

INPATIENTS' PERSPECTIVE OF FOODSERVICE QUALITY IN SELECTED PUBLIC HOSPITALS OF SOUTH AFRICA'S GAUTENG PROVINCE: A GENDER COMPARISON

Maupi E Letsoalo* & Lindi J Ncube

ABSTRACT

The purpose of this cross-sectional comparative quantitative study was to determine male and female inpatients' perspectives of hospital foodservice quality, as measured by five dimensions of foodservice quality; namely, tangibles, reliability of the foodservice system, responsiveness of the foodservice system, empathy, and attitude of the foodservice personnel. The study, in selected public hospitals in Gauteng province, is based on secondary data from the superordinate study that used a proportional sampling technique for data collection. The dataset used here contained 147 (66 [44.90%] female, 68 [46.26%] male and 13 [8.84%] undisclosed) anonymous inpatients. Wilcoxon-Mann-Whitney test analysis revealed that male inpatients had significantly different perceptions of tangibles, empathy, attitude, and responsiveness than their female counterparts. Contrary to their female counterparts, male inpatients were of opinion that service staff informed them of menu served ($p = 0.0034$), staff provided consistent service ($p = 0.0115$), tray looked attractive ($p = 0.0401$), and that service staff informed them of the nutritional value of food items ($p = 0.0078$). In contrast to their male counterparts, females thought crockery ($p = 0.0258$) and cutlery ($p = 0.0410$) looked clean, service staff explained food items on the menu ($p = 0.0001$), staff responded when patients asked for help ($p < 0.0001$), service staff greeted them when they served them with meals ($p = 0.0063$) and service staff treated them with respect ($p < 0.0001$). Inpatient gender is, therefore, an important factor associated with inpatient experiences and expectations. This study recommended that managers should consider developing a new policy that is targeted, unlike the current one that follows the "one size fits all" notion. Future studies may consider a representative sample of Gauteng province's hospitals and a mixed-methods study, that will give voice to inpatient experiences, is recommended.

— Dr ME Letsoalo *

ORCHID ID: 0000-0003-3934-0750
Centre for Academic Excellence (CAE)
University of Limpopo
Private Bag X1106
Sovenga
0727
South Africa
Email: MaupiELetsoalo@gmail.com
*Corresponding author

— Dr LJ Ncube

ORCHID ID: 0000-0002-9317-1807
Department of Human Nutrition and Dietetics
Sefako Makgatho Health Sciences University
Ga-Rankuwa
0208
South Africa
Tel: +27 (0)35 902 6003
Email: lindie.ncube@smu.ac.za

ARTICLE INFO

Submitted September 2019
Revision June 2020
Accepted May 2021

KEYWORDS

gender, inpatients' perspectives, patient satisfaction, foodservice quality

INTRODUCTION

Since 1994, South Africa has been divided into nine provinces from four earlier provinces. Gauteng province is the smallest of them all and covers an area of 18178 km² or approximately 1.4% of the total surface area of South Africa. It is bordered by the Free State, North West, Limpopo, and Mpumalanga provinces (Adeyemi, Botai, Ramoelo, Van der Merwe, & Tsela, 2015).

This province is the most populous (Hall & Sambu, 2018) with different cultural and racial groups; bringing about demands for foodservice provision that meets the different preferences, behaviours, choices, acceptability, and nutritional needs of each patient admitted to hospital (Jiyana, Ncube, & Nesamvuni, 2018). The province is made up of three metropolitan municipalities: The City of Ekurhuleni, City of Johannesburg, and City of Tshwane Metropolitan Municipalities, as well as two district municipalities. These two municipalities are divided into six local municipalities (Adeyemi et al., 2015).

Prior to 1994, healthcare services delivery including foodservice was based on racial lines whereby black South Africans received inferior quality healthcare. According to Ncube and Letsoalo (2019), the focus of healthcare services delivery has deliberately shifted from racial to gender differences. Ideally, male and female inpatients should have similar positive perceptions of foodservice; thus, it is expected that the quality of foodservice must not be biased towards either male or female inpatients. However, nutritional needs and patients' perceptions of foodservice quality based on gender, have been neglected for years; they are not considered when planning menus and delivering meals to patients in public hospitals. Furthermore, there is a dearth of literature on the differences between male and female perceptions regarding hospital foodservice quality. Most of the studies addressing this phenomenon are not focused on healthcare foodservices but university catering and restaurants. Hence, the impetus of this study was to compare the perceptions of male and female inpatients regarding foodservice quality.

Foodservice is the serviced food and beverage provision purchased out of home, which may be consumed both in and out of the home (Edwards, 2013). In a healthcare context, foodservice is viewed as a subsystem operating within the health care system, responsible for the provision of meals that meet patient's nutritional needs as per regulatory requirements, that are culturally and religiously acceptable, and which should be enjoyed by patients (Brown, 2015). In this paper, foodservice is a system that operates within the healthcare system with a responsibility to provide inpatients

with appropriate, wholesome, and nutritious meals (Puckett, 2004).

Hospital foodservice quality is a healthcare service or product that is to meet the nutritional requirements of patients and it is measured by the discrepancies between patients' nutrient consumption and their nutritional requirements (Kim, Kim, & Lee, 2010). Foodservice quality may be described as whether the intended recipients feel they get what they expect from the process (Mosadeghrad, 2013). Furthermore, quality in healthcare is a result of cooperation between patients and the healthcare provider in a conducive environment whereby medical science and technology being applied in a manner that maximises its benefit to health without correspondingly increasing the risk (Mosadeghrad, 2013). Shafie and Rennie (2012) reported that food consumers are interested in taste, freshness, appearance, nutritional value, and food safety. However, the focus of interest among the consumers may vary in different societies, different gender groups, and at different times. Therefore, good healthcare quality is the provision of appropriate services in a technically competent manner to (in)patients (Shafie & Rennie, 2012). Together with, good communication, shared decision-making, as well as cultural and gender sensitivity should be observed.

Moreover, the meals must be acceptable and meet inpatients' preferences; as well as provide a "dining experience conducive to patients' satisfaction and pleasure" (Fatimah, Boo, Sambasivan, & Salleh, 2011). To achieve this, the hospital foodservice system must be tailored to meet the personal food preferences of patients. Meals that were specifically prepared to meet patients' needs may increase their satisfaction and food consumption levels, and ultimately their nutritional and health status. According to Ahoya and Situma (2015), patients' dissatisfaction with hospital foodservice may lead to malnutrition, severe illness, longer hospital stays, food wastage, and increased costs

Conventional food quality properties can assist to stimulate patients' appetite and satisfaction with foodservices. Consequently, the provision of foodservice that meets or exceeds patients' expectations is considered essential for quality

foodservice and may also increase their level of food consumption (Dall'Oglio et al., 2015; Ncube, Nesamvuni, & Manafe, 2017). Accordingly, foodservice quality has become an important aspect in assessing patients' perceptions as they are constantly expecting their foodservice needs to be fulfilled (Mosadeghrad, 2013; Mosadeghrad, 2014; Ncube & Letsoalo, 2019).

Myriad factors influence (in)patients' satisfaction: these include patients' attitude, emotions, and perceptions of foodservice. (Ncube & Letsoalo, 2019). Thus, "understanding patient emotions and taking them into account when delivering meals may have a significant outcome in hospital nutrition"; thus, as highlighted by Ahmad, et al (2011), "foodservice assessment is essential since it makes shortcomings obvious and could improve staff understanding of foodservice systems that include the emotions of their consumers".

Food and other aspects of foodservice delivery are significant contributors to patients' perceptions of hospital experience (Dall'Oglio et al. 2015). Further, researchers indicated that "healthcare teams have a daily commitment to deliver appropriate food to improve patients' level of satisfaction". Studies have investigated the influence of gender on perceptions of foodservice quality. They reported that males and females have differing perceptions of foodservice quality. For example, in Gauteng province's restaurants - Du Plooy, De Jager, and Van Zyl (2013) reported similar average ratings for service quality between males and females. In the USA, Josiam, Foster, Malave, and Baldwin (2014) found a significant difference between male and female customers' service quality perceptions of restaurants. Mokhlis' (2012) results supported the assertion that "gender affects service quality perceptions and the relative importance attached to dimensions of service quality"; viz, empathy, tangibles, and reliability. In the South African healthcare context – Ncube and Letsoalo (2019) revealed that male and female patients had differing experiences and expectations of foodservice quality.

Menu descriptors may be used to enhance the patients' food desirability perception (Hartwell & Edwards, 2009). Sloan (2007) suggested

descriptors such as fresh, local, artisan, house-made, seasonal, natural, and organic, all designed to indicate enhanced food characteristics. Therefore, as asserted by Kalargyrou, Barber, and Kuo (2018), patient judgments of food and foodservice may be manipulated by the terminology used and if the association is favourable, then the resulting "halo effect" may influence both pre-consumption and post-consumption. Hartwell and Edwards (2009), in a study assessing consumer's perceptions towards descriptive menus and branding in hospital foodservice; suggest that an unfamiliar meal would not be based on a brand name but also by the implementation of strategies for encouraging increased food consumption and enhancing pre-meal arousal; particularly in settings such as hospitals – where poor nutrition is well documented, which could result in greater acceptance hence, patient's satisfaction.

Wandel and Bugge (1997) reported that consumers (of food items) are interested in some community-oriented aspects of consumption such as environmentally sound food production. On the other hand, poor meal consumption in hospitals may be because of food that was served at pre-set times when patients were not ready to eat (Merriweather, Salisbury, Walsh, & Smith, 2014). Further, poor meal consumption may not be directly linked to the quality of food. As McLymont, Cox, and Stell (2003) highlighted; it may be due to "patients' missing a meal because they were either sleeping or not in the room when the food was served". Therefore, food is left uneaten, implying food waste is increased. This may result in patients not receiving the essential nutrients needed to recover from illness. As underscored by Williams and Waltons (2011), plate waste is highly correlated with clinical conditions of patients, inappropriate portion sizes, and limited menu choices.

Naithani, et al. (2008) reported that inpatients often experience the feeling of being hungry, and they experience difficulty in accessing food. These problems generally remain hidden because staff fails to notice; for patients are reluctant to request assistance. In their study that sought to (a) identify the psychological dimensions representing how patients perceive the quality of foodservice; (b) identify which

dimensions best explain variation in the satisfaction ratings of patients; and (c) identify subgroups based on individual characteristics of patients and contextual factors, Dubé, Trudeau, and Bélanger (1994) reported that food quality was the best predictor of patient's satisfaction with meals and foodservice, followed by customisation and attitude of the staff who deliver menus. Furthermore, personal tributes such as gender, age, and education, and contextual factors that include normal or therapeutic diet, time spent at rest, and appetite, influenced patient satisfaction. An essential component in successful catering management is customer satisfaction, a complex phenomenon in a hospital setting since it is influenced by many factors (Hartwell, Edwards, & Symonds, 2006).

Health practitioners or healthcare givers need to be mindful of patients' nutritional status to accelerate the healing process (Suza & Asrizal, 2019). As argued by Jiyana, et al., (2018), patients' health and recovery through the provision and consumption of healthy and nourishing meals, remain the most pivotal objectives for the hospital foodservice unit, because they are used as a yardstick to measure the success of the hospital healthcare system. Simanjuntak, Aulia, and Siagian (2020) reiterated that the hospital foodservice system is a supporting part of health services which is part of medical therapy. Nutritional status and provision and consumption of healthy food remain important components of foodservice programme in hospitals.

Patient foodservice quality satisfaction was previously overlooked as nursing quality and the quality of technical medical care were more commonly acknowledged in the research (Abdelhafez, et al., 2012); however, nowadays, it is given more attention when assessing the quality of healthcare services. There has been debate about the quality of hospital foodservice as a common problem in some parts of the world, and patients of many hospitals being malnourished, and not satisfied with the food provided by the hospitals, (Dall'Oglio et al., 2015; Ncube, Nesamvuni & Manafe, 2017; Porter and Ottrey, 2017; Aminuddin, Razak & Vijayakumaran, 2018; Ncube & Nesamvuni, 2019). Furthermore, as highlighted by Ncube and Letsoalo (2019), satisfaction may be

“regarded as a patient's judgment of whether foodservice meets their needs and expectations or not”. The discrepancy between expected and perceived foodservice quality may cause the patients to be dissatisfied. Further, as highlighted by Ncube and Nesamvuni (2019), and Hartwell and Edwards (2009), patients may feel that they have “minimal control and that they have minimal information when eating catered provision”.

Service quality is crucial in any business as it helps create the bond between consumers of the service and the service provider (Phiri & Mcwabe, 2013). A service can be offered by any business, whose aim is to satisfy customer needs (Phiri & Mcwabe, 2013). Patients' satisfaction is therefore a fundamental component of the healthcare process and signifies the relationship between patients' expectations and the actual service experience. Thus, the public healthcare sector (as a non-profit organization) is becoming increasingly concerned about quality enhancements to meet intensified patients' demands for foodservice excellence. Accordingly, the service is considered appropriate if its expected health benefits exceed its expected health risks (Mosadeghrad, 2013).

South Africa's National Health Insurance is gradually being introduced for a unified, equitable, more affordable, and accessible healthcare system for the South African population, demanding for the transformation of the national healthcare delivery and all its relevant institutions including the foodservices (Young, 2016). Therefore, the beneficiaries of public health services can opt to purchase private insurance and be treated at private healthcare facilities, where they can be offered perks and services (including foodservices such as “selective menus” instead of a set or non-selective menus) offered in public healthcare. Even though foodservice quality is perceived differently by males and females, patients are constantly looking for quality products and foodservices tailored to satisfy their needs (Mosadeghrad, 2014, p. 77); there are no studies in South Africa that assessed female and male inpatient's foodservice quality perceptions. Hence, the impetus of this study.

STUDY OBJECTIVES

This study was intended to spark a (robust) debate regarding hospital foodservice in populous settings, such as Gauteng province, that attract different people from diverse backgrounds. This stems from the fact that the empirical data used is very sparse. This study evaluated male and female inpatients' perspectives of hospital foodservice delivery in some selected public hospitals in the Gauteng province of South Africa. In particular, the study examined male and female hospital foodservice quality experiences in Gauteng province. Their perception of the dimensions: tangibles, foodservice, staff responsiveness, staff empathy, and staff attitude were evaluated. The following question was formulated: do male and female patients differ with respect to their perceptions of (1) tangibles (2) foodservice system reliability (3) staff responsiveness (4) staff empathy, and (5) staff attitude?

MATERIALS AND METHODS

Study design or research design may be defined as a general plan about what the study intends to do to answer the research question (Cohen, Manion, & Morrison, 2007). Its important elements include research strategies and methods related to data collection and analysis. Since this study was not aimed at providing final and conclusive answers to research questions; then it was said to be an exploratory study. Therefore, this quantitative, cross-sectional, comparative, and exploratory study (Cohen, Manion, & Morrison, 2007) used sparse secondary data. Data are said to be sparse if they are not representative of the population from which they were sampled, and they are not normally distributed [see Greenland, Mansournia, & Altman, 2016]. Cross-sectional studies are simple in design and are aimed at finding out the prevalence of a phenomenon, problem, attitude, or issue by taking a snapshot or cross-section of the population. This obtains an overall picture as it stands at the time of the study. The primary data from the initial dataset or superordinate study were collected using structured questionnaires. The initial dataset comprised data sampled from public hospitals in South Africa's six provinces. Gauteng province is the most populous province with a population

that comes from varying backgrounds and cultures. The questionnaire was piloted, and the validity and reliability of the instrument were established through the test for internal consistency using Cronbach's alpha, with a cut-off point of 0.60 (Sijtsma, 2009; McCrae, Kurtz, Yamagata, & Terracciano, 2011).

A combination of Epi-Info Version 7 and Stata software packages was used for data encoding and management. Stata Release 15 (StataCorp, 2015) was used for data analysis. All items that measured patients' perceptions or opinions were visual-analogue-scaled, marked from 0 [minimum] to 10 [maximum]. Shapiro-Wilk W test was used to test for normality (Brzezinski, 2012). Wilcoxon-Mann-Whitney test was used to compare the perceptions of male and female patients (Newson, 2006; Conroy, 2012). The interpretation of results was performed at a 0.05 error rate.

Ethical considerations

Ethical approval was granted by the Tshwane University of Technology Research Ethics Committee (Ref. No. 2009=08=003=NcubeLJ). Approval from the Gauteng province was granted by the Gauteng Provincial Research Ethics Committee. Participation in this study was voluntary. All ethics principles that include anonymity and confidentiality principles were assured to participants.

Results and interpretation

The instrument that was used for data collection was found to be reliable at Cronbach's alpha of 0.9220. Table 1 presents the detailed result of Cronbach's alpha per subthemes of the instrument.

Descriptive statistics

All descriptive statistics were given as counts and proportions (expressed as percentages) for categorical variables, and minimum, median, and maximum for continuous variables. The sparse secondary data used in this study contained 147 (66 [44.9%] female and 68 [46.3%] male and 13 [8.8%] undisclosed) inpatients. Strictly, the number of male patients was marginally higher than that of female counterparts (68 [50.8%] vs. 66 [49.3%]). Thus,

TABLE 1: TEST FOR INTERNAL CONSISTENCY

Subtheme	Number of items (%)	Alpha
Tangible	5 (16.67)	7.8310
Reliability	8 (26.67)	0.8830
Responsive	4 (13.33)	0.6608
Empathy	5 (16.67)	0.6176
Attitude	3 (10.00)	0.8328
Overall	5 (16.67)	0.9052
Total Items	30 (100.00)	0.9220

TABLE 2: DISTRIBUTION OF PARTICIPANTS ACCORDING TO DISTRICTS

District	Female		Male		Total (%)
	Count	Percent	Count	Percent	
East Rand	25	47.17	28	52.83	53 (39.55)
Ekurhuleni	10	47.62	11	52.38	21 (15.67)
Sedibeng	8	47.06	9	52.94	17 (12.69)
Tshwane	14	63.64	8	36.36	22 (16.42)
West Rand	9	42.86	12	57.14	21 (15.67)
Total	66	49.25	68	50.75	134 (100.00)

TABLE 3: ITEMS THAT THE PARTICIPANTS WERE NOT ENTIRELY HAPPY OR SATISFIED

Variable	Item	P25	P50 ^a	P75	IQR ^b
v21	The service staff informed me about hospital mealtimes	0	0	2	2
v24	Where you informed of the delays of the meal service	0	2	8	8
v34	I am treated with respect by the service staff while I am served my meal	0	0	0	0
v41	The service staff explains the food items on the different menus	0	0	0.5	0.5
v44	The service staff handles my special requests	0	0	0	0
v67	My problem was resolved satisfactorily	0	5	10	10

^aP50 is the median and ^bIQR is the Interquartile range

data analysis focused only on 134 inpatients who disclosed their gender status. Data were collected from district hospitals, as presented in Table 2.

Most (75/134; 56%) of the inpatients who disclosed their gender status were from the Tshwane and East Rand districts. In particular, the East Rand district contributed about 39.6% (53/134) of male and female participants and the Tshwane district contributed 16.4% (22/134) of male and female inpatients. Otherwise, the Sedibeng district contributed 17 (12.7%) of inpatients who disclosed their gender-status.

Table 3 presents the 25th, 50th, and 75th percentiles of all items that participants rated at or below 50% on the scale of 0 to 10, where 10 indicates that the participant has a strong positive feeling about the item (affirm) and zero indicates strongly disagree. Together with the percentiles, it also displays the interquartile range (IQR) which is a measure of where the "middle fifty percent of observation" is in a data

set. Therefore, inpatients were dissatisfied with the reliability of the foodservice system (two items: V21 and V24), the empathy of service staff (two items: V41 and V44), and one item for each of responsiveness (V34) and the overall satisfaction with the quality of foodservice.

Inferential statistics

The Pearson chi-square test result, as presented in Table 4, indicates that gender and age were significantly associated (Pearson = 8.7572; $p = 0.003$); thus, the proportion of males to the proportion of females was significantly different in the age categories. Particularly, 57 (85.1%) males were aged over 21 years as compared to their 40 (81.7%) female counterparts. This relationship did not intend to test the effect of age on hospital foodservice quality, but to established if there was sufficient evidence that participants' ages differed significantly. Thus, the study compared the perceptions of groups of inpatients who were not of the same age.

TABLE 4: TEST FOR AN ASSOCIATION BETWEEN GENDER AND AGE

Age (year)	Female		Male		Total
	Count	Percent	Count	Percent	
Less than 18	4	44.44	5	55.56	9
18 to 20	5	50.00	5	50.00	10
21 to 30	16	66.67	8	33.33	24
Over 30	24	32.88	49	67.12	73
Total	49	42.24	67	57.76	116

Pearson $\chi^2_{(3)} = 8.7572$; $P = 0.003$

TABLE 5: SIGNIFICANT DIFFERENCES BETWEEN MALE AND FEMALE INPATIENTS

Variable	Item	Rank-sum		p-value
		Female	Male	
V1.4	My tray looks attractive	2817.5	4085.5	0.0401
V1.6	The cutlery used for service of food is clean	2950.0	4676.0	0.0014
V1.7	The crockery used for service of food is clean	3196.0	4430.0	0.0258
V2.1	The service staff informed me about hospital mealtimes	3966.5	3173.5	< 0.0001
V3.2	The service staff responds when I ask for help	3871.5	3388.5	< 0.0001
V3.3	The service staff informs me of the nutritional value of food items on the different menus	2966.5	4659.5	0.0078
V3.4	I am treated with respect by the service staff while I am served my meal	3655.5	3484.5	< 0.0001
V4.1	The service staff explains the food items on different menus.	3767.5	3492.5	0.0001
V4.2	The service staff informs me of the menu served by the hospital	2639.5	3801.5	0.0034
V4.3	The service staff is providing consistent food services to me	3193.5	4681.5	0.0115
V5.3	The service staff greets me when they serve me with meals	2952.0	4551.0	0.0063

Tangibles

Males rather than their female counterparts thought the crockery (Rank-sum: 4430 vs. 3196; $p = 0.0258$) and the cutlery (Rank-sum: 4676 vs. 2590; $p = 0.0014$) used for the service of food were clean. Also, males thought the tray looked attractive (Rank-sum: 4085.5 vs. 2817.5; $p = 0.0401$).

Responsiveness

As compared to their male counterparts, females thought the service staff responded when patients asked for help (Rank-sum: 3871.5 vs. 3388.5; $p < 0.0001$). Also, they thought they were treated with respect by the service staff (Rank-sum: 3871.5 vs. 3388.5; $p < 0.0001$). The service staff informed male inpatients of the nutritional value of food items on the different menus more than they did to the female inpatients (Rank-sum: 2966.5 vs. 4659.5; $p = 0.0078$).

Empathy

Males believed the service staff informed them of the menu served by the hospital more than they did to their female counterparts (Rank-sum: 2639.5 vs. 3801.5; $p = 0.0034$). Also, they thought that the staff provided them with

consistent service than they did to their female counterparts (Rank-sum: 3193.5 vs. 4681.5; $p = 0.0115$). On the other hand, females thought the service staff explained the food items on the different menus more than their male counterparts did (Rank-sum: 3767.5 vs. 3492.5; $p = 0.0001$).

Attitude

As compared with their male counterparts, females acknowledged that service staff greeted them when they served them (Rank-sum: 2952.0 vs. 4551.0; $p = 0.0063$). Of the three items that measured the service staff's attitude, only one was found to be significantly associated with the inpatients' gender (see Table 5 or V5.3). Otherwise, males and females had similar perceptions of the service staff's attitude.

The results from the Wilcoxon-Mann-Whitney test, as performed at a 5% error rate, revealed that male and female inpatients had differing perceptions of hospital foodservice.

CONCLUSION AND RECOMMENDATIONS

In view of the findings of this study, based on the literature review and the empirical investigation, it can be concluded that: may

Tangibles are a significant factor for hospital foodservice quality, especially the cleanliness of crockery, trays, and cutlery. A comparison of males and females on the responsiveness of the system indicated that responsiveness was an important factor for hospital foodservice quality. Service staff needs to respond to inpatients when they ask for assistance, treat inpatients with respect, and inform them of the nutritional value of food items. Empathy was found to be an important factor that is associated with hospital foodservice quality. Thus, it is important to inform male and female inpatients of the menu and explain the nutrient content of menu food items, to provide them with consistent services. Once patients are informed about the menu and the nutritional value explained to them, the appetite may be triggered and the possibility that food consumption might increase (and plate waste might decrease) might be high. Consequently, consumption of nutritious food is positively related to the accelerated healing process (Suza & Asrizal, 2019).

In a similar study that used medians as descriptive measure at the country-level, Ncube and Nesamvuni (2019) reported that inpatients were not informed about mealtimes, had to wait longer than expected for their meals, and were not informed about delays, menu items were not explained to inpatients, and inpatients were not informed about nutritional values. Therefore, the results of this study are somewhat like those of Ncube and Nesamvuni (2019). The results of this study were achieved using robust inferential statistics at the provincial level. The two studies reported that empathy and responsiveness remain important factors for hospital foodservice quality. In essence, males seemed to be happy with the provided service and the information provided by service staff. On the other hand, females thought the service staff explained food items on the menu. The service staff may need to undergo continuous professional development to improve their skills on the element of empathy such that differences between males and females become insignificant.

This study reinforced the importance of quality service provision in an aesthetically pleasing environment. This study showed that male and female inpatients have differing preferences and perceptions. The cleanliness of cutlery and crockery used for serving food; the attractiveness of the tray; being informed of the nutritional value of different menu items and the menu being served by the hospital; and consistent service provision; influenced male inpatient's foodservice quality perceptions. While the female inpatient's foodservice quality perceptions were influenced by the staff response when they asked for help; the respect they were treated with by the service staff; and the explanation of different menu food items by service staff. Therefore, this difference should be a message to the foodservice managers and all stakeholders that they are dealing with two distinct segments of inpatients and should be accounted for when providing inpatients with foodservice. A targeted approach, through policy implementation, that seeks to address gender differences or preferences may prove to be vital in dealing with foodservice quality in public hospitals. When these differences have been accounted for then food would meet inpatients' needs, as would be presented appropriately, and consumed in a pleasant environment.

A study that uses models that account for the effect of varying factors that include age, socio-economic status, and educational status may prove to be plausible to model the inpatients' perception of hospital foodservice. Those models may include multivariable regression models and structural equation models. Further, future studies may be encouraged to follow the qualitative design, or both qualitative and quantitative designs (i.e., a mixed-methods designed study).

CHALLENGES AND LIMITATIONS

Extrapolation or generalisation of this study-results may only apply to situations like those in the selected hospitals; for the used dataset was sparse. Although the analysis of data was carried out using robust and nonparametric statistical techniques; analysis of the larger representative dataset that used multivariate technique(s), especially under a qualitative or

mixed-method designed study, may confirm, or yield differing results.

CONFLICT OF INTEREST

The authors declare that they have no financial or personal relationship(s) that could have influenced them in writing this article.

ACKNOWLEDGMENTS

The authors would like to thank Ms. Given Luvhimbi (Information Librarian: Tshwane University of Technology) for the technical assistance. Special appreciation goes to Ms. Maite Makgoba and Ms. Mamosana Letsoalo for data encoding and data management.

The authors would also like to acknowledge that there are additional publications in other peer-reviewed journals related to the larger project: A conceptual framework For Assessing Food Service quality in public hospitals in South Africa

REFERENCES

- Abdelhafez, A., Al Qurashi, L., Al Ziyadi, R., Kuwair, A., Shobki, M., & Mograbi, H., 2012, 'Analysis of factors affecting the satisfaction levels of patients toward food services at General Hospitals in Makkah, Saudi Arabia', *Age (Years)* 30, 31 - 50.
- Adeyemi, A., Botai, J., Ramoelo, A., Van der Merwe, F., & Tsela, P., 2015, 'Effect of impervious surface area and vegetation changes on mean surface temperature over Tshwane metropolis, Gauteng Province, South Africa', *South African Journal of Geomatics* 4(4), 351 - 368.
- Ahmad, I., Nawaz, A., Khan, S., Khan, H., Rashid, M. A. & Khan, M. H., 2011, 'Predictors of patient satisfaction', *Gomal Journal of Medical Sciences*, 9(2), 183-188.
- Ahoya, B., & Situma, J., 2015, 'Anthropometric assessment and patient satisfaction with hospital meals in country referral hospitals of Western Kenya', *International Journal of Health Sciences and Research* 5(7), 317 - 325.
- Aminuddin, N.F., Vijayakumaran, R.K., Razak, S.A., 2018, Patient satisfaction with hospital foodservice and its impact on plate waste in public hospitals in East Malaysia. *Hospital Practice Research* 3 (3), 90-97.
- Brown, A., 2015, 'Understanding food-principles and preparation (5th ed.)' USA: Wadsworth CENGAGE Learning.
- Brzezinski, M., 2012, 'The Chen–Shapiro test for normality', *The Stata Journal* 12(3), 368 - 374.
- Caswell, J.A., & Yaktine, A.L., 2013, 'Individual, household, and environmental factors affecting food choices and access', In *Supplemental Nutrition Assistance Program: Examining the Evidence to Define Benefit Adequacy* National Academies Press (US).
- Cohen, C., Manion, L., & Morrison, K., 2007, 'Research methods in education (6th ed.)' Abingdon: Routledge.
- Conroy, R. M., 2012, 'What hypothesis do "nonparametric" two-group tests actually test?', *The Stata Journal* 12(2), 182 - 190.
- Dall'Oglio, I., Nicolò, R; Di Ciommo, V., Bianchi, N; Ciliendo, G; Gawronski, O., Manuel Pomponi, M., Roberti, M., Emanuela Tiozzo, E., Massimiliano Raponi, M., 2015, A systematic review of hospital foodservice patient satisfaction studies. *Journal of the Academy of Nutrition and Dietetics*, 115 (4), 567-584.
- Du Plooy, A., De Jager, J., & Van Zyl, D., 2013, 'Drivers of perceived service quality in selected informal grocery retail stores in Gauteng, South Africa', *South African Business Review* 16(1), 94 - 121.
- Dubé, L., Trudeau, E., & Bélanger, M. C., 1994, 'Determining the complexity of patient satisfaction with foodservices', *Journal of the American Dietetic Association* 94(4), 394 - 401.
- Edwards, J. S., 2013, 'The foodservice industry: eating out is more than just a meal', *Food Quality and Preference* 27, 223 - 229.
- Fatimah, U. Z., Boo, H. C., Sambasivan, M., & Salleh, R., 2011, 'Foodservice hygiene factors - The consumer perspective', *International Journal of Hospitality Management* 30(1), 38 - 45.
- Greenland, S., Mansournia, M. A., & Altman, D. G., 2016, 'Sparse data bias: a problem hiding in plain sight', *BMJ* 352, 1 - 5.
- Hall, K., & Sambu, W., 2018, 'Demography of South Africa's children', Cape Town: University of Cape Town.
- Hartwell, H. J., Edwards, J. S., & Symonds, C., 2006, 'Foodservice in hospital: development of a theoretical model for patient experience and satisfaction using one hospital in the UK

- National Health Service as a case study', *Journal of Foodservice* 17, 226 - 238.
- Hartwell, H., & Edwards, J., 2009, 'Descriptive menus and branding in hospital foodservice: a pilot study', *International Journal of Contemporary Hospitality Management* 21(7), 906 - 916.
- Jiyana, M. J., Ncube, L. J., & Nesamvuni, A. E., 2018, 'Nutrient composition of planned adult patients' normal diet menus in selected public hospitals in Gauteng Province, South Africa', *African Journal for Physical Activity and Health Sciences* 24(3), 245 - 261.
- Josiam, B., Foster, C., Malave, R., & Baldwin, W., 2014, 'Assessing quality of food, service and customer experience at a restaurant: the case of a student run restaurant in the USA', *Journal of Services Research* 14(1), 49 - 73.
- Kalargyrou, V., Barber, N. A., & Kuo, P. -J., 2018, 'The impact of disability on guests' perceptions of service quality delivery in the hospitality industry', *International Journal of Contemporary Hospitality Management* 30(12), 3632 - 3655.
- Kim, K., Kim, M., & Lee, K., 2010, 'Assessment of foodservice quality and identification of improvement strategies using hospital foodservice quality model', *Nutrition Research and Practice* 4(2), 163 - 172.
- McCrae, R. R., Kurtz, J. E., Yamagata, S., & Terracciano, A., 2011, 'Internal consistency, retest reliability, and their implications for personality scale validity', *Personality and Social Psychology Review* 15(1), 28 - 50.
- McLymont, V., Cox, S., & Stell, F., 2003, 'Improving patient meal satisfaction with room service meal delivery', *Journal of Nursing Care Quality* 18(1), 27 - 37.
- Merriweather, J. L., Salisbury, L. G., Walsh, T. S., & Smith, P., 2014, 'Nutritional care after critical illness: A qualitative study of patients' experiences', *Journal of Human Nutrition and Dietetics* 29(2), 127 - 136.
- Mokhlis, S., 2012, 'The influence of service quality on satisfaction: A gender comparison', *Public Administration Research* 1(1), 103 - 112.
- Mosadeghrad, A. M., 2013, 'Health care service quality: towards a broad definition', *International Journal of Health Care Quality Assurance* 26, 203 - 219.
- Mosadeghrad, A. M., 2014, 'Factors influencing healthcare service quality', *International Journal of Health Policy Management* 3(2), 17 - 89.
- Naithani, S., Whelan, K., Thomas, J., Gulliford, M. C., & Morgan, M., 2008, 'Hospital inpatients' experiences of access to food: a qualitative interview and observational study', *Health Expectations* 11(3), 294 - 303.
- Ncube, L. J., & Letsoalo, M. E., 2019, 'Foodservice quality in South African hospitals: patient experiences', *International Journal of Health Care Quality Assurance* 32(3), 599 - 610.
- Ncube, L. J., Nesamvuni, A. E., & Manafe, M., 2017, 'Edible plate wastage study: an assessment of the percentage of consumed food at ward level in selected South African hospitals', *African Journal for Physical Activity and Health Sciences Supplement* 1:2, 255 - 266.
- Ncube, L., & Nesamvuni, A. E., 2019, 'South African foodservice quality: inpatient's perceptions', *International Journal of Health Care Quality Assurance* 38(2), 447 - 458.
- Newson, R., 2006, 'Confidence intervals for rank statistics: Somers' D and extensions', *The Stata Journal* 6, 309 - 334.
- Phiri, M. A., & Mcwabe, T., 2013, 'Customers' expectations and perceptions of service quality: The case of Pick N Pay supermarket store in Pietermaritzburg area, South Africa', *International Journal of Research in Social Sciences* 3(1), 96 - 103.
- Porter, J., Haines, T.P., Truby, H., 2017, 'The efficacy of Protected Mealtimes in hospitalised patients: a stepped wedge cluster randomised controlled trial. *BioMed Central Medicine* 15(1), 25
- Puckett, R. P., 2004, 'Foodservice manual for health care institutions (3rd ed.)', San Francisco: Jossey-Bass.
- Shafie, F. A., & Rennie, D., 2012, 'Consumer perceptions towards organic food', *Procedia-Social and Behavioral Sciences* 49, 360 - 367.
- Sijtsma, K., 2009, 'On the use, the misuse, and the very limited usefulness of Cronbach's alpha', *Psychometrika* 74(1), 169 - 176.
- Simanjuntak, L. M., Aulia, D., & Siagian, A., 2020, 'Patients' perceptions of food service quality at Royal Prima Hospital Medan', *Britain International of Exact Sciences (BloEx) Journal* 2(1), 197 - 209.
- Sloan, A. E., 2007, 'Top 10 food trends'. *Food Technology*, viewed 11 April 2019, from www.ift.org.
- StataCorp., 2015, 'Stata statistical software. Release 14', College Station: TX:StataCorp LP.
- Suza, D. E., & Asrizal, A., 2019, 'Relationship between nutritional status, burn degree, and

treatment with burn injury healing process in patients at hospital in Medan City, Indonesia', *International Journal of Nursing and Health Services (IJNHS)* 2(4), 389 - 396.

Wandel, M., & Bugge, A., 1997, 'Environmental concern in consumer evaluation of food quality', *Food Quality and Preference* 8(1), 19 - 26.

Williams, P. G., & Waltons, K., 2011, 'Plate

waste in hospitals and strategies for change', *European e-Journal of Clinical Nutrition and Metabolism* 6(6), 235 - 241.

Zeithaml, V. A., Bitner, M. J., & Gremler, D. D., 2006, 'Service marketing: Integrating customer focus across the firm (4th ed.)', New York: NY: McGraw-Hill/Irwin.
