies have been carried out to investigate how to measure it in many countries.^[6-8] Researchers have emphasized the significance of developing context-specific instruments to assess healthy lifestyle while putting more attention on given socio-cultural determinants.^[19,20] In Sri Lanka, many lifestyle modification programs are targeted at young elderly but the unavailability of a valid and reliable tool to measure healthy lifestyle was a felt gap. Considering the requirements of the country, this study was conducted to develop and validate a tool to measure the healthy lifestyle objectively among the young elderly population residing in Sri Lanka.

An operational definition for the healthy lifestyle was made initially after going through literature and based on the consensus of local experts and the tool has been conceptualized on the developed definition. The definition enabled to accommodate many items from different facets of the healthy lifestyle of young elderly. The items for the present tool were identified following qualitative assessments and a literature review which also facilitated to capture of different aspects of the construct to be measured and more importantly gathering specific information relevant to the Sri Lankan context. A similar methodology was used by other researchers while developing tools relevant to their context.^[19] All selected items were evaluated by local experts, which enabled the recruitment of more relevant items for the newly developed HLPSE.

Table 3: Distribution of the sociodemographic characteristics of the participants in confirmatory factor analysis (n=290)

Sociodemographic characteristic	Frequency (%)
Age category (years)	
60–64	88 (30.3)
65–69	111 (38.3)
70–74	91 (31.4)
Gender	
Male	101 (34.8)
Female	189 (65.2)
Ethnicity	
Sinhala	283 (97.6)
Non-Sinhala	7 (2.4)
Religion	
Buddhist	216 (74.5)
Non-Buddhist	74 (25.5)
Current marital status	
Currently married	214 (73.8)
Not currently married	76 (26.2)
Level of education	
Less than O/L	203 (70.0)
Equal or above O/L	87 (30.0)
Current employment status	
Currently employed	44 (15.2)
Currently unemployed	246 (84.8)
Income status	
Have permanent monthly income	94 (32.4)
Not having a permanent monthly income	196 (67.6)
Chronic diseases status	
Presence of chronic diseases	259 (89.3)
Absence of chronic disease	31 (10.7)

O/L: Ordinary level

Table 4: The goodness of fit indices of the Healthy Lifestyle Profile Scale for Elderly in comparison to accepted model fit indices

Fit indices	Values of the HLPSE	Accepted values	Reference
Absolute fit indices			
χ^2/DF	1.51	<3	[21]
SRMR	0.059	<0.08	[15]
Goodness of fit index	0.89	>0.9	[15]
Parsimony fit index			
RMSEA	0.042	<0.08	[22]
Relative fit indices			
Comparative fit index	0.95	>0.9	[23]
Incremental fit indices	0.95	>0.9	[24]
Nonnormed fit index	0.94	>0.9	[23]
Normed fit index	0.87	>0.9	[15]

DF: Degree of freedom, SRMR: Standardized root mean square residual, RMSEA: Root mean square error of approximation, HLPSE: Healthy Lifestyle Profile Scale for Elderly

Items of the HLPSE are divided into actions and perceptions which is the unique feature of the tool when compared to other similar measurement tools. It is very important to consider both aspects when taking measurements to enhance the health and well-being of the study population. However,

Table 5: The results of the reliability assessment of the Healthy Lifestyle Profile Scale

Name of the domain	Cronbach's alpha	Test-retest reliability		Interobserver reliability	
		ICC value	95% CI	ICC value	95% CI
Overall HLPSE	0.772	0.94	0.87–0.97	0.91	0.84–0.97
Physical activity	0.815	0.94	0.88–0.97	0.99	0.97–0.99
Mental health	0.756	0.84	0.68–0.93	0.88	0.69–0.95
Nutritional intake	0.711	0.93	0.85–0.97	0.92	0.79–0.97
Dietary concerns	0.733	0.88	0.76–0.94	0.91	0.78–0.97
Social relationships	0.687	0.86	0.71–0.93	0.94	0.87–0.98
Risk behaviors	0.772	0.98	0.95–0.99	0.97	0.94–0.99
Health responsibilities	0.837	0.81	0.59–0.91	0.95	0.88–0.98
Body consciousness	0.819	0.89	0.77–0.95	0.84	0.59–0.94

CI: Confident interval, HLPSE: Healthy Lifestyle Profile Scale, ICC: Interclass correlation coefficient

in many similar tools, it was not possible to differentiate actions from perceptions and thus cannot be analyzed separately. In contrast to other tools, HLPSE gives the added advantage of an understanding of the two components separately thus permitting the planning of new interventions appropriately in the future.

HLPSE consists of eight domains that are consistent with the domains identified in other similar tools.^[6,8,19] Furthermore, the identified domains were consistent with the theoretical foundation and defined construct of the healthy lifestyle for young elderly. These eight domains explained about 57% of the cumulative variance which is similar to variances explained by other tools made to measure the same construct.^[19,25] Out of the total variance, the majority was explained by the physical activity domain that indicating the significance of it in relation to healthy lifestyle among Sri Lankan young elderly. A similar pattern was identified by Hwang and Peralta-Catipon as physical activity is the major contributory factor in the Health Enhancing Lifestyle Profile tool.^[26] However, in contrast to other instruments, in the HLPSE, items related to consuming good food are distinct from items of avoiding unhealthy food and were loaded separately to form two domains as nutritional intake and dietary concerns respectively. This shows that two components of diet and nutrition, which have been classified as a single domain in other tools, were seen differently by the Sri Lankan young elderly.

CFA was conducted as a way of ensuring the construct validity of the HLPSE and the same method was used by other researchers while developing their tool.^[27] The identified eight-factor structure was found to have a good model fit as evidenced by the results. Internal consistency is a measurement of the reliability of a composite tool that assesses the extent to which all items measure the same construct.^[28] The study showed an acceptable Cronbach's alpha value for all domains except social relationships. Somewhat

lower Cronbach's alpha for the social relationship domain might be explained by certain behavioral characteristics of the Sri Lankan young elderly associated with that dimension.

The HLPSE demonstrated good test–retest reliability which indicates the consistency of the measurements over time. Interobserver reliability is a more important measurement for the new scale since it has been developed as an interviewer-administered tool. The values of ICC in the overall scale and individual domains were well above the expected cutoff of 0.75^[18] which ensured the consistency of the measurements between investigators and also helped to eliminate interviewers' bias. Since the tool is developed as an interviewer-administered scale it is convenient to use even among the illiterate and less educated population. In the absence of a gold standard scale, it was not possible to assess the criterion validity of the tool which has been identified as a limitation of this study.

CONCLUSIONS

The HLPSE is a valid and reliable tool to assess the construct of healthy lifestyle among young elderly in Sri Lanka. It is suggested to validate the tool in other South Asian settings where similar socio-cultural profiles are observed. Thus, the tool could be applicable to assess healthy lifestyle among elderly and effectiveness of the lifestyle interventions in future.

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Conflicts of interest

There are no conflicts of interest.

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Annexure

Annexure 1: Questionnaire to assess healthy lifestyle profile among young elderly (aged 60 to 70 years)

Healthy Lifestyle Profile Scale for Elderly (HLPSE)

The following questions are about actions and perceptions related to your present way of life. The questionnaire consists of two parts. The part A consists of questions related to your actions and part B consists of questions related to your perceptions. Each question and relevant response will be read separately for you. Please think about the last 2 weeks period and give the most appropriate answers. Please try not to skip any questions.

Part A

The following questions are about actions related to your lifestyle. Please respond to each question separately based on how often you engaged with each action during the last 2-week period. Please respond as follows:

- 1 = Never (Did not engage during last 2 weeks)
2 = Rarely (Engaged 1 or 2 days during last 2 weeks)
3 = Sometimes (Engaged 3 to 5 days during last 2 weeks)
4 = Often (Engaged 6 to 9 days during last 2 weeks)
5 = Very often (Engaged 10 or more days during last 2 weeks)

Example:

How often you engaged in exercises?

Table with 5 columns: Never, Rarely, Sometimes, Often, Very often. Below each column is a number: 1, 2, 3, 4, 5.

If you engaged with 10 or more days during last 2-week period, give your response as "5"

1. How often you followed a planned exercise program?

Table with 5 columns: Never, Rarely, Some times, Often, Very often. Below each column is a number: 1, 2, 3, 4, 5.

2. How often you ate at least 3 servings of vegetables per day?

Table with 5 columns: Never, Rarely, Some times, Often, Very often. Below each column is a number: 1, 2, 3, 4, 5.

3. How often you got enough sleep?

Table with 5 columns: Never, Rarely, Some times, Often, Very often. Below each column is a number: 1, 2, 3, 4, 5.

4. How often you did walking at least 30 min per day?

Table with 5 columns: Never, Rarely, Some times, Often, Very often. Below each column is a number: 1, 2, 3, 4, 5.

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5. **How often you ate at least 2 servings of fruits per day?**

Never	Rarely	Some times	Often	Very often
1	2	3	4	5

6. **How often you did activities to stretch your body?**

Never	Rarely	Some times	Often	Very often
1	2	3	4	5

7. **How often you skipped your main meal?**

Never	Rarely	Some times	Often	Very often
5	4	3	2	1

8. **How often you consumed milk or milk proucts?**

Never	Rarely	Some times	Often	Very often
1	2	3	4	5

9. **How often you ate fish/ meat/eggs?**

Never	Rarely	Some times	Often	Very often
1	2	3	4	5

10. **How often you did activities such as gardening, jogging, cycling, swimming, dancing?**

Never	Rarely	Some times	Often	Very often
1	2	3	4	5

11. **How often you consumed alcoholic beverages?**

Never	Rarely	Some times	Often	Very often
5	4	3	2	1

12. **How often you chewed betel?**

Never	Rarely	Some times	Often	Very often
5	4	3	2	1

Part B

The questions in this part are about your perceptions related to your lifestyle. Please think about last 2-week period and respond each question based on to what extent they are related to you. Please respond as follows:

Example –

To what extent you would concern about your health?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

If you feel you would concerned about your health to some extent give your response as “3”

13. To what extent you felt relaxed in day to day life?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

14. To what extent you would like to discuss your problems with people close to you?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

15. To what extent you would concern of your body weight?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

16. To what extent you would like to participate in common activities organized in your community?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

17. To what extent you would concern about consuming less sugar and sweet food items?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

18. To what extent you would like to engage with hobbies?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

19. To what extent you could bear things in life that cannot be changed?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

20. To what extent you viewed your life in a positive way?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

21. To what extent you would like to spend time with people close to you?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

22. To what extent you would concern about eating less oily food items?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

23. To what extent you would concern about eating less salty food items?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

24. To what extent you would concern about drinking enough water?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

25. To what extent you would like to discuss symptoms or changes of your body with a doctor?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

26. To what extent you could pay attention to health-related media programs or articles?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

27. To what extent you would prefer walking or cycling instead of using a motor vehicle when traveling to nearby places?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5

28. To what extent you would adhere to medical advices from a doctor?

Not at all	To little extent	To some extent	To more extent	To great extent
1	2	3	4	5