

## Documents

Osman, N.S.<sup>a b</sup>, Md Nor, N.<sup>b c</sup>, Mustafa, N.<sup>a</sup>, Rusali, R.<sup>a</sup>, Ruzana, I.<sup>d</sup>

**HOSPITAL FOOD SERVICE QUALITY IMPROVEMENT QUESTIONNAIRE (HFSQIQ): DEVELOPMENT, TRANSLATION AND VALIDATION OF A QUESTIONNAIRE**

(2023) *Journal of Health and Translational Medicine*, 26 (Special Issue 2), pp. 196-211.

DOI: 10.22452/jummec.sp2023no2.22

<sup>a</sup> Department of Nutrition Sciences, Kulliyah of Allied Health Sciences, International Islamic University Malaysia, Bandar Indera Mahkota, Jalan Sultan Ahmad Shah, Kuantan, 25200, Malaysia

<sup>b</sup> Centre for Nutrition and Dietetics Studies, Faculty of Health Sciences, Universiti Teknologi MARA, Puncak Alam Campus, Puncak Alam, 42300, Malaysia

<sup>c</sup> Integrative Pharmacogenomics Institute (iPROMISE), Universiti Teknologi MARA, Puncak Alam Campus, Puncak Alam, 42300, Malaysia

<sup>d</sup> School of Health and Life Sciences, Teesside University, Middlesbrough, TS1 3BX, United Kingdom

**Abstract**

The hospital food service department provides meals to staff, patients, and their caregivers while adhering to dietary therapy guidelines and promoting nutritional wellness. High-quality food service plays a pivotal role in offering inpatients nourishing meals that promote physical and mental well-being, aiding their recovery and overall health during their hospitalisation. This study aimed to develop and validate a tool for measuring and evaluating hospital food operations using the Total Quality Management approach. A literature review, in-depth interviews with food service employees, and a peer-review process were conducted to identify the domains and items for the questionnaire. A "Hospital Food Service Quality Improvement Questionnaire" (HFSQIQ) with 61 items in six domains was developed and the content validation was performed by seven experts. The questionnaire was translated into Malay, and the internal consistency of the HFSQIQ was examined using Cronbach's alpha. Resultantly, the HFSQIQ depicted high validity and reliability, with a high I-CVI and Kappa index rating for most items and a Cronbach alpha value of 0.97 and 0.98 for the importance and performance scales, respectively. In conclusion, the HFSQIQ is a useful tool for evaluating and improving the quality of hospital food service operations. © 2023, Faculty of Medicine, University of Malaya. All rights reserved.

**Author Keywords**

Hospital Food Service; Quality Improvement; Questionnaire Development; Questionnaire Validation; Reliability; Total Quality Management

**Index Keywords**

article, Cronbach alpha coefficient, food service worker, hospital food service, human, human experiment, internal consistency, interview, peer review, questionnaire, reliability, total quality management, validity

**References**

- Gonçalves, JM, Rodrigues, KL, Almeida, ÂTS, Pereira, GM, Buchweitz, MRD.  
**Assessment of good practices in hospital food service by comparing evaluation tools**  
(2015) *Nutricion Hospitalaria*, 32 (4), pp. 1796-1801.
- Dall'Oglio, I, Nicolò, R, Di Ciommo, V, Bianchi, N, Ciliento, G, Gawronski, O  
**A systematic review of hospital foodservice patient satisfaction studies**  
(2015) *Journal of the Academy of Nutrition and Dietetics*, 115 (4), pp. 567-584.
- Zahran, SE, Bakr, ESH.  
**Suitability of patient's meals for patients' diagnosis and food quality services evaluation in hospitals**  
(2021) *Bioscience Research*, 18 (1), pp. 773-781.  
2021
- Barker, LA, Gout, BS, Crowe, TC.  
**Hospital malnutrition: prevalence, identification and impact on patients and the healthcare system**

- (2011) *International Journal of Environmental Research and Public Health*, 8 (2), pp. 514-527.
- Lai, H, Gemming, L.  
**Approaches to patient satisfaction measurement of the healthcare food services: A systematic review**  
(2021) *Clinical Nutrition ESPEN*, 42, pp. 61-72.
  - Banks, M, Hannan-Jones, M, Ross, L, Buckley, A, Ellick, J, Young, A.  
**Measuring the quality of hospital food services: Development and reliability of a Meal Quality Audit Tool**  
(2017) *Nutrition and Dietetics*, 74 (2), pp. 147-157.
  - Huang, JS, Chun, S, Cheung, C, Poon, L, Terrones, L.  
**The nutritional value of food service meals ordered by hospitalized children**  
(2016) *Clinical Nutrition ESPEN*, 15, pp. 122-125.
  - Ahmed, M, Jones, E, Redmond, E, Hewedi, M, Wingert, A, El Rab, MG.  
**Food production and service in UK hospitals**  
(2015) *International Journal of Health Care Quality Assurance*, 28 (1), pp. 40-54.
  - Aminuddin, NF, Vijayakumaran, RK, Razak, SA.  
**Patient Satisfaction with hospital foodservice and its impact on plate waste in public hospitals in East Malaysia**  
(2018) *Hospital Practices and Research*, 3 (3), pp. 90-97.
  - Batra, M, Taneja, U.  
**The role of services cape on emotions and satisfaction of patients in Indian Hospitals**  
(2022) *Journal of Health Management*, 24 (3), pp. 433-439.
  - Messina, G, Fenucci, R, Vencia, F, Niccolini, F, Quercioli, C, Nante, N.  
**Patients' evaluation of hospital foodservice quality in Italy: what do patients really value?**  
(2013) *Public Health Nutrition*, 16 (4), pp. 730-737.
  - Tamby Chik, C, Zulkipli, NA, Bachok, S, Mohi, Z, Mohd Shahril, A.  
**Plate Waste in Public Hospitals Foodservice Management in Selangor, Malaysia**  
(2019) *Malaysia Article in Indian Journal of Science and Technology*, 11 (36), pp. 1-5.
  - Vijayakumaran, RK, Eves, A, Lumbers, M.  
**Patients Emotions during Meal Experience: Understanding through Critical Incident Technique**  
(2016) *International Journal of Hospital Research*, 5 (4), pp. 113-121.
  - Vijayakumaran, RK, Eves, A, Lumbers, M.  
**Understanding Patients' Meal Experiences through Staff's Role: Study on Malaysian Public Hospitals**  
(2018) *Hospital Practices and Research*, 3 (2), pp. 50-58.
  - Balasubramanian, M.  
**Total Quality Management [TQM] in the Healthcare Industry – Challenges, Barriers and Implementation Developing a Framework for TQM Implementation in a Healthcare Setup**  
(2016) *Science Journal of Public Health*, 4 (4), p. 271.
  - Rapo, S, Sydner, YM, Kautto, E, Hörnell, A.  
**Exploring patient satisfaction with hospital foodservice: A Swedish study using the Acute Care Hospital Foodservice Patient Satisfaction Questionnaire**  
(2021) *Nutrition and Dietetics*, 78 (5), pp. 487-495.

- Jamaluddin, R, Abd Manan, NA, Basri, AM, Ab Karim, MS.  
**Patients' satisfaction with the bulk trolley system in a government hospital in Malaysia**  
(2010) *Leadership in Health Services*, 23 (3), pp. 260-268.
- Lee, JE.  
**Importance-performance analysis of evaluation indicators in Hospital Nutrition Department**  
(2012) *J Korean Diet Assoc*, 18 (4), pp. 326-343.
- Diez-Garcia, RW, Japur, CC, Tavares de Medeiros, MA.  
**Food and nutritional care quality indicators in hospital**  
(2013) *Journal of Hospital Administration*, 2 (3), pp. 132-141.
- Lee, JE.  
**Importance-performance analysis on foodservice management items of the dieticians at long-term care hospitals**  
(2016) *Indian Journal of Science and Technology*, 9 (26), pp. 1-7.
- Park, MS, Lyu, ES.  
**Importance and performance of dietitian's Task at long term care hospital foodservice in Busan · Kyungnam Area**  
(2011) *Korean Journal of Community Nutrition*, 16 (5), pp. 602-612.
- Osman, NS, Md Nor, N, Md Sharif, MS, Rahamat, S, Abdul Hamid, SB.  
**Barriers and challenges of an outsource hospital foodservice operation: A narrative thematic analysis**  
(2022) *Malaysian Journal of Medicine and Health Sciences*, 18, pp. 97-107.  
(SUPP15)
- Yusoff, MSB.  
**ABC of Content Validation and Content Validity Index Calculation**  
(2019) *Education in Medicine Journal*, 11 (3), pp. 49-54.
- Polit, DF, Beck, CT, Owen, SV.  
**Focus on research methods: Is the CVI an acceptable indicator of content validity? Appraisal and recommendations**  
(2007) *Research in Nursing and Health*, 30 (4), pp. 459-467.
- Polit, DF, Beck, CT.  
**The content validity index: Are you sure you know what's being reported? Critique and recommendations**  
(2006) *Research in Nursing and Health*, 29 (5), pp. 489-497.  
2006
- Lynn, MR.  
**Determination and quantification of content validity**  
(1986) *Nursing Research*, 35, pp. 382-385.
- Yusoff, MSB, Arifin, WN, Hadie, SNH.  
**ABC of questionnaire development and validation for survey research**  
(2021) *Education in Medicine Journal*, 13 (1), pp. 97-108.
- Sousa, VD, Rojjanasrirat, W.  
**Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: A clear and user-friendly guideline**  
(2011) *Journal of Evaluation in Clinical Practice*, 17 (2), pp. 268-274.
- Yusoff, MSB.  
**ABC of response process validation and face validity index calculation**  
(2019) *Education in Medicine Journal*, 11 (3), pp. 55-61.

- Marzuki, MFM, Yaacob, NA, Yaacob, NM.  
**Translation, cross-cultural adaptation, and avalidation of the Malay version of the System Usability Scale Questionnaire for the assessment of mobile apps**  
(2018) *JMIR Human Factors*, 5 (2).
- Bonett, DG.  
**Sample size requirements for testing and estimating coefficient alpha**  
(2002) *Journal of Educational and Behavioral Statistics*, 27 (4), pp. 335-340.
- El Hajjar, ST.  
**Statistical analysis: internal-consistency reliability and construct Validity**  
(2018) *International Journal of Quantitative and Qualitative Research Methods*, 6 (1), pp. 46-57.
- Martilla, JA, James, JC.  
**Importance-performance analysis**  
(1977) *Journal of Marketing*, 41 (1), pp. 77-79.
- Halek, M, Holle, D, Bartholomeyczik, S.  
**Development and evaluation of the content validity, practicability and feasibility of the innovative dementia-oriented assessment system for challenging behaviour in residents with dementia**  
(2017) *BMC Health Services Research*, 17 (554), pp. 1-26.
- Zamanzadeh, V, Ghahramanian, A, Rassouli, M, Abbaszadeh, A, Alavi-Majd, H, Nikanfar, AR.  
**Design and implementation content validity study: Development of an instrument for measuring Patient-Centered Communication**  
(2015) *Journal of CarignSceicnes*, 4 (2), pp. 165-178.
- Davis, LL.  
**Instrument review: Getting the most from a panel of experts**  
(1992) *Applied Nursing Research*, 5, pp. 194-197.
- Wynd, CA, Schaefer, MA.  
**The Osteoporosis Risk Assessment Tool: establisging content validity through a panel of Experts**  
(2002) *Applied Nursing Research*, 16 (2), pp. 84-188.
- Barrett, D, Heale, R.  
**What are Delphi studies?**  
(2020) *Evid Nased Nurs*, 23 (3), pp. 68-69.

**Correspondence Address**

Md Nor N.; Integrative Pharmacogenomics Institute (iPROMISE), Puncak Alam Campus, Malaysia; email: azmir2790@uitm.edu.my

**Publisher:** Faculty of Medicine, University of Malaya

**ISSN:** 18237339

**Language of Original Document:** English

**Abbreviated Source Title:** J. Health Transl. Med.

2-s2.0-85172668250

**Document Type:** Article

**Publication Stage:** Final

**Source:** Scopus