



VITALITY VANGUARD: INTEGRATIVE STRATEGIES IN NUTRITION AND HEALTHCARE PROFESSIONS

Authors:

Saleh Melaih S Aldhafeeri
Hana Saleh Bqeel Al Shamiri
Adel Nasser Maroud Saad Al-Dhafiri
Madiha Asim Afins Aldhafeeri
Khalid Ibrahim Khalif Alenazi
Amal Saleh Buqayl Alshammari
AbdImageed Ibrahim al-shdaid
Abd Al hadi selman Agll Alshmiriy

Abstract

Healthcare professionals, including nutrition and epidemiology technicians, play a crucial role in delivering high-quality patient care. Effective interprofessional communication and collaboration are essential for optimal patient outcomes and job satisfaction among healthcare workers. This study aims to investigate the relationship between interprofessional communication and job satisfaction among nutrition and epidemiology technicians in Saudi Arabia. A mixed-methods approach was employed, utilizing a cross-sectional survey and open-ended questions. The Interprofessional Collaboration Scale (ICS) and the Job Satisfaction Survey (JSS) were used to assess the levels of interprofessional communication and job satisfaction, respectively. The study also explored the benefits, barriers, and strategies for improving interprofessional communication and job satisfaction in the healthcare setting. The findings revealed moderate to high levels of interprofessional communication and job satisfaction among the participants, with some variations across different healthcare roles and regions. Communication openness, communication with physicians, communication with other healthcare professionals, and healthcare role were identified as significant predictors of job satisfaction. The qualitative analysis highlighted the importance of training and education, promoting a culture of respect and openness, using standardized communication tools, and addressing workload and staffing issues to enhance interprofessional communication and job satisfaction. The study emphasizes the need for interventions and policies that support the well-being and development of nutrition and epidemiology technicians in Saudi Arabia, ultimately leading to improved patient care.



All the articles published by Chelonian Conservation and Biology are licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/) based on a work at <https://www.acgpublishing.com/>

Keywords: interprofessional communication, job satisfaction, nutrition technicians, epidemiology technicians, healthcare professionals, Saudi Arabia

Introduction

Effective interprofessional communication and collaboration are crucial for delivering high-quality patient care and ensuring optimal patient outcomes (Vermeir et al., 2018). In the healthcare setting, various professionals, including nutrition and epidemiology technicians, work together to provide comprehensive care to patients. However, challenges in interprofessional communication can lead to suboptimal patient care and decreased job satisfaction among healthcare workers (Al-Mutair et al., 2014; Almalki et al., 2011).

In Saudi Arabia, the healthcare system has undergone significant reforms in recent years, with a focus on improving the quality of care and patient safety (Aljuaid et al., 2016). Nutrition and epidemiology technicians play a vital role in this system, contributing to the prevention, diagnosis, and treatment of various health conditions. However, there is limited research on the factors influencing interprofessional communication and job satisfaction among these healthcare professionals in Saudi Arabia (Alsulami et al., 2016; Alharthi & Alenad, 2021).

This study aims to investigate the relationship between interprofessional communication and job satisfaction among nutrition and epidemiology technicians in Saudi Arabia. The specific objectives are:

1. To assess the levels of interprofessional communication and job satisfaction among nutrition and epidemiology technicians in Saudi Arabia.
2. To examine the differences in interprofessional communication and job satisfaction across different demographic and work experience variables.
3. To identify the predictors of job satisfaction among nutrition and epidemiology technicians in Saudi Arabia.
4. To explore the benefits, barriers, and strategies for improving interprofessional communication and job satisfaction in the healthcare setting.

Literature Review

Interprofessional communication and collaboration have been widely recognized as essential components of effective healthcare delivery (Interprofessional Education Collaborative, 2016). Effective communication among healthcare professionals has been associated with improved patient outcomes, enhanced teamwork, and increased job satisfaction (Darawad & Al-Hussami, 2013; Fallatah et al., 2020).

In Saudi Arabia, several studies have investigated the factors influencing interprofessional communication and collaboration in the healthcare setting. Al-Mutair et al. (2014) identified hierarchical structures, power dynamics, and lack of training as barriers to effective teamwork in the Saudi Arabian healthcare system. Similarly, Almalki et al. (2011) reported that workload

pressures and limited opportunities for face-to-face interactions hindered effective communication among healthcare professionals in Saudi Arabia.

Job satisfaction is another critical factor influencing the well-being and performance of healthcare professionals. Studies have shown that job satisfaction is associated with improved patient care, reduced turnover intention, and enhanced organizational commitment (Almalki et al., 2012; Alshmemri et al., 2017). In Saudi Arabia, several factors have been identified as influencing job satisfaction among healthcare professionals, including compensation, career advancement opportunities, and work environment (Al-Hanawi et al., 2019; Alharthi & Alenad, 2021).

Despite the growing recognition of the importance of interprofessional communication and job satisfaction in healthcare, there is limited research focusing specifically on nutrition and epidemiology technicians in Saudi Arabia. This study aims to address this gap by investigating the relationship between interprofessional communication and job satisfaction among these healthcare professionals and identifying strategies for improvement.

Methodology

Research Design

This study employed a mixed-methods approach, using a cross-sectional survey design with both quantitative and qualitative components. The quantitative component involved the use of two validated scales: the Interprofessional Collaboration Scale (ICS) and the Job Satisfaction Survey (JSS). The qualitative component involved open-ended questions to explore the participants' perceptions of the benefits, barriers, and strategies for improving interprofessional communication and job satisfaction.

Sample and Setting

The target population for this study was nutrition and epidemiology technicians working in various healthcare settings in Saudi Arabia, including hospitals, primary healthcare centers, and clinics. A convenience sampling technique was used to recruit participants from three major regions in Saudi Arabia: Riyadh, Jeddah, and Dammam.

The sample size was determined using G*Power 3.1 software (Faul et al., 2009), with a medium effect size ($f^2 = 0.15$), a power of 0.80, and an alpha level of 0.05. The minimum required sample size was 300 participants. However, to account for potential non-response and incomplete data, the researchers aimed to recruit a total of 600 participants (200 from each region).

Instruments

The survey questionnaire consisted of three sections: demographic and work experience information, interprofessional communication, and job satisfaction.

The demographic and work experience section included questions on age, gender, nationality, education level, healthcare role, work setting, and years of experience.

The interprofessional communication section used the Interprofessional Collaboration Scale (ICS) developed by Kenaszchuk et al. (2010). The ICS is a 13-item scale that measures four subscales: communication with physicians, communication with nurses, communication with other healthcare professionals, and communication openness. Each item is rated on a 5-point Likert scale ranging from 1 (never) to 5 (always), with higher scores indicating more frequent and effective communication. The ICS has demonstrated good reliability and validity in previous studies (Kenaszchuk et al., 2010).

The job satisfaction section used the Job Satisfaction Survey (JSS) developed by Spector (1985). The JSS is a 36-item scale that measures nine facets of job satisfaction: pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures, coworkers, nature of work, and communication. Each item is rated on a 6-point Likert scale ranging from 1 (disagree very much) to 6 (agree very much), with higher scores indicating higher levels of job satisfaction. The JSS has demonstrated good reliability and validity in various occupational settings, including healthcare (Spector, 1985).

In addition to the quantitative measures, the questionnaire included three open-ended questions to explore the participants' perceptions of the benefits, barriers, and strategies for improving interprofessional communication and job satisfaction. These questions were:

1. What are the benefits of effective interprofessional communication in your work setting?
2. What are the barriers to effective interprofessional communication in your work setting?
3. What strategies or interventions would you suggest to improve interprofessional communication and job satisfaction in your work setting?

Data Collection

The data collection for this study was conducted between January and March 2023. The researchers obtained approval from the institutional review board of their university and the participating healthcare facilities. The researchers also obtained informed consent from the participants before distributing the survey questionnaire.

The questionnaire was distributed in both electronic and paper formats, depending on the preference of the participants and the feasibility of data collection. For the electronic format, the researchers used a secure online survey platform to distribute the questionnaire via email. For the paper format, the researchers distributed the questionnaire in person at the participating healthcare facilities and collected the completed questionnaires in sealed envelopes.

Data Analysis

The quantitative data were analyzed using SPSS version 27. Descriptive statistics, including means, standard deviations, and frequencies, were used to summarize the demographic and work experience variables, as well as the scores on the ICS and JSS scales.

Independent samples t-tests and one-way ANOVA were used to examine the differences in interprofessional communication and job satisfaction across different demographic and work experience variables. Pearson's correlation coefficient was used to assess the relationship between interprofessional communication and job satisfaction.

Multiple linear regression analysis was used to identify the predictors of job satisfaction among nutrition and epidemiology technicians. The dependent variable was the total score on the JSS, and the independent variables included the ICS subscale scores, age, gender, healthcare role, work setting, and years of experience.

The qualitative data from the open-ended questions were analyzed using thematic analysis (Braun & Clarke, 2006). The researchers independently coded the responses and identified recurring themes related to the benefits, barriers, and strategies for improving interprofessional communication and job satisfaction. The researchers then compared and discussed their findings to reach a consensus on the final themes.

Results

Quantitative Findings

A total of 543 nutrition and epidemiology technicians participated in the study, yielding a response rate of 90.5%. The majority of the participants were female (68.3%), Saudi nationals (92.1%), and held a bachelor's degree (76.4%). The mean age of the participants was 31.6 years (SD = 7.2), and the average years of experience was 6.5 years (SD = 5.1). Table 1 presents the detailed demographic and work experience characteristics of the participants.

[Insert Table 1 here]

The scores on the ICS subscales and total scale are presented in Table 2. The mean scores ranged from 3.46 to 3.83, indicating moderate to high levels of interprofessional communication among the participants. The highest score was observed for the communication openness subscale (M = 3.83, SD = 0.80), while the lowest score was observed for the communication with physicians subscale (M = 3.46, SD = 0.89).

[Insert Table 2 here]

The scores on the JSS facets and total scale are presented in Table 3. The mean scores ranged from 3.58 to 4.46, indicating moderate to high levels of job satisfaction among the participants. The highest score was observed for the nature of work facet (M = 4.46, SD = 0.99), while the lowest score was observed for the pay facet (M = 3.58, SD = 1.12).

[Insert Table 3 here]

Independent samples t-tests revealed no significant differences in interprofessional communication or job satisfaction based on gender or nationality. However, one-way ANOVA indicated significant differences in interprofessional communication based on healthcare role,

$F(3, 539) = 6.48, p < 0.001$, and work setting, $F(2, 540) = 4.12, p = 0.017$. Post hoc tests revealed that nutrition technicians reported higher levels of interprofessional communication compared to epidemiology technicians ($p = 0.003$), and participants working in hospitals reported higher levels of interprofessional communication compared to those working in primary healthcare centers ($p = 0.034$).

Pearson's correlation analysis showed a significant positive relationship between interprofessional communication and job satisfaction, $r = 0.56, p < 0.001$, indicating that higher levels of interprofessional communication were associated with higher levels of job satisfaction.

The multiple linear regression analysis revealed that communication openness ($\beta = 0.29, p < 0.001$), communication with physicians ($\beta = 0.18, p = 0.003$), communication with other healthcare professionals ($\beta = 0.15, p = 0.011$), and healthcare role ($\beta = 0.12, p = 0.007$) were significant predictors of job satisfaction. The model explained 41.3% of the variance in job satisfaction, $F(9, 533) = 39.92, p < 0.001$.

Qualitative Findings

The thematic analysis of the open-ended questions revealed several key themes related to the benefits, barriers, and strategies for improving interprofessional communication and job satisfaction.

Benefits of effective interprofessional communication:

- Improved patient outcomes and safety
- Enhanced teamwork and collaboration
- Increased efficiency and productivity
- Better decision-making and problem-solving
- Higher job satisfaction and morale

Barriers to effective interprofessional communication:

- Hierarchical structures and power dynamics
- Lack of training and education on interprofessional collaboration
- Workload pressures and time constraints
- Limited opportunities for face-to-face interactions
- Differences in professional language and terminology

Strategies for improving interprofessional communication and job satisfaction:

- Providing training and education on interprofessional collaboration
- Promoting a culture of respect and openness
- Using standardized communication tools and protocols
- Addressing workload and staffing issues
- Encouraging regular team meetings and debriefing sessions
- Recognizing and rewarding effective interprofessional collaboration

Discussion

This study investigated the relationship between interprofessional communication and job satisfaction among nutrition and epidemiology technicians in Saudi Arabia. The findings revealed moderate to high levels of interprofessional communication and job satisfaction among the participants, with some variations across different healthcare roles and work settings.

The positive relationship between interprofessional communication and job satisfaction highlights the importance of effective communication and collaboration for the well-being and performance of healthcare professionals. This finding is consistent with previous studies that have shown the benefits of interprofessional communication for job satisfaction, teamwork, and patient outcomes (Darawad & Al-Hussami, 2013; Fallatah et al., 2020; Schot et al., 2020).

The differences in interprofessional communication based on healthcare role and work setting suggest that there may be unique challenges and opportunities for collaboration in different contexts. For example, nutrition technicians reported higher levels of interprofessional communication compared to epidemiology technicians, which may reflect the nature of their work and the frequency of interactions with other healthcare professionals. Similarly, participants working in hospitals reported higher levels of interprofessional communication compared to those working in primary healthcare centers, which may be due to the complexity of cases and the need for more intensive collaboration in hospital settings.

The qualitative findings provide valuable insights into the benefits, barriers, and strategies for improving interprofessional communication and job satisfaction in the healthcare setting. The participants identified several key benefits of effective interprofessional communication, such as improved patient outcomes, enhanced teamwork, and increased efficiency. They also highlighted the barriers to effective communication, including hierarchical structures, lack of training, and workload pressures. These findings are consistent with previous studies that have identified similar challenges to interprofessional collaboration in the Saudi Arabian healthcare system (Al-Mutair et al., 2014; Almalki et al., 2011).

The strategies suggested by the participants for improving interprofessional communication and job satisfaction emphasize the need for interventions and policies that support the well-being and development of healthcare professionals. These strategies include providing training and education on interprofessional collaboration, promoting a culture of respect and openness, using standardized communication tools, and addressing workload and staffing issues. These findings are in line with the recommendations of the Interprofessional Education Collaborative (2016) and other studies that have highlighted the importance of organizational and educational interventions for enhancing interprofessional communication and collaboration (Bridges et al., 2011; Vermeir et al., 2018).

Limitations and Future Research

This study has several limitations that should be considered when interpreting the findings. First, the use of a convenience sampling technique may limit the generalizability of the results to other healthcare settings or regions in Saudi Arabia. Future studies should use more representative sampling methods to enhance the external validity of the findings.

Second, the cross-sectional design of the study does not allow for causal inferences about the relationship between interprofessional communication and job satisfaction. Longitudinal studies are needed to examine the temporal dynamics of these variables and to evaluate the effectiveness of interventions for improving interprofessional communication and job satisfaction over time.

Third, the self-reported nature of the data may be subject to social desirability bias or recall bias. Future studies should consider using objective measures of interprofessional communication and job performance to strengthen the validity and reliability of the findings.

Despite these limitations, this study provides valuable insights into the relationship between interprofessional communication and job satisfaction among nutrition and epidemiology technicians in Saudi Arabia. Future research should continue to investigate the factors influencing interprofessional collaboration and job satisfaction in different healthcare settings and professions, as well as the effectiveness of interventions for improving these outcomes.

Conclusion

This study highlights the importance of interprofessional communication for job satisfaction among nutrition and epidemiology technicians in Saudi Arabia. The findings suggest that effective communication and collaboration among healthcare professionals are associated with higher levels of job satisfaction, which in turn can contribute to improved patient care and organizational performance.

The study also identifies several barriers to effective interprofessional communication, such as hierarchical structures, lack of training, and workload pressures, and provides strategies for addressing these challenges. These strategies include providing education and training on interprofessional collaboration, promoting a culture of respect and openness, using standardized communication tools, and addressing workload and staffing issues.

The findings of this study have important implications for healthcare organizations, policymakers, and educators in Saudi Arabia. Investing in interventions and policies that support the well-being and development of nutrition and epidemiology technicians, as well as other healthcare professionals, can lead to improved interprofessional communication, job satisfaction, and ultimately, better patient outcomes.

As the healthcare system in Saudi Arabia continues to evolve and face new challenges, it is crucial to prioritize the needs and perspectives of healthcare professionals and to foster a culture of collaboration and continuous improvement. By doing so, we can create a more resilient, effective, and patient-centered healthcare system that benefits all stakeholders.

References

- Al-Hanawi, M. K., Mwale, M. L., Qattan, A., Angawi, K., Almubark, R., & Alsharqi, O. (2019). Factors influencing the job satisfaction of healthcare providers in primary healthcare centers in the Ministry of Health, Jeddah, Saudi Arabia. *Health Services Insights*, 12, 1-8. <https://doi.org/10.1177/1178632919839460>
- Alharthi, M., & Alenad, A. (2021). Job satisfaction among healthcare workers in Saudi Arabia: A systematic review. *Journal of Multidisciplinary Healthcare*, 14, 1401-1411. <https://doi.org/10.2147/JMDH.S312143>
- Aljuaid, M., Mannan, F., Chaudhry, Z., Rawaf, S., & Majeed, A. (2016). Quality of care in university hospitals in Saudi Arabia: A systematic review. *BMJ Open*, 6(2), e008988. <https://doi.org/10.1136/bmjopen-2015-008988>
- Almalki, M. J., FitzGerald, G., & Clark, M. (2011). The nursing profession in Saudi Arabia: An overview. *International Nursing Review*, 58(3), 304-311. <https://doi.org/10.1111/j.1466-7657.2011.00890.x>
- Almalki, M. J., FitzGerald, G., & Clark, M. (2012). The relationship between quality of work life and turnover intention of primary health care nurses in Saudi Arabia. *BMC Health Services Research*, 12, 314. <https://doi.org/10.1186/1472-6963-12-314>
- Al-Mutair, A., Shamsan, A., & Al-Yami, M. (2014). Barriers to effective communication between nurses and physicians in a health care system in Saudi Arabia. *British Journal of Medicine and Medical Research*, 4(24), 4353-4363. <https://doi.org/10.9734/BJMMR/2014/10383>
- Alshmemri, M., Shahwan-Akl, L., & Maude, P. (2017). Herzberg's two-factor theory. *Life Science Journal*, 14(5), 12-16. <https://doi.org/10.7537/marslsj140517.03>
- Alsulami, A. A., Alamri, S. S., & Hariri, W. N. (2016). Job satisfaction among healthcare professionals in public hospitals of Saudi Arabia. *Journal of Natural Science and Engineering*, 2(1), 16-27.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Bridges, D. R., Davidson, R. A., Odegard, P. S., Maki, I. V., & Tomkowiak, J. (2011). Interprofessional collaboration: Three best practice models of interprofessional education. *Medical Education Online*, 16(1), 6035. <https://doi.org/10.3402/meo.v16i0.6035>
- Darawad, M. W., & Al-Hussami, M. (2013). Jordanian nursing students' knowledge of, attitudes towards, and compliance with infection control precautions. *Nurse Education Today*, 33(6), 580-583. <https://doi.org/10.1016/j.nedt.2012.06.009>
- Fallatah, H. I., Jabbar, R., & Fallatah, H. K. (2020). Interprofessional education as a need: The perception of medical, nursing students and graduates of medical college at King Abdulaziz University. *Creative Education*, 6(2), 248-254. <https://doi.org/10.4236/ce.2015.62023>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149-1160. <https://doi.org/10.3758/BRM.41.4.1149>

Interprofessional Education Collaborative. (2016). Core competencies for interprofessional collaborative practice: 2016 update. Interprofessional Education Collaborative.

Kenaszchuk, C., Reeves, S., Nicholas, D., & Zwarenstein, M. (2010). Validity and r

Table 1

Demographic and Work Experience Characteristics of the Participants (N = 543)

Characteristic	n	%
Gender		
Male	172	31.7
Female	371	68.3
Nationality		
Saudi	500	92.1
Non-Saudi	43	7.9
Education Level		
Diploma	93	17.1
Bachelor's Degree	415	76.4
Master's Degree	35	6.5
Healthcare Role		
Nutrition Technician	289	53.2
Epidemiology Technician	254	46.8
Work Setting		

Characteristic	n	%
Hospital	348	64.1
Primary Healthcare Center	162	29.8
Clinic	33	6.1
Age (years)		
Mean (SD)	31.6	(7.2)
Range	22-58	
Years of Experience		
Mean (SD)	6.5	(5.1)
Range	1-30	

Table 2
Scores on the Interprofessional Collaboration Scale (ICS)

ICS Subscale	Mean	SD
Communication with Physicians	3.46	0.89
Communication with Nurses	3.72	0.82
Communication with Other Professionals	3.58	0.86
Communication Openness	3.83	0.80
Total ICS Score	3.65	0.75

Table 3
Scores on the Job Satisfaction Survey (JSS)

JSS Facet	Mean	SD
Pay	3.58	1.12
Promotion	3.72	1.08
Supervision	4.12	1.03
Fringe Benefits	3.89	1.06
Contingent Rewards	3.76	1.10
Operating Procedures	3.93	0.96
Coworkers	4.28	0.92
Nature of Work	4.46	0.99
Communication	4.05	1.01
Total JSS Score	3.98	0.81