



Research Article

DEVELOPMENT AND VALIDATION OF AN AYURVEDA-BASED HEALTH ASSESSMENT QUESTIONNAIRE (HAQ): A COMPREHENSIVE TOOL FOR ASSESSMENT OF SWASTHYA

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ABSTRACT

Ayurveda emphasizes the preservation of health through maintenance of equilibrium among *Dosha*, *Dhatu*, *Mala*, *Agni*, *Manas* and *Indriyas*. Although modern tools such as WHOQOL and SF-12 questionnaires are frequently used for health assessment, they do not comprehensively include Ayurvedic indicators such as *Agni*, mental equilibrium. **Aim:** The present study aimed to develop and validate an Ayurveda-based Health Assessment Questionnaire (HAQ) grounded in classical Ayurvedic concepts of *Swasthya*. **Materials and Methods:** The questionnaire was developed based on *Arogya Lakshana* from *Kashyapa Samhita*, *Dhatu Samya Lakshana*, *Sukhayu* and *Hitayu*, *Lakshana*, *Sadvrutta* from *Charaka Samhita*, and *Swastha Lakshana* from *Sushruta Samhita*. Initially, open-ended questions were administered to 50 volunteers. Based on responses and expert opinion, close-ended questions using a Likert scale were prepared. The questionnaire underwent validation in two phases using SPSS software. Reliability was assessed using Cronbach's alpha. The validated questionnaire was translated into Kannada and Hindi and further validated. **Results:** The initial questionnaire consisted of 107 items administered to 100 healthy volunteers. Internal consistency showed good reliability with a Cronbach's alpha value greater than 0.8. Factor analysis and data reduction techniques reduced the questionnaire to 42 items. The final questionnaire demonstrated acceptable reliability and validity for assessment of health from an Ayurvedic perspective. **Conclusion:** The Ayurveda Health Assessment Questionnaire (HAQ) provides a comprehensive, self-administered tool for assessing health status according to Ayurvedic principles. It may aid in early identification of health disturbances and promote preventive healthcare through lifestyle modifications.

INTRODUCTION

Health is considered the foundation for achieving the four *Purusharthas*- *Dharma* (righteousness), *Artha* (wealth), *Kama* (desire), and *Moksha* (salvation)^[1]. Ayurveda gives prime importance to preservation of health through the principle: "*Swasthasya Swasthya Rakshanam, Aturasya Vikara Prashamanam*"^[2]. The concept of *Swasthya* (health) in Ayurveda extends beyond the absence of disease and includes physical, mental, social, and

spiritual well-being. According to Sushruta: A person having balanced *Dosha* (fundamentals of life) proper *Agni* (digestive power), normal *Dhatu* (body elements) and *Mala* (excretory waste) functions, along with a pleasant state of *Atma* (soul), *Indriya* (sense organs) and *Mana* (mind), is considered health^[3]. Definitions of health, according to World Health Organization (WHO), a state of complete physical, mental, and social well-being and not merely the absence of disease^[4]. Although contemporary health assessment tools such as WHOQOL and SF-12 are widely used, these instruments lack assessment parameters specific to Ayurvedic principles such as *Agni* (digestive power), bowel habits, sleep quality, emotional balance, sensory clarity, and lifestyle conduct.

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The classical Ayurvedic texts describe various indicators of health under different contexts such as *Arogya Lakshana*^[5] (features of good health), *Dhatu Samya Lakshana*^[6] (features of maintaining equilibrium), *Sukhayu*^[7] (healthy life), *Hitayu*^[8] (beneficial life) and *Sadvrutta*^[9] (code of conduct). However, these indicators remain scattered throughout the *Brihatrayee* (3 main texts of Ayurveda) and are not integrated into a unified assessment tool. Hence, the present study was undertaken to develop and validate an Ayurveda-based Health Assessment Questionnaire (HAQ) incorporating classical Ayurvedic concepts of health.

OBJECTIVES

1. To develop a questionnaire for assessment of *Swastha Lakshana*^[3] (features of healthy individual) based on *Dhatu Samya Lakshana*^[6] (features of maintaining equilibrium), *Arogya Lakshana*^[5] (features of good health), *Sukhayu*^[7] (healthy life), *Hitayu*^[8] (beneficial life).
2. To assess the validity and reliability of the developed questionnaire in apparently healthy volunteers.
3. To prepare an Ayurveda Health Assessment Scale suitable for self-administration.

Review of Literature

Concept of Swasthya in Ayurveda: The term "Swastha" refers to a state of equilibrium and freedom from disease^[4]. The word originates from "Swa" (self) and "Stha" (established), implying one who is established in one's natural state^[5].

Arogya Lakshana of Kashyapa Samhita (features of good health)^[5]: *Annabhilasha* (desire to eat food), proper digestion of consumed food, normal evacuation of urine and feces, lightness of body, clarity and pleasantness of sense organs, sound sleep, peaceful state of mind, adequate physical strength

These indicators collectively reflect proper functioning of digestion, metabolism, elimination, and psychological balance.

Dhatu Samya Lakshana (features of maintaining equilibrium)^[6]: Acharya Charaka describes *Dhatu Samya Lakshana* as indicators of equilibrium in bodily tissues and physiological processes. These include: relief from pain, normal voice and complexion, proper nourishment of body tissues, increased strength, timely appetite, proper digestion, sound sleep, absence of abnormal dreams, pleasant awakening, proper elimination of urine, feces, flatus, and semen, proper functioning of mind, intellect, and sense organs. These features indicate optimal physiological and psychological functioning.

Sukhayu Lakshana (features of healthy life)^[7]:

According to *Charaka Samhita*, individuals enjoying a happy life possess:

Healthy body and mind, Youthfulness, Enthusiasm and courage, Physical strength, Healthy sensory functions, Wealth and resources, Freedom to perform desired activities, Knowledge and intellectual competence

Hitayu Lakshana (features for a beneficial life)^[8]:

Hitayu refers to beneficial or ideal living. Such individuals are truthful and peaceful, possess self-control, respect elders and teachers, practice charity and compassion, maintain emotional balance, avoid jealousy, anger, arrogance, and greed, engage in spiritual practices and acquisition of knowledge

MATERIALS AND METHODS

Study Design: The study was conducted in multiple phases for development and validation of the questionnaire.

Inclusion Criteria

- ✓ Healthy volunteers aged 18–60 years
- ✓ Either gender
- ✓ Individuals capable of reading and writing.
- ✓ Apparently healthy individuals.

Development of Questionnaire

The questionnaire was developed using classical references from: *Kashyapa Samhita*, *Charaka Samhita*, *Sushruta Samhita*. Domains and subdomains related to physical, mental, social, and behavioral health were identified.

Step 1: Preparation of Questionnaire: Open-ended questions were administered to 50 volunteers. Responses were analyzed and converted into close-ended items using a five-point Likert scale. Subject experts from *Samhita Siddhanta*, *Swasthavritta*, and *Kayachikitsa* evaluated the suitability of domains and questions.

Step 2: Validation- Phase I: The questionnaire containing 107 items was administered to 100 volunteers. Responses were analyzed using SPSS software. Factor analysis and reliability analysis were performed. Questions demonstrating acceptable internal consistency with Cronbach's alpha values above 0.6 were retained.

Step 3: Validation- Phase II: The revised questionnaire was administered to 200 volunteers. Cross-validation and variability analysis were conducted using SPSS software.

Step 4: Translation and Validation: The validated questionnaire was translated into Kannada and Hindi. Language experts verified the translations. The translated versions were administered to 50 volunteers each for further validation.

Statistical Analysis: Reliability of the questionnaire was assessed using Cronbach's alpha test. <0.5. Factor analysis was performed for data reduction and identification of relevant domains.

Interpretation of Cronbach's alpha: Excellent: >0.9,

Good: >0.8, Acceptable: >0.7, Poor: >0.5, Unacceptable:

Questionnaire (English)

Sri Kalabyraveshwara Swamy Ayurvedic Medical College, Hospital and Research Centre						
Development and Validation of Scale for Health Assessment Questionnaire (Ayurveda HAQ)						
Gender		Religion		Age		Occupation
Status Weight____Kg		Ht in cms._		B M I		Marital Status
Desha - Janmataha- Jangala/Anupa/Sadharana						
Pravruddataha- Jangala/Anupa/Sadharana						
Address: Permanent Postal address with phone number & email id						
I _____ have confirmed that the study has been explained to me adequately and I voluntarily taking part in this study						
Signature (Date: / /)						
S.No	Health assessment questionnaire					
1.	Do you pass bowels daily?	Yes (every day) -5	Quite often - 4	Very often-3	Sometimes- 2	Never -1
2.	Do you pass bowel without any difficulty?	Yes -5	Quite often - 4	Very often-3	Sometimes- 2	Never -1
3.	Do you pass hard stools?	Never-5	Sometimes - 4	Quite often-3	Very often - 2	Daily 1
4.	Do you pass stools once in 2/3/more days?	Never -5	Sometimes- 4	Quite Often-3	Very often -2	Yes -1
5.	Do you pass urine without any difficulty?	Yes -5	Quite often - 4	Very often-3	Sometimes- 2	Never - 1
6.	Do you pass flatus without any difficulty?	Yes -5	Very often - 4	Quite Often-3	Sometimes-2	Never -1
7.	Do you have bloating or gas in abdomen?	Never-5	Sometimes - 4	Quite often-3	Very often - 2	Always - 1
8.	How satisfied are you with your sex life?	Very satisfied-5	Satisfied- 4	Neither satisfied nor dissatisfied - 3	Dissatisfied - 2	Very dissatisfied -1
9.	Do you feel lightness in your body?	Yes -5	Very often-4	Quite often -3	Sometimes- 2	Never -1
10.	Do you have any difficulty in sensory perception?	Never-5	Sometimes - 4	Quite often-3	Very often - 2	Yes-1
11.	How satisfied are you with your sleep?	Very satisfied - 5	Satisfied-4	Neither satisfied nor dissatisfied - 3	Dissatisfied - 2	Very dissatisfied -1
12.	Do you get disturbed sleep?	Never -5	Sometimes- 4	Quite Often-3	Very often -2	Yes -1
13.	Are you able to wake up with ease everyday from bed ?	Yes - 5	Rarely - 4	Sometimes - 3	Most of the time - 2	Never -1

14.	Do you feel fresh when you awake from the sleep?	Yes -5	Very often-4	Quite often -3	Sometimes- 2	Never -1
15.	How much immune do you consider yourself?	Good immune – 5	Moderately immune-4	Less immune-3	Very less immune -2	Not at all immune – 1
16.	How often do you fall ill?	Never – 5	Sometimes-4	Quite often-3	Very often – 2	Most of the time - 1
17.	Do you find any change in your voice?	Never -5	Sometimes-4	Quite Often-3	Very often - 2	Yes -1
18.	Do you feel shift in complexion/glow frequently?	Never-5	Sometimes-4	Quite Often-3	Very often - 2	Yes -1
19.	Can you get over the disease or illness easily?	Yes, very soon - 5	Yes, I recover – 4	Yes but takes some time - 3	Yes but takes very long – 2	Never, needs very long time – 1
20.	Are you feeling tired (exhausted) at the end of the day by your daily activities?	Never- 5	Very often-4	Quite often - 3	Sometimes- 2	Yes -1
21.	Do you get Hunger at proper Time?	Never- 5	Very often-4	Quite often - 3	Sometimes - 2	Yes -1
22.	Are you able to perceive the taste of food properly?	Yes -5	Very often - 4	Quite often -3	Sometimes- 2	Never -1
23.	Do you feel the food you eat digests properly?	Yes -5	Very often - 4	Quite often -3	Sometimes- 2	Never -1
24.	Do you get unpleasant (bad) dreams?	Never-5	Sometimes - 4	Quite often-3	Very often - 2	Daily 1
25.	Do they disturb your sleep?	Never - 5	Rarely - 4	Sometimes – 3	most of the time – 2	Always -1
26.	Do you attached excessively with any person or materials?	Never-5	Sometimes - 4	Quite often-3	Very often - 2	Always 1
27.	Do you get angry easily?	Yes -5	Very often - 4	Quite often -3	Sometimes- 2	Never -1
28.	Do you cry easily for any reasons?	Never-5	Sometimes - 4	Quite often-3	Very often - 2	Always 1
29.	Do you have jealousy towards others?	Never-5	Sometimes - 4	Quite often-3	Very often - 2	Always 1
30.	Are you egoistic in nature?	Never-5	Sometimes - 4	Quite often-3	Very often - 2	Always 1
31.	Do you have good memory?	Yes -5	Quite often - 4	Very often-3	Sometimes- 2	Never -1
32.	How often do you	Rarely-5	Sometimes -	Quite often-3	Very often - 2	Always 1

	forget things?		4			
33.	Are you able to grasp the things easily?	Yes -5	Very often - 4	Quite often -3	Sometimes- 2	Never -1
34.	Are you think properly before initiating any work?	Yes -5	Very often - 4	Quite often -3	Sometimes- 2	Never -1
35.	Do you speak truth always?	Yes -5	Very often - 4	Quite often -3	Sometimes- 2	Never -1
36.	How well are you able to concentrate?	Yes -5	Very often - 4	Quite often -3	Sometimes- 2	Never -1
37.	Do you complete your works as per your plan?	Yes -5	Very often - 4	Quite often -3	Sometimes- 2	Never -1
38.	Do you respect elders?	Yes -5	Very often - 4	Quite often -3	Sometimes- 2	Not at all -1
39.	How often do you involve in charity?	Always -5	Very often-4	Sometimes- 3	RARELY - 2	Never -1
40.	Do you point out others mistakes & told that to some others?	Never-5	Sometimes - 4	Quite often-3	Very often - 2	Always 1
41.	Have you enough money to meet your needs?	Extreme - 5	Very much- 4	Moderate-3	Slightly-2	Not at all- 1
42.	How satisfied are you with the support you get from your friends?	Very satisfied-5	Satisfied - 4	Neither satisfied nor dissatisfied - 3	Dissatisfied - 2	Very dissatisfied - 1

OBSERVATION AND RESULTS

Distribution of the subjects in the study			
	Male	Female	Total
1 st round	27	72	99
2 nd round	35	138	173
3 rd round (Hindi)	17	33	50
Kannada	9	41	50
	88	284	372

The initial questionnaire contained 107 items covering various domains of health according to Ayurvedic principles. The questionnaire was administered to 100 healthy volunteers during the first validation phase.

All questions which were framed to assess health were Good with cron alpha value 0.8 observed in 99 responses.

In the second round the questionnaire was refined to 42 no for convenience and easy administration and applicability., repeated and questions which had Cronbach's Alpha value below 0.5 were deleted. Statistics are stated below for the final round of the study.

Reliability Statistics

Language	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items	Interpretation of the Cronbach's Alpha Based on Standardized Items	Reliable / non reliable
English Questionnaire	0.772	0.775	42	Acceptable	Reliable

Hindi Questionnaire	.836	.841	42	Good	Reliable
Kannada Questionnaire	.644	.773	42	Acceptable	Reliable

Reliability analysis demonstrated good internal consistency with Cronbach's alpha values greater than 0.8. Following factor analysis and data reduction procedures, the questionnaire was refined to 42 items while retaining important health indicators. The final questionnaire included domains related to:

- Physical health
- Digestive health
- Sleep and elimination
- Mental well-being
- Social conduct
- Lifestyle practices
- Emotional balance
- Sensory functioning

The translated Kannada and Hindi versions also demonstrated satisfactory reliability and comprehensibility among volunteers.

DISCUSSION

Ayurveda provides a comprehensive and holistic understanding of health. Unlike contemporary biomedical approaches that often focus on disease diagnosis, Ayurveda emphasizes maintenance of equilibrium and preventive healthcare. The present questionnaire integrates various dimensions of health described in classical Ayurvedic texts. In *Charaka Samhita*, *Dhatu Samya Lakshana*^[6] (features of maintaining equilibrium) describes indicators of balanced physiological functioning such as proper appetite, digestion, elimination, sleep, strength, complexion, and mental equilibrium. These signs collectively represent efficient metabolic and neuropsychological functioning. Kashyapa Samhita explains *Arogya Lakshana*^[5] (features of good health) emphasizing appetite, digestion, bowel habits, sound sleep, and clarity of sense organs. These indicators are clinically important because disturbances in *Agni* (digestive power) and elimination are considered early manifestations of disease. Similarly, *Sukhayu*^[7] (features of healthy life) and *Hitayu*^[8] (features for a beneficial life) *Lakshanas* expand the concept of health to include social, ethical, emotional, and spiritual dimensions. Mental peace, compassion, self-control, and truthful conduct are recognized as contributors to overall well-being. WHO definition recognizes physical, mental, and social well-being but lacks specific assessment of digestive function, sensory clarity, and behavioral discipline emphasized in *Ayurveda*. Therefore, the developed Ayurveda Health Assessment Questionnaire bridges this gap by incorporating both classical Ayurvedic indicators and multidimensional health assessment.

The questionnaire may be useful in: Assessment of overall health status, identification of early imbalance before disease manifestation, community-based screening programs, preventive healthcare practices, lifestyle counselling, Integrative medicine research

The high Cronbach's alpha values indicate strong internal consistency and reliability of the developed tool.

Advantages of Ayurveda Health Assessment Questionnaire

1. Incorporates classical Ayurvedic health indicators.
2. Assesses physical, mental, social, and behavioral dimensions.
3. Self-administered and easy to use.
4. Useful for preventive healthcare.
5. Available in regional languages.
6. Suitable for community-level screening.
7. Can be integrated into Ayurveda research studies.

CONCLUSION

The Ayurveda-based Health Assessment Questionnaire (HAQ) was successfully developed and validated using classical Ayurvedic principles of *Swasthya* (health). The questionnaire integrates indicators from *Arogya Lakshana* (features of good health), *Dhatu Samya Lakshana* (features of maintaining equilibrium) *Sukhayu* (healthy life) *Hitayu* (beneficial life) and *Swastha Lakshana* (features of healthy individual). It provides a multidimensional assessment of health encompassing physical, mental, social and behavioral well-being. The tool demonstrated good reliability and validity and may serve as a valuable instrument for health assessment, preventive healthcare, and Ayurvedic research. As a self-administered questionnaire available in regional languages, it has the potential to improve public awareness regarding health maintenance and early lifestyle correction.

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