Investigating ward nurses' perceptions of hospital pharmacy service quality: The case of a South African Private Hospital Group

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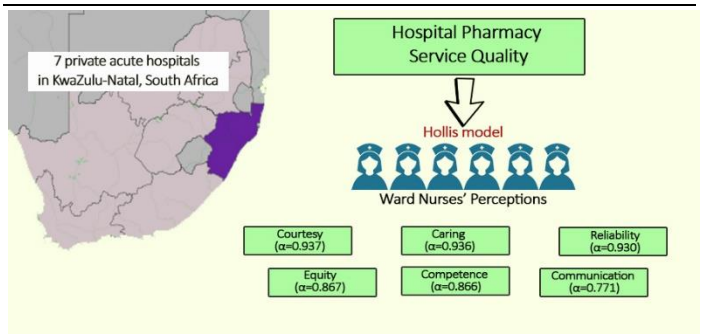
ABSTRACT

In recent years, organisations have increasingly focused their attention on internal service quality, which has a significant effect on customer satisfaction, which in turn impacts the performance of the organisation and ultimately profitability. However, there is limited research locally and/or internationally that has investigated the internal service quality provided to nursing staff by the hospital's pharmacy. This study investigated ward nurses' perceptions of service quality provided by the hospital pharmacy of a hospital group in South Africa. The quantitative survey drew on the work of Hollis, who identified eleven dimensions of internal service quality in a health context. Data was collected via a questionnaire comprising 47 question items, on a 5-point Likert scale, distributed to over 700 registered ward nurses to seven acute hospitals in the province of KwaZulu-Natal in South Africa. Factor analysis identified six latent factors that influenced the ward nurses' perception of the hospital pharmacy's service quality. The factors identified (with Cronbach Alpha values provided) were courtesy (0.937), caring (0.936), reliability (0.930), equity (0.867), competence (0.866), and communication (0.771). The findings suggest that a more compact version of the dimensions of Hollis seems relevant in the private hospital setting, with the principles of Ubuntu contributing to better service quality. The findings of this study could help improve the current level of the internal service quality that hospital pharmacies provide to ward staff by focusing on the dimensions identified and drawing on Ubuntu principles. It can also provide management with focus areas for improving internal service quality.

ABSTRAK

Dalam beberapa tahun terakhir, organisasi semakin fokus pada kualitas layanan internal, yang memiliki dampak signifikan terhadap kepuasan pelanggan, yang pada gilirannya mempengaruhi kinerja organisasi dan pada akhirnya keuntungan. Namun, terdapat sedikit penelitian secara lokal dan/atau internasional yang telah meneliti kualitas layanan internal yang diberikan oleh apotek rumah sakit kepada staf perawat. Studi ini meneliti persepsi perawat ruang rawat inap terhadap kualitas layanan yang diberikan oleh apotek rumah sakit dari sebuah grup rumah sakit di Afrika Selatan. Survei kuantitatif ini mengacu pada karya Hollis, yang mengidentifikasi sebelas dimensi kualitas layanan internal dalam konteks kesehatan. Data dikumpulkan melalui kuesioner yang terdiri dari 47 item pertanyaan, menggunakan skala Likert 5 poin, yang dibagikan kepada lebih dari 700 perawat bangsal terdaftar di tujuh rumah sakit akut di provinsi KwaZulu-Natal, Afrika Selatan. Analisis faktor mengidentifikasi enam faktor laten yang memengaruhi persepsi perawat ruang rawat inap terhadap kualitas layanan apotek rumah sakit. Faktor-faktor yang diidentifikasi (dengan nilai Cronbach Alpha yang disertakan) adalah keramahan (0.937), kepedulian (0.936), keandalan (0.930), keadilan (0.867), kompetensi (0.866), dan komunikasi (0.771). Temuan ini menyarankan bahwa versi yang lebih ringkas dari dimensi Hollis relevan dalam lingkungan rumah sakit swasta, dengan prinsip-prinsip Ubuntu berkontribusi pada kualitas layanan yang lebih baik. Temuan studi ini dapat membantu meningkatkan tingkat kualitas layanan internal yang diberikan apotek rumah sakit kepada staf ruang rawat dengan fokus pada dimensi yang diidentifikasi dan mengacu pada prinsip-prinsip Ubuntu. Hal ini juga dapat memberikan manajemen area fokus untuk meningkatkan kualitas layanan internal.

GRAPHICAL ABSTRACT



Keyword
hospital pharmacy
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INTRODUCTION

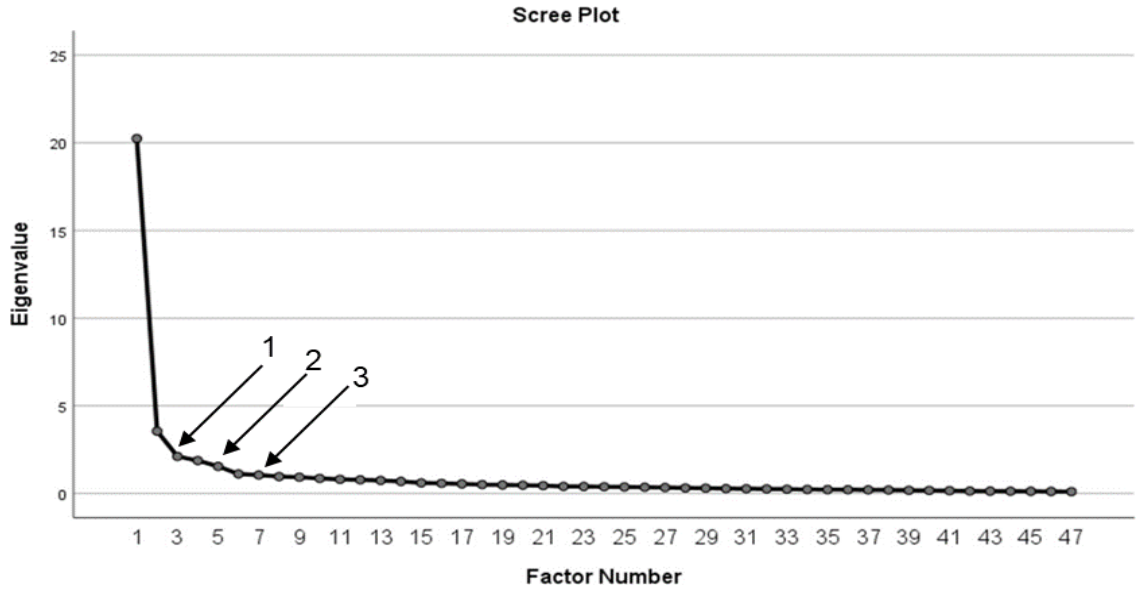
The aim of Sustainable Development Goal (SDG) 3 is to Ensure healthy lives and promote well-being for all at all ages. This SDG is sub-divided into several sub-goals, and sub-goal 3.c.1 refers to the development, training and retention of health workers in developing countries. At the same time, the fundamental mission of a hospital is to supply quality healthcare services to patients and to fulfil their needs and expectations (Abedi et al., 2016; Akanbi, 2020; Gwija, 2023). Providing continuous quality service is one way in which service organisations can strategically differentiate themselves from their competitors (Barnard, 2019). Service experience in hospitals is determined not only by improved or new processes and facilities or the latest technology and equipment, but also by the ability and conduct of the health workers of the organisation in question (Prakash & Srivastava, 2019). Gomes (2023) argues that the service received from hospital health workers is usually the most significant factor in determining customers' perception of the service quality they receive. However, service quality in the healthcare sector is challenging to explain and measure because of distinct healthcare sector attributes such as intangibility, diverseness, and simultaneity (Shahril et al., 2020; Endeshaw, 2021). Various researchers have investigated the theory of service quality in the healthcare sector, especially hospitals (Singh & Dixit 2020; Darzi et al. 2021; Khursheed & Bhat 2022; Haksama et. al. 2024). Some of these researchers have attempted to isolate the dimensions of healthcare service quality and to discover its impact on service outcome (Hollis 2006; Malik et al., 2016; Hasan & Sangadji 2024). However, when the focus turns to the internal service quality of hospital pharmacies, the research is almost non-existent. Search on PubMed, Scopus, Web of Science and even Google Scholar, using the following search algorithm - "internal service quality" AND "hospital" AND "hospital pharmacy" [both plural and singular options were used] - only a single article was identified. With this clear research gap in mind, the aim of this study was to investigate ward nurses' perception of the service quality provided by the hospital pharmacy in a specific private hospital group in South Africa, with a view to ultimately improving the internal service quality and, thereby, the service offered to the hospital's external customers. In so doing, this study will also hopefully contribute to achieving SDG 3.c.1 by contributing to better trained nurses and pharmacy staff that are able to communicate with and support each other in delivering higher levels of quality nursing care to patients in South Africa.

As the name suggests, hospital pharmacies are pharmacies owned and run by a hospital to primarily service the medication dispensing needs of internal medical staff (mainly doctors and surgeons) who order medicines for their patients (Barati et al., 2016). Nurses are typically the key medical staff members who interact with the dispensing staff in the hospital pharmacy on behalf of doctors, surgeons and other specialists. Hospital pharmacies may also serve external customers on a commercial basis, but this study is on the internal service focus of hospital pharmacies.

There is evidence in the literature of challenges experienced by hospital pharmacies in the dispensing management. These challenges are numerous; see Madadi and Jaafaripooyan (2015), as well as Barati et. al. (2020) in this regard, and Sallem (2024). Madadi and Jaafaripooyan (2015), in particular, highlight errors linked to nursing staff, with a shortage of nurses, nurses' inexperience, job stress, physicians' unreadable handwriting, and a lack of information on medications being some of the challenges. Given these challenges, it is argued that a good rapport between the nurse as customer and the pharmacy staff as supplier could go a long way in alleviating some of these challenges.

Braun and Hadwich (2017) suggest that the basic underlying principle of internal service quality is that each unit/employee in an organisation either accepts delivery of a service/product from another unit/employee or provides a service/product to another unit/employee within the organisation. The authors further explain that the unit/employee providing the service/product is the internal service provider and the unit/employee receiving the service/product is the internal customer. Based on this, internal service quality can be described as the employees' satisfaction with the "service encounters" they have with other (Dekker, 2013). The internal service chain is a structure that explains the connection between an organisation's employees and customer satisfaction

Figure 1
Scree plot from principal axis factoring of 47 variables



units/employees within the same organisation and how this can impact on the organisation's ultimate success (Srivastava & Prakash, 2019). For organisations to be successful in competitive markets such as healthcare, the quality provided by employees through extraordinary internal customer support to other departments within the organisation becomes essential for the level of service quality ultimately delivered (Prakash & Srivatava, 2019).

The limited academic literature that exists on internal service quality in hospitals tends to focus on the positive impact on job satisfaction of nurses with concomitant impact on patients (Abdullah et al., 2021; Goula et al, 2022; Njilo et al., 2020; Prakash & Srivastava, 2019). Only one article by Zheng et al. (2018), in the research on the impact of internal service quality in preventable diverse events in hospitals, found clear evidence of the positive impact of internal service quality on reducing adverse events in hospitals, such as incorrect medication being provided by the hospital pharmacy. Measurement of the perception of employees of internal service quality is multifaceted and complex and shares the complexity inherent in external service quality (Prakash & Srivastava, 2019). As Hollis (2006) suggests in his doctoral thesis on internal service quality in a hospital setting, "It is generally accepted in the literature that intangibility of the service creates difficulty in evaluating service quality", supporting the need for a multidimensional approach to internal service quality (Hollis, 2006).

In attempting to uncover the dimensions that constitute internal service quality in a hospital environment, Hollis suggested 11 key dimensions that service-providing employees should exhibit. 'Patient outcomes' was a 12th dimension initially identified by Hollis (2006), but that was not used in his subsequent survey, as it is seen as more typical of an external service quality dimension and cannot realistically be linked to nurses' perceptions of the internal service quality of a hospital's pharmacy. The dimensions he suggested were derived from attributes drawn from prior research on both internal and external service quality (Hollis, 2016). He also used and modified the traditional SERVQUAL dimensions, incorporating *qualitative* inputs from the first stage of his research. These inputs served to better contextualise the SERVQUAL dimensions in a hospital setting, thereby resulting in the 11 dimensions he identified for his subsequent *quantitative* study (Hollis, 2006). His research specifically focused on medical staff within a hospital setting, including nurses, further justifying the use of his study for this current study.

Table 1
Principal axis factoring with factor loading and Cronbach alpha scores

Factor # Cronbach Alpha score	Reliability	Question	Factor						
			1	2	3	4	5	6	7
1	Good	Q45	0,655						
0.936		Q46	0,648		-0,344				
		Q42	0,601						
		Q44	0,560				-0,300		
		Q41	0,551						
		Q40	0,546						
		Q43	0,514						
		Q47	0,411		-0,347				
		Q30	0,404						-0,350
NA	NA	Q28	This item had a loading <0.30; it does not significantly load on any of the factors						
2	Acceptable	Q23		0,924					
0,736		Q24		0,835					
		Q1		0,304					
3	Good	Q7			-0,903				
0,937		Q5			-0,810				
		Q9			-0,744				
		Q10			-0,711				
		Q8			-0,692				
		Q27			-0,592				
		Q6			-0,566		-0,306		
		Q11			-0,500				-0,302
		Q22			-0,411				-0,350
4	Unacceptable	Q37				0,661			
0,551		Q39				0,616			
		Q29				0,317			
5	Acceptable	Q3					-0,803		
0,771		Q4					-0,760		
		Q2					-0,454		
		Q15					-0,403		-0,311
NA	NA	Q14	This item had a loading <0.30; it does not significantly load on any of the factors.						
6	Good	Q36						-0,714	
0,866		Q35						-0,677	
		Q32						-0,663	
		Q38						-0,524	
		Q26						-0,492	
		Q33						-0,484	
		Q25						-0,448	
		Q18		0,344				-0,373	
7	Good	Q19							-0,578
0,930		Q20			-0,324				-0,450
		Q12							-0,450
		Q21	0,338						-0,403
		Q16							-0,383
		Q34							-0,357
		Q13			-0,325				-0,346
		Q17							-0,339
		Q31							-0,327

Table 2
KMO test for sample adequacy and Bartlett's test of sphericity

KMO Measure of Sampling Adequacy		0.950
Bartlett's Test of Sphericity	Approx. chi square	10,233
	df	1081
	Sig.	0

METHODS

This study adopted a deductive approach within a descriptive study to explore the perceptions of ward nurses regarding the internal service quality of hospital pharmacies. The research was conducted within the Kwazulu-Natal province of South Africa. The target population comprised all registered ward nurses in the hospitals of a private hospital group within this province, estimated to be approximately 1700 individuals. Ward nurses were selected for this study as they are (a) required to be registered with the South African Nursing Council, are (b) the only nurses who typically have daily contact with the hospital pharmacy. For respondent selection, a quasi-random sample was obtained by distributing questionnaires to nurses who were on duty on a given day across various hospitals in the province. This method was described as ostensibly a convenience sample but argued to hold random characteristics as it included nurses present on a normal workday. Qualifying criteria for participation included being a registered or enrolled nurse or nurse auxiliary with regular interaction with the hospital pharmacy. A total of 703 questionnaires were distributed, yielding 348 completed responses.

The primary instrument used was a self-administered survey questionnaire. It was developed based on the research of Hollis (2006), initially drawing on his 30 items for 11 dimensions of internal service quality. The researcher added a further 17 questions to provide additional perspectives on Hollis's dimensions and explore the concept of quality, resulting in a total of 47 questions in the main section of the questionnaire. Responses to these questions were measured on a 5-point Likert scale, ranging from strongly disagree to strongly agree. Following data capture and cleaning, the analysis was conducted using principal axis factor analysis in SAS version 9. This technique was employed to identify the latent factors influencing nurses' perceptions of internal service quality. The suitability of the analysis was assessed using the Kaiser-Meyer-Olkin (KMO) test and Bartlett's measure of sphericity. Reliability and validity of the instrument were further established using Cronbach's Alpha reliability score.

Ethically, clearance was secured from the University of South Africa (UNISA) and the management of the private hospital group. Signed gatekeeper forms were obtained from hospital managers. Participation was voluntary, with nurses informed that the research was for academic purposes only and they were not obligated to participate. Anonymity was strictly maintained by not recording respondent names or specific hospital locations on the questionnaires and by removing informed consent forms before questionnaire completion. Captured data was identified only by an index number.

RESULTS

Although a total of 348 completed questionnaires (just under 50% of the total questionnaires originally distributed to nurses) were collected from respondents, on closer inspection only 291 (83,6%) of these were found to be valid and usable for analysis, a 41,4% response rate, which was regarded to be adequate. Given the estimated population size, this response translates into a margin of error of 5.23% and a confidence level just under 95%, deemed acceptable for the study. The sample consisted of both male and female registered nurses; namely 20 males (6.9%) and 271 females (93.1%). Females are clearly the dominant gender among ward nurses. As far as age is concerned, 3.1% of nurses were 18-25 years of age, 19,2% were 26-30 years of age, 27,5 were 31-35 years of age, 30,9% were 36-40 years of age and 19,2 were 41-65 years of age. Respondents included enrolled nurses and enrolled nurse auxiliaries from various wards, including intensive care, high care, medical, general, surgical and paediatric wards.

Seven factors with an eigenvalue greater than 1 were identified and were thereafter subjected to an Oblimin with Kaiser normalisation rotation. Together, the 7 factors account for 62% of the variance of items

Table 3
Final factors identified and naming

Initial factors identified	Final factors	Proposed factor name	Number of items
Factor 1	Factor 1	Caring	9
Factor 2	Factor 2	Equity	2
Factor 3	Factor 3	Courtesy	9
Factor 4	Factor 4 (combined with factor 6)	Competence	8
Factor 5	Factor 5	Communication	4
Factor 6	(Combined with factor 4)	NA	NA
Factor 7	Factor 6	Reliability	4

and are therefore identified as theoretically meaningful underlying factors or dimensions (Aaker et al., 2019). The scree plot outlined in Figure 1 suggests 3, 5 or 7 possible latent factors, depending on what one looks for. The elbow (arrow 1) suggests three factors, the inflection point (arrow 2) suggests five factors, while arrow 3 indicates that the slope of the line flattens out significantly after the seventh factor. The decision was to adopt seven factors, given the seven factors identified using eigen values > 1.

As far as reliability is concerned, Cronbach's alpha was used as a measure of internal reliability of the various factors identified in the factor analysis (Cogenli & Yasar, 2014). Table 1 reveals that all the factors identified, except for factor 4, were considered a reliable measures of the latent factor in question. The validity of the study, in turn, was tested using both the Kaiser-Meyer-Olkin (KMO) test for sample adequacy and Bartlett's test of sphericity. Table 2 presents the results of both tests. A KMO score of over 0.9 is considered excellent and the sample was deemed adequate. Bartlett's test of sphericity produced a significant result (chi square = 10233.04, df = 1081, Sig. = 0.000), which indicates that the factor analysis was appropriate (Abdullaha et al., 2016).

The factor analysis identified the latent factors but did not provide clarity on what these factors represent. Instead, it was necessary to reflect on the items (questions) that had been statistically 'loaded' against each latent factor and to make a judgement as to what the latent factor actually represents. This exercise is described below (see Table 2).

Factor 1: Nine items loaded on to this factor. Items Q45 and Q44 related to the dimension of caring from the work of Hollis, as did Q41 added by the researcher. Similarly, Q46 and Q47 related to collaboration, Q42 and Q40 to understanding the customer, Q43 to communication, and Q30 to responsiveness. A critical review of the possible dimensions that the questions relate to, suggests that these items have "caring" as a common descriptor. Other attributes related to this dimension include responsive, access, understanding the customer, communication and collaboration, but caring is argued to be the best over-arching descriptor. Thus, all nine items were retained under this factor.

Factor 2: Three items loaded on to this. Item Q1 (related to 'tangibles') also loaded on this dimension, but with a weak loading of 0.304. It was removed from factor 2 as it improved Cronbach's alpha from 0.736 to 0.867. Since the remaining two items loaded strongly to equity, this factor was named "equity".

Factor 3: Nine items loaded strongly on to this factor. Items Q7, Q5, Q9, Q10, Q8, and Q6 all related to the dimension of courtesy (as indicated in Hollis's study) and loaded highest on factor 3 collectively (-0,903, -0,810, -0,744, -0,711, -0,692 and 0.566, respectively). Item Q27, in turn, related to access, Q11 to responsiveness, and Q22 to equity, but all three items could be argued to have a courtesy attribute to them. Since most items related to courtesy and also loaded the highest on factor 3, and the other items could also be seen from a 'courtesy' perspective, this factor was named "courtesy".

Factor 4: Only three items initially loaded on to this factor. The first two of these items related to the dimension of competence and loaded strongly on latent factor 4 (0.661 and 0.616, respectively). Item Q29, related to communication, only had a loading of 0.317. Item Q29 was consequently removed from factor 4, as it improved Cronbach's alpha from 0.551 to 0.695. Since the remaining two items related to

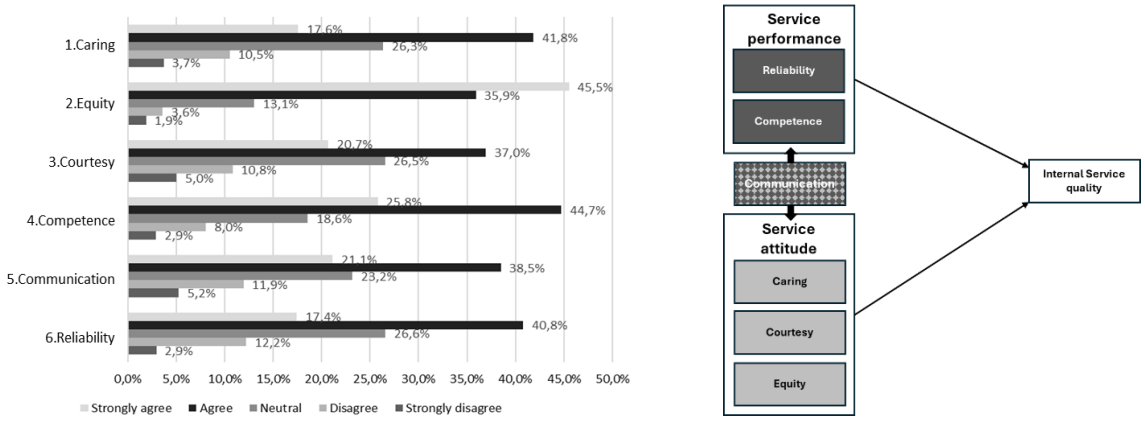
Table 4
The dimensions identified by Hollis

Dimension and description	References supporting these dimensions
Tangibles include the physical and social environment within which the service interaction takes place.	Hollis (2006), Srivastava & Prakash (2019), Chen (2023), Ditebo & Oladokun (2023) Limna & Kraiwanit (2022).
Responsiveness is the willingness and speed of internal service providers, as well as their ability, to help their colleagues promptly.	Hollis (2006), Molamu et al. (2022)
Courtesy focuses on treating others with respect, thereby building trust amongst employees. Courtesy (and competence) fit within the 'assurance' dimension in the traditional SERVQUAL regime (often partnered with 'knowledge'), but Hollis' research highlighted the importance of courtesy in the healthcare context, suggesting that it should be a dimension in its own right.	Hollis, (2006), Pekkaya et al. (2019), Goula et al. (2022), Pane et al. (2022)
Reliability relates to the work situation and its effect on the work of the nurses. This dimension is about performing a service accurately, dependably and consistently. The term is often explained descriptors such as kind, thoughtful, considerate, attentive, patient, tactful, natural, friendly, concerned, sympathetic and approachable.	Alloway (1987), Hollis (2006), El Dessouky & Al-Ghareeb (2021)
Communication refers to the extent to which the internal service provider keeps the customer informed and listens to them, which presupposes the dimension of shared understanding of the customer. While an attribute of SERVQUAL, the research by Hollis suggests it should be a stand-alone dimension, especially given the extensive literature on the role of communication in internal service quality.	Hollis (2006), Aswandi (2019), Abdullah et al. (2020), Njilo et al. (2020); Sun et al. (2020)
Competence is seen as covering a range of attributes such as professional skills, training, ability to organise, professionalism, knowledge, credibility and the ability to recover from problems in service delivery, as well as the abilities, behaviours, knowledge, skills, work habits, expertise and professionalism to perform work tasks in accordance with predetermined standards.	Hollis (2006), Jankovska (2013), Turan & Cinnioğlu (2022)
While understanding the customer often receives less attention in internal service quality activities, than in the case of external customer service quality, this dimension is about trying to get to know the customer and their needs, and involves a dyadic interaction between the service provider and recipient, often focusing on the service provider's perception of the service offered, thereby contributing to building a lasting relationship over time.	Hollis (20063), Qiu et al. (2022)
Caring reflects the attitude of the internal service provider towards the patient, which includes friendliness, communication, interpersonal interactions, and fairness. While caring may fit within the 'empathy' dimension in SERVQUAL, the research of Hollis suggests that it is an important enough attribute to be seen as a separate dimension.	Forrest (1989:819), Hollis (2006:259)
Collaboration is about a sense of teamwork and working together, and is often mentioned in conjunction with several other dimensions (as is communication), suggesting that it is a cross-cutting dimension. This dimension can be improved through internal marketing.	Hollis 2006:258, Ramadhanty (2023)
Access describes an internal service provider's accessibility to internal customers, and how easy it is to contact them, positing that access is more than just the accessibility of the service provider to the service user, but requires access to "important and critical information" required by the internal customer, *in addition to* being accessible.	Hollis (2006), Goula et al. (2022)
Equity is about a sense of equality or fairness in providing the same level care (or assistance) to everyone, with everyone doing their fair share of work.	Hollis (2006:254)

competence and showed relatively high loadings, this factor was named "competence". As will be seen when discussing factor 6, later in this section, many of those items also had a 'competence' attribute associated with them. For this reason, factor 6 was collapsed together with factor 4, as part of the 'competence' dimension, resulting in a total of eight items.

Factor 5: Four items loaded on to this factor. Items Q3, Q4, and Q15 all related to the dimension of communication and loaded highest on factor 5 (0.803 and 0.760, respectively). Item Q2 related to tangibility and had a lower factor loading. However, the visual appeal of the pharmacy could also be argued to link up with the 'communication' dimensions. Given this argument, this item was retained and the factor was named "communication".

Figure 2
Cumulative responses per factor and proposing a relational model of the six factors identified



Factor 6: Eight items loaded on to this factor. Items Q36, Q35, Q32, Q38, Q33, and Q25 all related to the dimension of competence and loaded highest on factor 6 (-0,714, -0,677, -0,663, -0,524, -0.484, and -0,448 respectively). Item Q26 seemed to relate to 'Understanding the customer best' or perhaps 'Communication', and was left out from this factor. Item Q18 related to reliability, with a weak loading value (of <0,4), and was therefore ignored. Since most items related to competence, this factor was collapsed together with factor 4 and named "competence" – see factor 4 above.

Factor 7: Nine items loaded on to this factor. Items Q19, Q20, and Q21 all related to the dimension of reliability and loaded highest on factor 7 (-0,578, -0,450 and -0,403 respectively). Item Q12 related to responsiveness, although Q12 could also be argued to relate to 'reliability', and was retained under this factor. Items Q13, Q16, Q17, Q34, and Q31 appear to relate better to other dimensions, but as their factor loadings were all > 0,4, these were all ignored in naming this dimension. This left four items. Since most items related to reliability and also loaded the highest on factor 7, this factor was named "reliability". With factor 6 having been collapsed together with factor 4, factor 7 now became factor 6 (see Table 3). Items Q14 and Q28 both had factor loadings < 0.30 and were therefore discarded and not linked to any factor.

DISCUSSION

The 11 dimensions proposed by Hollis (2006) did not come to the fore in this study (see Table 4). Instead, this study identified only six dimensions that were found to be statistically valid, namely caring, equity, courtesy, competence, communication and reliability. Respondents were generally in strong agreement with these dimensions, with more than 50% of all respondents either strongly agreeing or agreeing with the importance of items (questions) presented to them. Less than 20% of respondents perceived these items to be unimportant (disagree or strongly disagree). It is also worth noting the relatively high 'neutral' position of many respondents (generally between 20-30%).

In Figure 2, the researchers were unsure whether communication should fall under service attitude or service performance. It was concluded that communication is the 'oil' that enables performance and attitude to be diffused through an organisation. It is thus positioned between attitude and performance and the question is raised as to whether communication is not perhaps a mediating variable in the proposed model.

It is also noted that in much of the research on external or internal service quality the dimensions are not clear cut, and the various attributes and dimensions are often 'intertwined' with each other. This is acknowledged in the work of Hollis (2006), where he refers to the "multidimensionality" of internal service quality dimensions in the sense of numerous cross-loadings evident in his study. This was also evident in the SERVQUAL research (Chenhui, 2019). Even in appendix A where the questions used in this study are presented, many of the questions can be argued to be associated with more than one dimension.

In terms of the service performance component of Figure 2, reliability and competence are

brought together under the broader descriptor of service performance. There is support for this approach in the literature. For example, Lestari et al. (2020) posit the important role of competence in service performance in Midwifery, while Ismail et al. (2009) investigate the reliability dimension on service quality performance, finding that "there is significant relationship between reliability dimensions and service quality performance."

While this study emanated from within the field of marketing with a specific focus on internal service quality amongst nursing staff in a private hospital group, the dimensions identified and presented in Figure 2 struck a chord with the researchers. The identified dimensions seemed to be aligned with the philosophy of Ubuntu. Ubuntu is a widely discussed philosophy in South Africa, and in Africa and beyond (Ewuoso & Hall, 2019; Gade, 2012; Idoniboye-Obu & Whetho, 2013; Mokhachane et al., 2023). As marketers, the researchers did not initially consider Ubuntu as a concept in the study; the focus was entirely from a marketing/internal service quality perspective. The researchers do not appear to be alone in missing the Ubuntu link with internal service quality. A subsequent search of the academic literature revealed no articles on the Scopus or Web of Science bibliographies for the search algorithm ("internal service quality" AND "ubuntu"). Google Scholar highlighted ten articles, of which only four articles clearly focused on internal service quality with a link to Ubuntu. The most recent article by Mody (2023) is relevant, albeit not about healthcare. The article posits that Ubuntu means to be "generous, hospitable, friendly, caring and compassionate, and represents the quintessence of human identity and humanness" and sees Ubuntu as contributing to the transformative service research agenda that strives to improve customer well-being at the individual, collective and ecosystemic levels (Anderson et al., 2013). Related to this, Evans (2018) examined the internal customer perception of small hospitality enterprises in Ghana and posits that Ubuntu is a potential leadership style that can be adopted in the hospitality sector in the country. Mofomme and Barnes (2004) examined service quality (external and internal) within the police service in a province of South Africa, and drew on Ubuntu as well as Batho Pele, which they do not clearly define or explain. However, the researchers do refer to "intense caring", "courtesy", and "communication" as important attributes in the context of Ubuntu (Mofomme & Barnes, 2004), providing support for the findings of this study. Finally, Molose (2019), in his thesis on service excellence in the tourism sector, sought to draw in Ubuntu principles and found support for the adoption of these principles in this sector. No articles were found linking Ubuntu to internal service quality in the healthcare sector.

With a possible link between the dimensions identified in the study and Ubuntu in mind, the literature was examined to see whether the dimensions uncovered in this study also appear in the Ubuntu literature, and indeed they do, quite strongly. Caring is extensively discussed in the context of Ubuntu. For example, Matutu (2023) writes that "Ubuntu stresses that we should care, that caring is a moral quality and that we should encourage conditions which create care." In the healthcare sector, Downing and Toslma (2016) draw on the views of Albertina Sisulu (known as the 'Mother of the Nation' in South Africa and a nurse by profession) combined with an extensive literature review, to link Ubuntu to caring. More recently, Muhammad-Lawal et al. (2023) undertook a study amongst student nurses to explore "Ubuntu as an instrument to foster holistic nursing" and concluded that "Ubuntu represents an important care philosophy that can foster holistic nursing, especially when the inner driving force of the nurses is primarily to care for patients."

There is also extensive reference to courtesy in the context of Ubuntu. The term 'Ubuntu courtesy' is often used. Muwanga-Zake (2009) uses the term holistically to describe the Ubuntu philosophy, which De Vos (2014) does as well, independently from Muwanga-Zake (2009). With respect to equity, Luhalima (2024) refers to equity as a measure of the quality of services provided in healthcare and suggests that "Ubuntu should be accepted as a fundamental attribute in healthcare, representing humanity, hospitality, generosity, and empathy; all of which are necessary for providing patients and others with high-quality care." Mody (2023), in his study on transformative services in the hospitality sector, sees equity as one of the core principles that need to be followed in this regard. In his article he alludes to a link between the "human flourishing" embodied in Ubuntu and "care, social justice, and equity". Chigangaidze et al. (2022) state that "Ubuntu is about rendering to others what they deserve, respecting human dignity, and ensuring equality and equity."

Finally, the dimension of communication, not surprisingly, appears in many articles on Ubuntu. Researchers such as de Sousa (2021) included the dimension of communication when researching

community communication based on African philosophy. In addition, Mofomme and Barnes (2004) studied the quality of service in the South African Police Services drawing on Ubuntu, while Ngondo and Klyueva (2022) examined an Ubuntu-centred approach to health communication.

There are several limitations that need to be noted in this study. The first is that it is a South African study limited to a private hospital group located in in a single province in the country. The findings in the context of private healthcare cannot be transferred to public healthcare. It may also be that there are environmental or social variables that impact on the study in this particular province, and that, as a consequence, one would need to be cautious in inferring the findings in other provinces or countries. Also, as the traditional SERVQUAL or INTSERVQUAL dimensions were not directly.

CONCLUSIONS

This study applied the 11 internal service quality Hollis's dimensions to assess their relevance in a local hospital pharmacy context. The results supported only six dimensions: caring, courtesy, equity, communication, reliability, and competence. Five aligned with two broader components, service performance (reliability, competence) and service attitude (caring, courtesy, equity), while communication was seen as enabling both performance and attitude. A closer look at the service attitude dimensions suggested an unanticipated alignment with Ubuntu principles within the South African social context. This led to a "back-to-front" literature exploration, which revealed substantial support for links between these dimensions and Ubuntu.

Overall, the study offers several novel contributions: Hollis's full set of dimensions did not fully manifest; internal service quality appears to reflect a performance–attitude duality with communication bridging both; and Ubuntu may play an important, underexplored role in internal service quality. Future research should test these findings in public hospitals and nationally, examine how Ubuntu is embedded in internal interactions, and investigate the transformative potential of internal service provision. Practically, the findings indicate value in training focused on internal service quality, performance versus attitude distinctions, Ubuntu's contribution, and improved measurement and reporting—potentially strengthening hospital staff capability, supporting better healthcare delivery in South Africa, and contributing to SDG 3.c.1.

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AUTHORS' CONTRIBUTIONS

Patricia Bianca Chetty: Conceptualization; Methodology; Data curation and fieldwork (questionnaire distribution and collection); Formal analysis; Writing—original draft; Corresponding author. Cornelius Bothma: Supervision; Methodology refinement; Writing—review and editing. Nombulelo Dilotsotlhe: Supervision; Validation and interpretation of findings; Writing—review and editing.

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COMPETING INTERESTS

The authors confirm that all of the text, figures, and tables in the submitted manuscript work are original work created by the authors and that there are no competing professional, financial, or personal interests from other parties.

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