ORIGINAL ARTICLE

HEALTH SERVICES QUALITY BETWEEN HYPERTENSION AND DIABETES MELLITUS PATIENTS IN COMMUNITY HEALTH SERVICES IN THE SLEMAN DISTRICT, YOGYAKARTA, INDONESIA

Sani Rachman Soleman*[1], Aqmarina Firda[2], Teguh Sulistiyanto[3], and Refa Nabila[4]

[1]Department of Public Health, Faculty of Medicine, Universitas Islam Indonesia Sleman, Yogyakarta, 55524, Indonesia.
[2]Internship programs in PKU Muhammadiyah Yogyakarta Hospital, Yogyakarta,55122, Indonesia.
[3]Internship programs in PDHI Yogyakarta Hospital, Yogyakarta, 55571, Indonesia
[4]Internship programs in Pertamina Balikpapan Hospital, Balikpapan, 76111, East Kalimantan, Indonesia

Corresponding author: Sani Rachman Soleman
Email: sani.rachman@uii.ac.id

ABSTRACT

The implementation of the Chronic Disease Management Program or PROLANIS has been adopted in Indonesia by National Social Security Implementation on Health Agency (BPJS-K) since 2015. The program focuses on hypertension (HT) and diabetes mellitus (DM). However, since the first time the program was implemented, there was no comprehensive evaluation of it. The aim of this study was to analyze health service quality among HT and DM patients based on five dimensions of quality in 25 community health services (CHSs) in the Sleman district, Yogyakarta, Indonesia. This is a cross-sectional study with a simple random sampling technique that included 230 respondents from 25 CHSs. The instrument was SERVQUAL that consisted of 35 items of a questionnaire. The data were analyzed by a gap analysis, Customer Satisfaction Index (CSI) and Importance Performance Analysis (IPA); meanwhile, a Man-Whitney test was proposed to determine differences in health services quality in the PROLANIS program. Based on the gap analysis, it was found that whole dimensions were below 0-point; the CSI analysis obtained 74.45 for HT and 75.15 for DM; and the IPA analysis found that the distribution of respondents' answers in the questionnaire were in quadrants 1 and 2. The Man-Whitney analysis was used to get the assurance aspect correlated with health service quality in DM and HT patients (p = 0.001). Health service quality in the PROLANIS program was based on five dimensions of quality was low, unless assurance dimension. The government should improve health services quality in aspects of tangibility, responsiveness, empathy, and reliability to get satisfaction among HT and DM patients in the PROLANIS program.

Keywords: *Hypertension, diabetes, health service quality, community health services*

INTRODUCTION

Chronic noncommunicable diseases (NCDs) have become an enormous health burden in low- and middle-income countries(1). The scale of the increase of NCDs is particularly observed in Southeast Asia, in countries such as in Indonesia, where a limited budget has been allocated to combat the growing NCD epidemic(2). The three top causes of death in Indonesia are stroke (21.2%), ischemic heart disease (8.9%), and diabetes mellitus (DM) (6.5%). Major adult NCD risk factors in Indonesia include current tobacco smoking, 35% in 2011 (67% in men and 3% in women); high blood pressure or hypertension, 27.8% in 2008% (29.1% in men and 26.5% in women); and obesity, 4.8% in 2008 (2.6% in men and 6.0% in women) [1,2].

Hypertension and DM type 2 are preventable illnesses and have been found to be associated with an unhealthy lifestyle, including tobacco smoking, a lack of physical activity, and alcohol consumption[3]. Increasing trends in the prevalence of HT and DM have been shown in high-, middle-, and low-income countries[4]. Comparable with the global trend, the most attributable causes for mortality in Southeast Asia are hypertension and diabetes, with an increasing trend[4]. Based on data from Basic Health Research (RISKESDAS) 2018, the prevalence of HT based on the measurement results in the age population older than 18 years is 34.1% (3). The highest prevalence is in South Kalimantan (44.1%), and the lowest is in Papua amounted (22.2%). Meanwhile, HT occurs in groups of ages 31–44 years (31.6%), ages 45–54 years (45.3%), ages 55–64 (55.2%)[3].There is a lack of data on the adult (15 years and older) HT prevalence in Indonesia. A report on Basic Health Research (RISKESDAS) showed the prevalence of DM in Indonesian adult population to have been 6.9% in 2013 and jumped to 8.5% in 2018[3,4].

Indonesia's struggle to develop a responsive healthcare system is exacerbated by an environmental factor, life style, and degenerative process, where health insurance covers of them partially(2). A large number of people with HT and DM urge the government to run a program to reduce the number of sufferers substantially through an established cross-subsidy program(5). The government created a regulation through the National Social Security Implementation on Health Agency (BPJS-K) that hypertension and diabetes patients should be included in the PROLANIS program to control the impact of these diseases(5).

PROLANIS is abbreviation from *Program Pengelolaan Penyakit Kronis*, Chronic Disease Management Program.

PROLANIS is a healthcare system and a proactive approach implemented and integrated involving participants, health facilities and healthcare workers. BPJS-K aims to manage health care for participants who are suffering from chronic diseases to reach an optimal quality of life at a cost of service effective and efficient. The criteria of PROLANIS participants are patients who are suffering from DM and HT[5]. Activities in the PROLANIS program include consulting or education, home visits, short message service (SMS) reminders, club activities, and monitoring health status[5]. Monitoring of progress of the PROLANIS program in Indonesia has been implemented since 2015, but the program has not yet had any comprehensive evaluation. Annual evaluation is necessary to determine the progress and the development of public health related to chronic diseases as targets in the PROLANIS program. One of the assessments for evaluating service quality is SERVQUAL[6].

SERVQUAL is a multidimensional research instrument, designed to measure service quality by capturing respondents' expectations and perceptions along the five dimensions of service quality, such as tangibility, reliability, responsiveness, assurance, and empathy, that are divided into two categories: reality and expectation[6]. The questionnaire is designed to be administered in a face-to-face interview and requires a moderate–to large-sized sample of respondents for statistical reliability[6,7]. The SERVQUAL questionnaire has been described as the most popular standardized questionnaire for measuring service quality including health services. It is widely used by service firms, most often in conjunction with other measures of service quality and customer satisfaction. The SERVQUAL instrument was developed as part of a broader conceptualization of how customers understand service quality to get satisfaction. This conceptualization is known as the model of service quality or, more popularly, as the gap model between expectation and reality[8,9]. According to the foregoing explanation, the aim of this study is to assess and search differences in health quality services among HT and DM patients of the PROLANIS program in 25 CHSs in the Sleman district, Yogyakarta, Indonesia.

METHODS

Sample size

A cross-sectional design was conducted as a study method, and the sample size was calculated in two steps; the first step was calculating the sample size, in which 230 respondents were obtained. The amount of 230 respondents was determined by $Z\sigma = 1.96$, $Z\beta = 0.84$ and a mean of prevalence based on formula for the cross-sectional design. The second step was dividing them into 25 CHSs, and from each of them, 8–10 respondents were found through simple random sampling. The inclusion criteria are patients with hypertension or diabetes who were registered in the PROLANIS program, had been members of PROLANIS for more than 1 year and had been routinely attending the PROLANIS program every month in CHS, and the exclusion criteria were comorbid HT and DM in a patient and new member of the PROLANIS program.

Data collection

Permission to take data in CHS was granted by the Department of Health, Sleman District. There were 25 CHSs, and all of them were registered in PROLANIS programs. Informed consent procedures were conducted in the location and started with introduction of the research team; an explanation of the study's aim and procedures, risks related to the procedures and how to control these risks; and compensation for the respondents after data collection. The last step was asking for the respondents' agreement to be study participants by obtaining their signed informed consent that was witnessed by one family member. Ethical approval was received from the Faculty of Medicine, Universitas Islam Indonesia (approval number: 71/Ka. Kom.Et/70/KE/III/2019).

Instrument

The instrument was questionnaire items based on SERVQUAL dimensions that were divided into tangibility, reliability, responsiveness, assurance, and empathy. There were 35 questions that were divided into favorable and unfavorable categories. The questionnaire was separated into two categories, expectation and reality, with a Likert scale that consists of strongly disagree, disagree, agree, and strongly agree. Prior to application of the questionnaire, the tool was tested for validity and reliability based on Cronbach's alpha. The test of validity and reliability was performed by 30 patients in CHS. The validity test indicates that question number five is invalid because the t value was less than 0.3338 (t table), and reliability test indicated that all items were reliable.

Analysis

The analysis was conducted in two steps; the first one was a descriptive analysis consisting of a gap analysis, customer satisfaction index (CSI) and an importance performance analysis (IPA). The gap analysis was calculated based on the gap of expectation and reality that answered by respondents[10]. The step of calculating CSI was used to determine the mean important score and the mean satisfaction score (MSC), calculating weight factor, weight score, weight total, and the CSI score[11]. The interpretation of CSI was conducted using Table 1.

The IPA analysis was conducted to compare expectation and reality of the customers' satisfaction about services[12]. To analyze the satisfaction about health services, a Cartesian diagram was required for mapping the quality of PROLANIS services among hypertension and diabetes patients in CHSs. The component of Cartesian diagram was divided into four areas: in quadrant 1, expectation of patients is low, and reality is low; in quadrant 2, expectation of patients is high yet reality is low; in quadrant 3, expectation of patients is high, and reality is high; and in quadrant 4, expectation of patients is low, but reality is high[11,12]. For searching difference in quality health services among respondents, the Man–Whitney method in SPSS version 23 was used.

RESULTS

The health services quality is an important aspect, particularly among patients with chronic diseases such as hypertension and DM. To ensure the quality of life the patients, evaluation of satisfaction with the PROLANIS program that can be proposed to government and improved health quality services is required. Health quality service reflects the level of satisfaction about health services, particularly in the PROLANIS program. The data analysis is presented in Table 2.

Table 2 provides information about baseline characteristics, from which one can conclude that most of respondents are women, their occupations are mostly housewives; their level of education is mostly senior high school; duration following the PROLANIS program is mostly 1–2 years, and get SMS gateway from the clinic, home visit by healthcare workers, private consultation, and routine following the program. The gap analysis was conducted to assess health quality services between HT and DM patients based on five dimensions in Table 3. According to Table 3, all dimensions of quality are below 0. This means that health quality services among the patients are low. Among those dimensions, the assurance aspect is the closer of 0 point, yet the others are not that can be resumed assurance aspect more qualified than others.

According to Figure 1, the characteristics of each question that was posed to respondents were below 0 for almost all questions, except for question 15 and 24 that pointed out about PROLANIS services is very accurate and patient's confidentiality. Meanwhile, the CSI score was found to be 74.45 for HT and 75.15 for DM patients; this means that requiring of concern by the government. Those scores provided information that the program must be reviewed, and root causes of the problems should be searched. Figure 2 illustrates that almost all respondents in quadrant 1 require primary intervention because expectation of patients is low, and reality is similar. Meanwhile, in quadrant 2, expectation of patients is high, but the reality is low. By contrast, the Cartesian diagram in Figure 3 indicates that almost all respondents' answers were inside quadrant 2, meaning that the expected maintaining achievement because expectation of the patients is high, but reality is low. The other spots were distributed in quadrant one and three.

Based on Table 4, it was concluded that in quadrant 1, almost tangible dimension is more dominant than the others, and in quadrant 2, the most prevalence is that of assurance and empathy in HT patients and responsiveness in DM patients. The other questions are distributed inside the other ones. According to concordance level score based on the IPA analysis, was found to be 93.8% for HT patients and 95.4% for DM patients. Those values are less than 100%, so that the government should be concerned about analysis of the problems, despite the fact that reaching 100% isdifficult. The comparative analysis for determining differences in health services quality between HT and DM patients was done using Table 5.

According to the Man–Whitney analysis, it was obtained that the assurance aspect had correlated among HT and DM patients; however, the other aspect was not associated with the variables.

Table 1: Customer Satisfaction Index Interpretation

Index	Interpretation
X ≤ 64%	Very poor
64% < X ≤ 71%	Poor
71% < X ≤ 77%	Cause for concern
77% < X ≤ 80%	Borderline
80% < X ≤ 84%	Good
84% < X ≤ 87%	Very Good
X > **87**%	Excellent

Table 2: Baseline characteristic of respondents (n = 230)

Variables	n (%)
Gender	
Male	60 (26.1)
Female	170 (73.9)
Occupations	
Housewife	115 (50)
Laborer	12 (5.2)
Retirement	46 (20.3)
Farmer	15 (6.5)
Private sector	31(15.1)
NA	11 (2.9)
Education	
Uneducated	3 (1.3)
Elementary	52 (23)
Junior high school	47 (20.4)
Senior high school	86 (37.4)
Undergraduate	31 (13.4)
NA	11 (4.5)
Duration follow the program	
1–**2** years	135 (58.6)
3–**4** years	84 (36.5)
≥5 years	11 (0.04)
SMS gateway	
Yes	176 (76.5)
No	54 (23.5)
Home visit	
Yes	101 (43.9)
No	129 (56.1)
Consultation	
Yes	185(80.4)
No	45(19.6)
Follow up **program routinely**	
Yes	97 (57.8)
No	133 (42.2)

NA is not applicable due to missing data

Table 3: Analysis of the GapScore based on dimensions among HT and DM patients

Dimension	Hypertension	Diabetes Mellitus
	GAP score	GAP score
Tangibility	−0.29	−0,28
Reliability	−0.30	−0,21
Responsiveness	−0.23	−0,18
Assurance	−0.09	−0,07
Empathy	−0.26	−0,19

Table 4. Resume of quadrants based on the IPA analysis

Case	Quadrant	Question numbers
Hypertension	1	4, 7, 8, 9, 10, 11, 13, 18, 19, 20, 21, 34
	2	3, 12, 14, 17, 22, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 35
	3	1, 2, 6, 15, 16, 24
	4	-
Diabetes	1	1, 2, 4, 6, 7, 8, 9, 11, 12, 31, 34
	2	10, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 30, 32, 33, 35
	Quadrant 3	3, 15, 24
	Quadrant 4	-

Table 5. Comparative analysis among HT and DM patients based on dimensions of the health service

Dimensions	P value
Tangibility	0.580
Reliability	0.274
Responsiveness	0.059
Assurance	**0.001***
Empathy	0.103
All dimensions	0.943

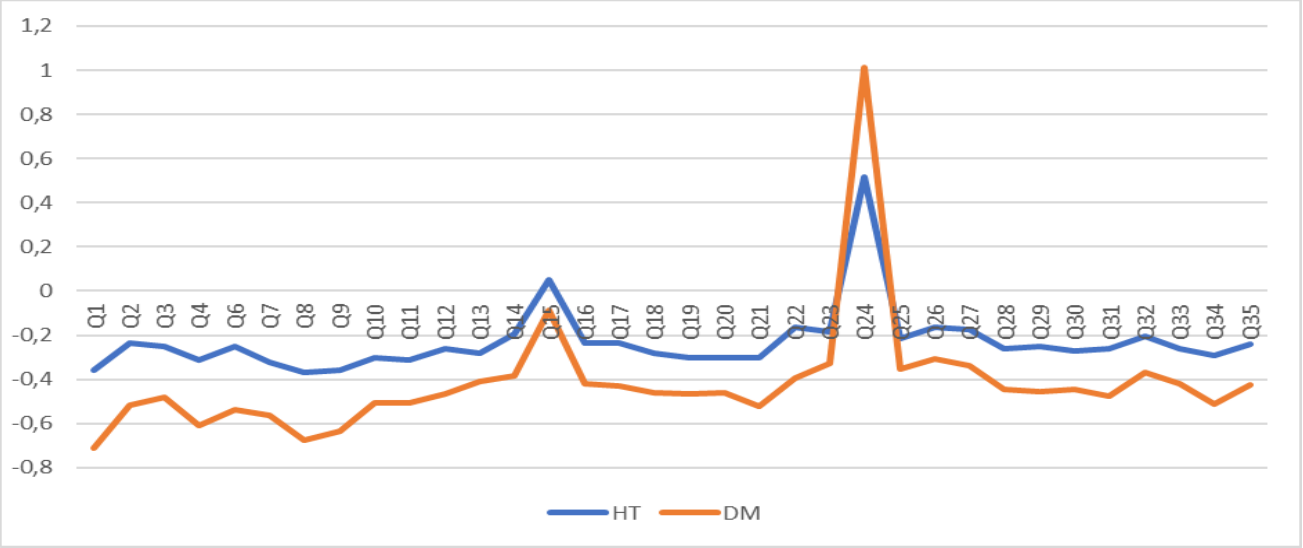

Figure 1. ***Gap analysis based on each question among HT and DM patients***

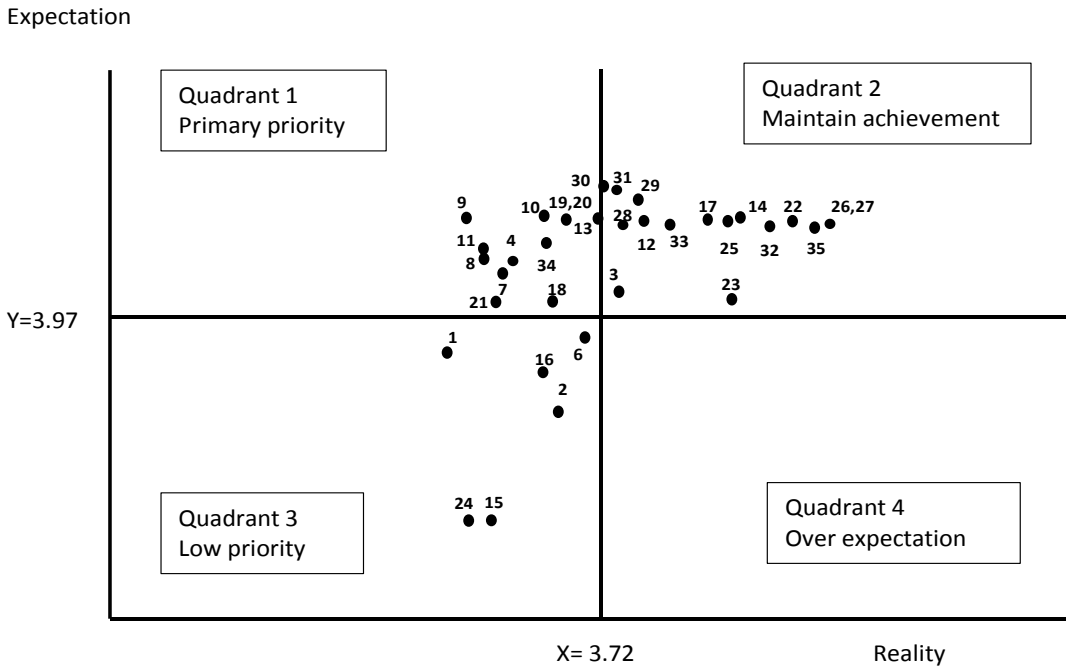

Figure 2. ***Cartesian diagram of HT patients***

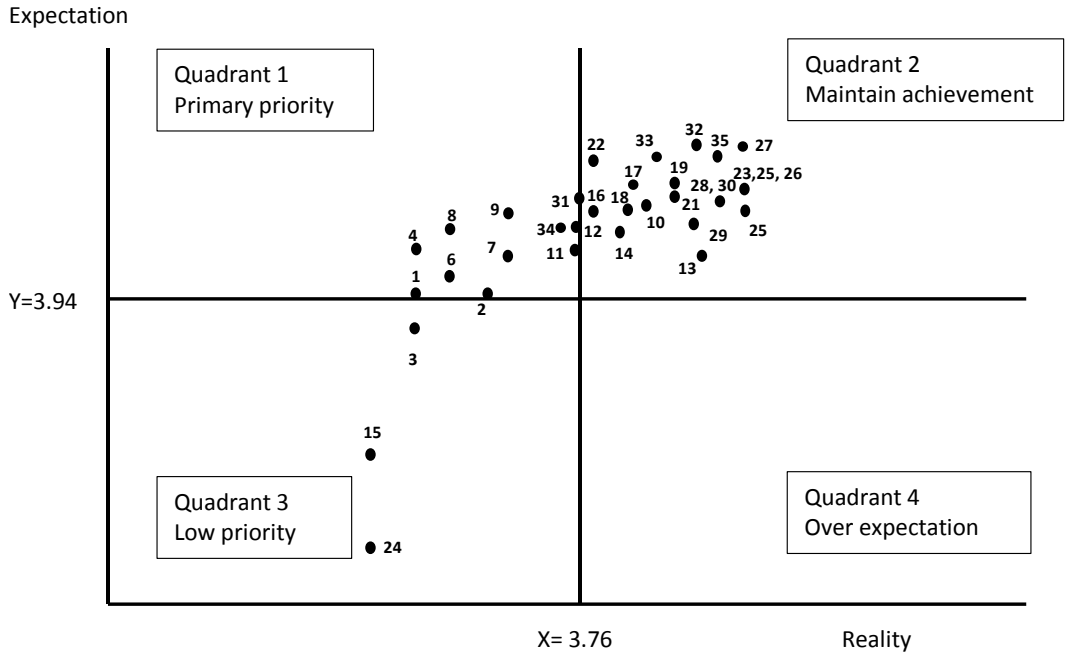

Figure 3. *Cartesian diagram of DM patients*

DISCUSSION

Based on the descriptive analysis, it can be assumed that the PROLANIS program had been conducted in 5 previous years and was equipped by four primary programs, such as home visit, medical consultation, SMS gateway, and medical examination. However, the home visit program was not implemented as comprehensively as the others. Several problems are caused by many patients that visit community health services (CHSs) every day, so that the doctor does not have much time to visit patients at home; community-based programs in CHSs were abundant, such that as the doctor focuses on those programs, there is a lack of management and follow up of patients with acute or chronic disease[13]. On the gap analysis that had been made, almost all diabetes and hypertension patients were not satisfied with the PROLANIS program, yet the assurance dimension was slightly qualified than others. Assurance dimension in health services reflects guarantee that is given by CHSs to patients, such as healthcare workers' services, drug information, and confidentiality of conditions of the patients; additionally, quality assurance must be strengthened in delivering health services[14]. Particularly among patients who have been suffering from chronic diseases for long time, one should ensure confidentiality of information. The data from the CSI supported by the gap analysis indicated that the CSI index was at 74.45 for hypertension patients and 75.15 for diabetes patients. The CSI index highlighted that the PROLANIS program should be concerned by the government to prevent patient dissatisfaction or low-quality services in the program[15].

Across the Social Insurance Administration Organization Indonesia Programs, consumer satisfaction generally plays an important role in the quality of health care and health delivery. Customer satisfaction in a health system has a role in successful health delivery, particularly in the national health insurance era in Indonesia. The components of satisfaction in primary care, such premium payment, information services and membership[16]. The element of a CHSs center was focusing on not only the building condition, comfort of the waiting room and other tangible aspects but also responsiveness, hospitality, and characteristics of patients such as education level, membership of national insurance and condition of CHS[17]. In addition, attitude and behavior of healthcare workers play a pivotal role in supporting tangibility and responsiveness, particularly among chronic disease patients[18]. Chronic disease patients require warranty, support and confidentiality in handling their chronic diseases because the conditions are a physical or psychological burden.

Based on the Cartesian diagram that reflected health service components, it was attained that questionnaire items were distributed around quadrants 1 and 2. When they were distributed in quadrant 1, intervention is an obligation, whereas distribution in quadrant 2 indicates that achievement should be maintained. The Cartesian diagram indicated that reliability and assurance responsiveness for hypertension patients, whereas among diabetes patients, tangibility and reliability were supposed to be the intervention. However, the assurance dimension items were divided into quadrant two. The data in the Cartesian diagram were strengthened by data from the gap analysis, so that assurance was the

most important aspect to satisfy patients in PROLANIS programs. Overall, the IPA analysis indicated that the concordance level between expectation and reality was 93%–95%, which means that values did not reach 100%; it was mandatory for policy maker to get the highest score of IPA to prevent low-quality health services in the PROLANIS program, despite to grab it was difficult because variables that influence health service aspects were complicated.

The development of the model of service quality involved systematic research after various refinements, resulting in the publication of the SERVQUAL instrument. Those dimensions require strengthening of a CHSs system through, for example, competence, courtesy, credibility, security, accessibility, and communication[16,19]. Competence is the possession of the required skills and knowledge to perform excellent care for every health services worker. Courtesy is consideration for the customer's property and a clean and neat appearance of contact personnel, manifesting as politeness, respect, and friendliness. Credibility includes factors such as trustworthiness, belief, and honesty. It involves having the customer's best interests at a prime position; this might be influenced by company name, company reputation, and the personal characteristics of each worker. Security enables the customer to feel free from danger, risk, or doubt including physical safety, financial security, and confidentiality. Access is approachability and ease of contact. Communication means both informing customers in a language they can understand and listening to customers. A company may need to adjust its language for varying needs of its customers[16,17]. Those elements should be implemented in the health services sector; however, being perfect is not easy, and all stakeholders should adopt appropriate approaches to get maximum achievement in healthcare services.

The results of the Man–Whitney analysis were indicated that there was no difference in level of health services quality between hypertension and diabetes patients; this showed that there was no difference between HT and DM sufferers in the PROLANIS service, so they have the same priority in intervention programs, whereas the five dimensions indicated that only assurance aspects were correlated by the health services quality in the PROLANIS program.

Assurance is one of the aspects that influence health service quality. This aspect includes competence, courtesy, credibility, and security that require collaboration among stakeholders[16,19,20]. Patients will be expected to find everything they want about their health. Two other aspects in the assurance factor are science and technology and how to apply them in the actual context of the healthcare system[21]. Science and technology, as primary components of quality assurance, are important aspects that support the doctor–patient relationship in the health system. PROLANIS will run well and on target if the assurance aspect is carried out. During the program, it is expected that a medical professional provides privacy and protection aspects of patient confidentiality to maintain the relationship between medical doctors and patients, so that patients feel safe and comfortable when carrying out the examination. This aspect, if run correctly, can increase the level of satisfaction between hypertension and diabetes patients[20,22].

CONCLUSION

The quality of the PROLANIS program was low in CHSs in Sleman District, Yogyakarta Province, Indonesia. Meanwhile, the assurance dimension correlated with health service quality among DM and HT patients.

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