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Development of a Questionnaire and its Content Validitation to Assess Ashta Ahara Vidhi Visheshayatana with Special Reference to Upayoga Samstha in Patients Suffering from Type-2 Diabetes Mellitus

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ABSTRACT

Aims and Objectives: The study aims to develop a comprehensive questionnaire to assess the Ashta Ahara Vidhi Visheshayatana (eight specific dietary considerations) with special reference to Upayoga Samstha (rules for consumption) in patients suffering from Type-2 Diabetes Mellitus (T2DM) and to establish its content validity.

Methods: A mixed-method approach was employed, involving qualitative and quantitative phases. Initially, an extensive literature review was conducted to identify relevant constructs and develop a preliminary questionnaire. This was followed by expert validation through the Delphi method to refine the items. Content validity was assessed using the Content Validity Index (CVI).

Results: The preliminary questionnaire consisted of 50 items. Through iterative rounds of expert review, the questionnaire was refined to 44 items. The overall CVI was found to be 0.90, indicating high content validity.

Conclusion: The developed questionnaire demonstrates good content validity and can be used to assess adherence to Ashta Ahara Vidhi Visheshayatana in patients with T2DM. Future studies should focus on its reliability and construct validity in larger populations.

INTRODUCTION

Type-2 Diabetes Mellitus (T2DM) is a chronic metabolic disorder characterized by hyperglycemia due to insulin resistance and relative insulin deficiency. Traditional Indian medicine, particularly Ayurveda, emphasizes the role of diet and lifestyle in the management of T2DM. The concept of Ashta Ahara Vidhi Visheshayatana (AAVV) outlines eight specific dietary considerations essential for maintaining health and managing diseases. Upayoga Samstha refers to the rules related to consumption of food.(1)

The objective of this study is to develop a validated questionnaire that assesses adherence to AAVV in patients with T2DM, providing a tool for integrating traditional dietary principles into modern diabetes management.

Methods

Literature Review

A comprehensive review of Ayurvedic texts and contemporary literature was conducted to identify constructs relevant to AAVV with specific reference to Upayoga Samstha. Key constructs included:

1. Jirna Ahara Lakshana
2. Ahara Vidhi vidhana
3. Nitya Sevaniya Dravyas

Acharya Charaka specifies that the Upayoga sanstha deals mainly with the Jirna Ahara Lakshana and further in the the Chakrapani commentery ahara vidhi and nitya sevaniya dravyas are also related to upayoga samstha (2,3)

Jirna Ahara Lakshana: [symptoms and signs of normal digestion] (4,5,6)

In the classical Ayurvedic text *Ashtanga Sangraha*, Matrasitiya Adhyaya (Chapter 11), Verse 69 describes the features of *Jirnahara Lakshana* (signs of proper digestion), emphasizing the presence of Udgara Shuddhi (clear belching), Utsaha (enthusiasm or physical vitality), Vegotsarga (unobstructed excretion of natural urges), Laghuta (a sense of lightness in the body), Kshut (appearance of natural hunger), and Pipasa (physiological thirst). Similarly, in *Madhava Nidana*, these features are reiterated in

Chapter 6 (Agnimandya Ajeerna Visuchika Alasaka Vilambika Nidana), identifying the same set of symptoms as key indicators of complete digestion. These parameters serve as clinical tools in Ayurveda to evaluate the state of *Agni* (digestive fire) and guide decisions regarding the timing of subsequent food intake.

Ahara Vidhi Vidhana (7)

1. Ushnam Ashniyat (Eat Warm Food)
2. Snigdham Ashniyat (Include Fats in Diet)
3. Matravat Ashniyat (Eat in Proper Quantity)
4. Jeerne Ashniyat (Eat Only After Digestion of Previous Meal)
5. Veerya Aviruddham Ashniyat (Avoid Incompatible Food Combinations)
6. Ishtadeshe Ishtasarvopkarnam Ashniyat (Eat in a Clean and Calm Environment)
7. Naatidrutam Ashniyat (Do Not Eat Too Fast)
8. Naativilambitam Ashniyat (Do Not Eat Too Slowly)
9. Ajalpan Ahasan Tanmanabhunjeet (Mindful Eating – No Talking or Laughing While Eating)
10. Atmanam Abhisamikshya Bhunjeet (Eat According to One's Own Needs)

Nitya Sevaniya Dravya[8]

Category	Dravya (Substances)
Shaka (Vegetables)	Paravata, Patola, Shigru (drumstick), etc.
Phala (Fruits)	Dadima (pomegranate), Amalaki (Indian gooseberry), Draksha (grapes)
Dhanya (Grains)	Shali (old rice), Yava (barley), Godhuma (wheat)
Peya (Beverages)	Ushnodaka (warm water), Takra (buttermilk)
Dugdha (Milk Products)	Ksheera (milk), Ghrita (ghee), Dadhi (curd - in moderation)
Sneha (Fats)	Ghrita (ghee), Tila Taila (sesame oil)
Lavana (Salt)	Saindhava Lavana (rock salt)
Madhu (Honey)	Madhu
Jala (Water)	Shuddha Ushna Jala (pure warm water)
Haritaki (Herb)	Haritaki
Trikatu (Spice mix)	Shunthi (dry ginger), Maricha (black pepper), Pippali (long pepper)
Laghupanchamula	Bilva, Shyonaka, Gambhari, Patala, Agnimantha
Amalaki (Herb/Fruit)	Amalaki (Indian gooseberry)

Questionnaire Development

Item Generation

Based on the identified constructs, a preliminary pool of 55 items was generated. Each item was designed to capture specific aspects of AAVV relevant to T2DM management. The items were framed in a simple and comprehensible manner, ensuring cultural relevance and appropriateness for the target population. For example:

"How often do you consume food before the digestion of previous meal?"

"How fast do you believe you eat?"

Pilot Testing

The preliminary questionnaire was pilot-tested on a small sample of 10 T2DM patients to check for clarity, relevance, and comprehensibility. Feedback from the pilot test was used to make necessary adjustments before proceeding to expert validation.

Expert Validation

Selection of Experts

A panel of 15 experts was selected based on their expertise in Ayurveda, nutrition, and diabetes management. The panel included Ayurvedic practitioners, dietitians, and researchers with significant experience in T2DM and dietary studies.

Delphi Method

The Delphi method was employed to achieve consensus among experts. This structured communication technique involved multiple rounds of questioning and feedback:

First Round: Experts reviewed the preliminary 55-item questionnaire independently, providing feedback on the relevance, clarity, and comprehensiveness of each item.

Second Round: Based on the feedback, items were revised, and a 50-item questionnaire was redistributed to the experts. They were asked to rate each item on a scale of 1 to 4 for relevance and provide additional comments.

Third Round: Further refinements were made, resulting in a 45-item questionnaire. Experts re-evaluated the items, focusing on the remaining contentious items.

The process continued until consensus was reached on the final 44 items.

Content Validity (9,10)

Content Validity Index (CVI)

The relevance of each item was rated on a scale of 1 (not relevant) to 4 (highly relevant). The Item-level Content Validity Index (I-CVI) was calculated as the proportion of experts rating the item as either 3 or 4. An I-CVI of 0.78 or higher was considered acceptable.

I-CVI Calculation: If 13 out of 15 experts rated an item as 3 or 4, the I-CVI would be 13/15 = 0.87.

S-CVI/Ave (Scale-level Content Validity Index/Average): The average of the I-CVI values for all items in the questionnaire.

The final questionnaire had an overall S-CVI/Ave of 0.90, indicating high content validity. Items with low I-CVI scores were either revised for clarity or removed.

Results

Expert Review and Refinement

The initial 50-item questionnaire underwent several rounds of expert review and refinement. Key changes included:

Language Adjustments: Simplifying technical terms and ensuring cultural relevance.

Item Relevance: Removing or modifying items that were not directly relevant to T2DM management.

Item Clarity: Rephrasing ambiguous items for better understanding.

The iterative process led to a refined 44-item questionnaire that adequately covered the constructs of AAVV and Upayoga Samstha.

Content Validity Index

The final 44-item questionnaire demonstrated high content validity with an S-CVI/Ave of 0.90. Individual items had I-CVI scores ranging from 0.80 to 1.00. This high level of agreement among experts suggests that the items are relevant and appropriate for assessing adherence to AAVV in T2DM patients.

DISCUSSION

The development and validation of this questionnaire represent a significant step towards integrating Ayurvedic dietary principles into modern diabetes management. The high content validity indicates that the questionnaire effectively captures the constructs of AAVV relevant to T2DM.

Limitations

This study is limited by the subjective nature of expert reviews and the initial focus on content validity. Future studies should assess the reliability and construct validity of the questionnaire in larger and more diverse populations.

Implications for Practice

The validated questionnaire can be used by healthcare practitioners to assess adherence to AAVV in T2DM patients, guiding dietary recommendations that align with traditional and modern medical practices.

CONCLUSION

The developed questionnaire demonstrates good content validity and provides a robust tool for assessing adherence to Ashta Ahara Vidhi Visheshayatana in patients with T2DM. Further research is required to validate its reliability and utility in clinical practice

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