Effective health services planning and delivery: A qualitative case study exploring health services users' perspectives

Abstract

Introduction: Healthcare service is an essential determinant to population health. This qualitative case study aims to explore health service users' perspective of effective health services delivery and the current challenges affecting the management and delivery of health services at a primary healthcare facility in Madang Province, Papua New Guinea (PNG).

Methods: Qualitative data were collected using semi-structured interviews with key informants (KI) representing academics, undergraduate students, administration staff, patients and healthcare workers. The interviews covered three main areas: users' views of effective health services, current challenges affecting effective planning and management of primary healthcare services, and interventions to improve health services planning and delivery.

Results: The services users associated effective health services delivery with increased availability, accessibility, acceptability, and quality healthcare. Many factors exist to influence the effective planning and delivery of health services. The results show that health systems and personal factors have a major influence on the planning and health services delivery.

Conclusion: The findings from this study call for an evaluation of the current healthcare system, particularly at the primary healthcare level, as the primary point of contact to the formal healthcare system, and the need for developing a contextual model of healthcare that meet the needs of the service users. We concluded that if health services users' perspectives are considered in health policy, the local community may experience significant improvement in health status.

KEYWORDS: Qualitative research method, Effective health services, Patients perspective, Papua New Guinea

Introduction

Healthcare service is an important determinant of community health[1]. Globally, many healthcare providers aim to provide effective health services to improve the health of their citizens. Since the introduction of the primary healthcare (PHC) approach of healthcare delivery in 1978, the global community has witnessed significant improvement in population health [2]. These improvements include the prevention of infectious diseases (tuberculosis (TB), HIV, malaria), reduction in mother and child deaths, eradication of smallpox, advancement in medical technology, and increased consumer participation in health service planning and decision-making[3]. Despite, these notable changes in the global community, weak health care systems in low and middle-income countries have prevented the local community from accessing health services. Numerous literature found that the prevailing country's economic, cultural, geographical, and political situations have major constraints on access and use of healthcare services [4–6].

Papua New Guinea (PNG) healthcare system is struggling to deliver adequate healthcare services despite having a growing economy in previous decades [5,7,8]. The Asian Development Bank reported that most of the health institutions have deteriorated affecting access to health services particularly the rural population[9]. Further, WHO (2018) categorized PNG among the top ten countries with a high burden of TB [10]. According to WHO, a good healthcare system provide quality health services that are readily available and accessed by the local community when they need them [11]. WHO further elaborates that quality health services are a key driver to improved health outcomes and lead to greater organizational effectiveness in planning and organizing healthcare services.

In contrast, the provision of effective public and clinical health services is a difficult task and has never been easy for health services providers[12]. Many authors dispute the meaning of effectiveness and its practicality and application at the point of delivery[13–15]. Many types of literatures associate effectiveness with numerical values, such as accomplishment of established targets and measuring the percentage of money spent on health service against planned activities. As a result, it does not represent the true picture of overall health services, and most importantly, the ingredients of inclusive and integrative views of the general population are ignored and grossly abused, particularly the views of the health services consumers on the current state of health knowledge [16,17]. It is therefore proper to investigate the definition of effectiveness in line with the current practice and health knowledge of people accessing health services. In Berman et al. [18] opinion, effectiveness should be defined by health services users' interpretation and understanding, and determine if there are any real health benefits and improvement to the health of the individuals and community through the health services

provided by the healthcare system. Regmi[14] further argues that health services consumers' opinions and experiences can be useful for planning and scaling up health interventions.

The World Health Organization (WHO) associate effective health services with affordability, acceptability, availability, accessibility, and quality[19]. Quality healthcare is defined as a well-functioning health system working in harmony and is built on having trained and motivated health workers, a well-maintained infrastructure, and, a reliable supply of medicines and technologies, supported with adequate funding, and evidence-based policies [19]. Further, quality healthcare is one that is affordable with minimum cost, culturally acceptable to patients; basic services are available, and can be easily accessible when needed. In contrast, ineffective health services delivery is a main concern for many countries, particularly in low and middle-income countries (LMICs). Thus, the healthcare in LMICs is characterized by high cost of clinical care, poor access to basic drugs, inappropriate provision of health services, and absence of basic healthcare at the PHC level [19].

The healthcare workforce is the vital domain of the healthcare system globally. Studies have shown that the availability of health workers increases access to health services [12]. A study done by Chhea, Warren, & Manderson [20] showed that more than 70% of the physicians in India work in cities where only 26% of the population live. Similarly, 80% of the health workers in PNG work in urban centers, where only 13% of the population live compared to 87% in rural districts [21]. These studies found that the lack of health workers in rural areas reduces access to health services. WHO (2009) asserted that other factors like health systems strengthening, governance, and community participation in the planning of health care services are equally vital for an effective healthcare system. Healthcare providers face an increasing demand from the public for access to health care and use of new equipment, new treatments, and use of the new model of care, at the same time expected high demand on the quality and safe care [22].

An important aspect of healthcare planning and delivery is utilizing patients' experiences and views[17]. Smith et al. [17] proposed that recommendations from the patients could provide valuable information for strategic planning and development of the healthcare services model. This study

argues that subjective experience from the patients' may provide useful insights for interactive planning and delivery of health services that meet the needs of specific groups of patients [17] Additionally, this study discovered several main concepts related to patients experiences including improved communication, desire to be treated with respect and dignity, need for coordination across the different levels of healthcare, and the desire for more personal choice and decision.

Numerous studies [17,18,23] have specifically examined the effectiveness of healthcare service delivery and management. This study done by Regmi [18] in Nepal concluded that service users convey strong information about the health sector and their involvement in the policymaking and decision-making process may result in positive change to the district health services. Another study done by Francis, Gurch, and Bertha[24] call for an assessment of the current health care delivery system to ensure that patients utilize the appropriate level of healthcare. Despite the increasing advocacy of the importance of patients voices in healthcare planning and management [17,25], their voices are not always heard and included in the planning and management of health services. In PNG, there is a lack of data on users' perspectives of effective health services delivery. This study aims to explore users' perceptions of effective health services delivery and challenges affecting the planning and delivery of health services at the PHC facility.

We believe that an integrated approach to planning and managing health services using users' experiences provided a strong foundation for planning healthcare. Nevertheless, users' experiences of healthcare are under-discussed in the PNG health sector. There is an urgent need to discuss such a context from the users' perspective. A research conducted by Regmi[18] on the effectiveness of health services provided insights on barriers and facilitators to effective health services[18]. However, few studies on health services users' perceptions of efficient health services were done in PNG sites despite studies in other developing countries such as Nepal[18]. The purpose of this research is to explore users' views of effective health services and investigate barriers or challenges affecting the effective management of health services. The findings from this study may provide useful insights for health services planning and management to improve the effectiveness of health services.

Methods

Study approach

This research employed a qualitative research approach based on social constructivism theory. According to Boyland[26] the purpose of a social constructionism approach is to construct social context and social reality. Guba and Lincoln[27] believe that the human world is different from natural, physical science. Therefore, it must be studied differently as an individual construct and assign meaning to the world through their interpretations and interactions with the world[28]. Boyland[26] explains that social constructionism is about constructing knowledge about reality, and not constructing reality itself. The motive of this approach is to employ numerous data sources to explore the same phenomenon from different perspectives because social reality is contextually embedded within its local settings[26]

Study setting

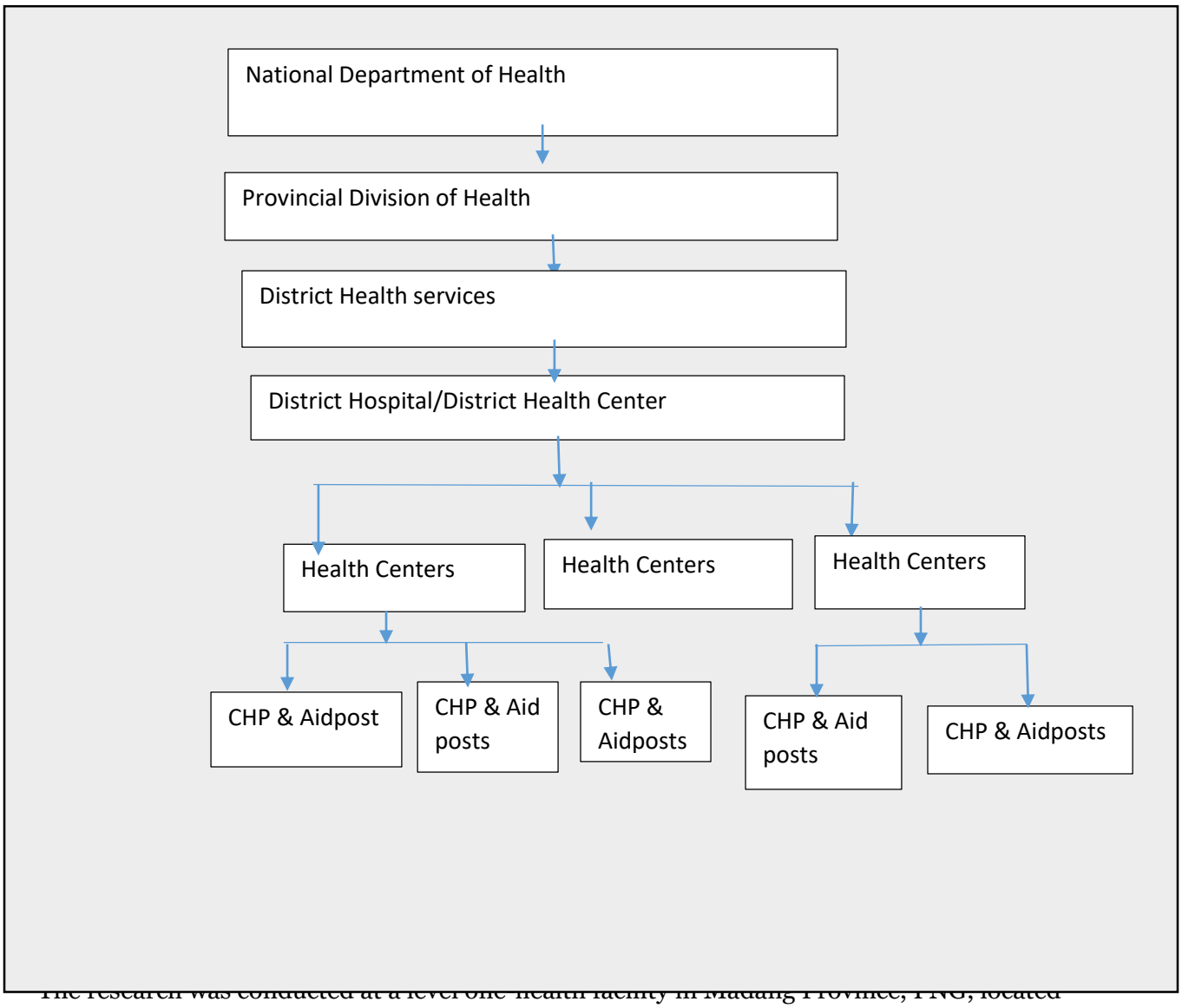
PNG is located on the northeastern end of Australia and is the largest island country in the Pacific region in terms of its landmass and economy[8]. It shares bothers with Indonesia on the West, Solomon Islands on the east and Australia on the south[29]. PNG is one of the most linguistically, culturally and geographically diverse country in the world with over 850 different languages and 9.2 million inhabitants[8]. Papua New Guineans are predominantly Christians with very few cultural religionists. More than 87% of the populace are subsistence farmers and live in rural and remote locations, while others work in white-collar jobs, arts and crafts and businesses. The state comprises 22 provinces and 89 districts with each province divided into districts and each district consist of more than ten local level governments [4,8]

Organization of healthcare services in PNG

Healthcare services in PNG are provided through a network of unified structure[8]. One national referral hospital, four regional specialist hospitals, 20 provincial hospitals supported a network of 2400 aid posts, 500 health centers, and 45 urban clinics [9]. Health employees that provide health care include community health workers, nursing officers, health extension officers (HEOs), doctors and other support services staff [30]. The Aidpost serves a catchment population of between 500 and 1500 at the community level [8,9]. The customary villages in PNG has than 500 people, each aid post is responsible for one to six villages. Community health workers (CHWs) usually work at the aid post and provide general primary healthcare and provide information on healthy lifestyle and health promotion to prevent diseases [31]. A health center serves a population of between 2000 – 20,000 people. Respective health centers provide curative and public health services and act as a referral facility for about 5 and aid posts (Figure 1). District hospitals or district health centers provide comprehensive curative and preventive

healthcare and act as a referral health facility for all acute health problems for the health centers in the district [8,31].

The National Department of Health (NDoH) provides advisory roles and policy formulation, while the provincial and district health services provide coordination and supervision to the implementation of national health policies in the province, districts and local level. The employees of the national department have the overall responsibility for monitoring policy and standards, offer technical support, coordinate the national health information system and health policy and data management [31].



The research was conducted at a level one health facility in Madang Province, PNG, located at the Northern coast of the mainland of PNG[32]. Madang Province is one of the twenty-two provinces in PNG with a diverse culture, languages, and environment ranging from the

highlands ranges to the coastal lowlands[32]. In the previous decades, Madang Province has experienced very little social and economic development resulting in high illiteracy, low socio-economic activities, high school leavers drop out and high disease burden [33]. Both the government and private health care providers provide health services in Madang Province. Based on my observation, the facility was staffed by professional nurses with weekly medical consultations performed by doctors who are also full-time academics, with an average of 15 patients per staff contact hours. Furthermore, based on my health facility investigation, skin diseases, malaria, and simple cough were the common causes of outpatient attendance. The choice of the study site was influenced by the feasibility of doing the research, travel cost, and time. Additionally, this health facility was selected because no such study was conducted to assess the effectiveness of its health services and the barriers affecting the health services from the perspective of users. The health facility served a total population of more than 3000 people including students, academics, and the nearby community. The results may be useful for policy makers and university administrators for planning to make health service delivery more effective and accessible to its users.

Participants

Between April and August 2020, 21 in-depth interviews were conducted with health services users and health professionals. The participants were selected using the non-probability purposive sampling technique to accomplish theoretical sampling[34]. The final sample includes the study population and represented the full range of demographic variables such as age, sex, education, religion, and experiences. The health facility attendance record was used as the sampling frame. The size of the sample was not fixed at the start of the research so sample and data collection grew simultaneously, the sample size was based on the results of the data analysis, and the recruitment (data collection) continued until saturation of emerging key themes or categories was reached[34]. The participants included 05 academics,09 undergraduate students, and 07 adult patients from the nearby community. The age of the interviewees ranged from 18 – 73 years. Table 1 shows the general characteristics of the health services users.

Table 1 Basic characteristics of interviewed healthcare users

Characteristics	Number

Gender	
Males	05
females	16
Age	
18-30 years	12
31 – 50 years	07
Above 50 years	03
Education	
Primary level	00
Secondary level	09
Tertiary level	12
Religion	
Christian	21
Others	00
Marital status	
Married	09
Single	12
Others	00

Data collection

Before the data collection, study participants were given guided topics focused on three major questions: (1) users' perspectives of effective health services planning and delivery, (ii) barriers and problems encountered, if any, while accessing the healthcare services, (iii) actions required to improve the effectiveness of the healthcare services. A topic guide was developed based on the literature review and the researchers' reflection on health services users' perceptions (Box 1). The same topic guide was used for all participants to allow flexibility for any additional issues to be discussed. The topic guide employed in this research was piloted with three health services users in another non-study health facility to improve the validity of the questions[35]. Based on the results, the guide was slightly modified for use in the selected study site. The interviews were conducted at the location selected by the participants. The academics were interviewed in their office while the students were interviewed at the students meeting venue and patients from the community were interviewed at their homes.

Box 1 Topic guide

- Tell me about your understanding of effective health services planning and delivery?
- What have been the barriers and problems while accessing health services at the primary health care facility (in terms of drugs, operations, staff, health services, information, infrastructure)?
- Do you think that the health services provided by the health facility met your health needs?
- What are some activities that can be implemented to improve the planning and delivery of health services at the health facility?
- Is there anything further you would like to discuss?

Data analysis

The qualitative study used semi-structured in-depth interviews (IDIs) to generate experiential data from health services users who are frequent users of the health facility. In order to provide some contextual data to the results, participants were asked to describe their views of an effective health service, problems they may encounter, if any, while accessing health services at the facility and how to improve the planning and delivery of health services of the health center to determine the model of healthcare. The interviews were audio-recorded with permission from the participants using a digital voice recorder and later transcribed verbatim including emotional expressions into the computer using Microsoft @Word 2016. The interviews were imported to QDA Miner Lite software for qualitative data management and analyzed to expose coding structures: categories, sub-categories, themes, and codes[36]. QDA Miner Lite facilitated each interview to locate terms and sentences (phrases) that formed the foundation for the development of themes and sub-themes and also facilitate association between each interviews[37]. The transcribed document was emailed to the participants, who were asked to check the written document and agree or disagree with what was written. Any disagreements were resolved accordingly.

Ethical consideration

Informed consent was sought from each participants prior to the start of the study, after they have read the participant information sheet. Permission to conduct the study received from the Divine Word University, Faculty of Medicine and Health Science Research Committee (approval number: FRC/MHS/01-19) and Vice President Student Affairs, Divine Word University to access the health facility and to collect data at the health facility site.

Study limitations

This study has several limitations. First, the study site is limited to a level 1 health facility. Therefore, the findings may not be automatically generalized to other health settings elsewhere. However, provision of effective health services is a global concern among all healthcare providers. Hence, healthcare providers may find the results helpful for planning health services. Second, the study site is a private clinic, and the cost of healthcare services is high. Majority of the participants are university staff and students with a high level of socioeconomic status and therefore may not reflect the views of people with lower socioeconomic status in the community. The researcher was unable to recruit many patients from the nearby community that uses the health facility due to time limitations. Therefore, there may have been a selection bias in the sample. However, the purpose of the study was to identify areas that need improvement to health services so the key informants from the university may provide useful information that may benefit the nearby community.

Results

Characteristics of the respondents

Table 2 summarises the respondents' demographic characteristics. A total of 21 in-depth interviews were conducted with the health services users (5 males and 16 females). Participants were grouped based on their basic demographic variables, e.g., age, sex, education, religion, experience, and marital status. The majority (n=16/21) of the participants were female compared with 5 male participants with an average age ranging from 20 - 79 years old. Respondents were asked if they were frequent users of the health facility. This data was important, as personal experience of the phenomenon under study was significant to provide an in-depth rich subjective experience of the effectiveness of the health services and problems that may impede the planning and delivery of healthcare services. Five key themes emerged from this study: availability, accessibility, acceptability, quality, and health systems challenges.

Availability

Most of the respondents are concerned over the availability of healthcare providers at the health facility to provide the required services. They were concerned that the few health workers at the facility have affected the utilization of basic health services. The responses and the meaning the participants talked about in terms of their perceptions of effective planning and delivery of health services when they were asked the question are presented here with the supporting quotes. Respondents said that the availability of health workers and specific healthcare services were the key interpretation of the respondents' perceptions of effective planning and health services delivery. The majority of the respondents identified the presence of health workers as an effective element of health services delivery system:

"*I suggest that at least two more nurses and a doctor should be employed to provide adequate health services. At the moment, there is no fulltime doctor and that complicated health conditions are referred to the provincial hospital. There are more patients at the hospital and we have to wait for many hours to consult a doctor" (Participant 004).*

"An additional nurse should also be recruited to increase the current staff strength. Currently, only one nurse lives inside the campus and takes all emergency cases and when she is absent, there is no-one else to report to particularly during the weekends" (Participant 007)

Some respondents noted that ensuring the availability of adequately trained and competent PHC providers at the health institution is a significant element of health service planning. The respondents' perceptions of effective healthcare are that the presence of an appropriate number of healthcare providers is of limited benefits if providers are absent from their planned duties or if health services delivery is structured in such a way that patients are unable to access skilled healthcare provider at convenient times.

"I think that the current health workers are very experienced in their work. They do right diagnosis and prescribe correct treatment and you get better. It is good to recruit additional staff but they should also consider their skills and experience like a midwife to provide mothers clinic or Paediatric nurse to attend to our children when they are sick (Participant 007).

Respondents feel that patients can only receive high quality healthcare from competent health workers if those health workers are present in facilities and trained in relevant healthcare**.** Others shared similar views that even with the availability of large numbers of health workers, inadequately trained and skilled providers will unlikely contribute to individual or community health outcomes.

Accessibility

Findings from the semi-structured interviews revealed that HCWs' skills and attitudes were influential on their health-seeking behavior. The majority of the respondents' view accessibility as an indicator of effective health services planning and delivery. Nineteen health services users highly commended the health workers for their positive attitudes, and actions while seeking treatment at the clinic. This approach has established a positive environment for open communication and dialogue between health providers and users. As a result, respondents stressed that they were not ashamed to provide specific details of their medical conditions. On the other hand, the participants are concerned about the cost of healthcare. Respondents highlighted that the high cost of healthcare is a barrier to accessing healthcare for residents of lower socioeconomic status. Participants are concerned that patients coming from disadvantaged settings may not afford the cost of healthcare. Besides, the majority of the participants expressed concerned over the lack of information regarding the operating hours. They emphasized that effective communication to end-users about health services is an element of good management. Participants are concerned that there is no information from the HCWs about how to access clinical services during medical emergencies.

"Services provided is superb! Staff are very helpful" (Participant 001). "I trust the nurses so I want to tell them about all my health problems, because I know they will help me" (Participant 0020).

"The clinic is convenient for me to access and also it has excellent team of clinical staff. The clinic has a friendly receptionist who is also very helpful. Most of the times, I book in to see medical doctors who are polite, professional and provide the best care and advice. On few times, I had appointment with the nursing staff. In addition, nursing staff are knowledgeable and provide best care. I have no negative comments but praises" (Participant 006).

The cost of some services are expensive, I feel for those that are unemployed and come from squatter settlements" (Participant 016).

"There is not even any form of notice who to contact during emergencies" (Participant 004, 011).

The respondents' claims indicated that access to comprehensive, quality healthcare services are important for promoting and maintaining disease, reducing unwanted disabilities, and premature death. The healthcare industry is one of the key domains that influence the local population. This study reveals the important role of health professionals and socioeconomic

status as narrated by the study respondents. As healthcare expenditure increases and the sector continues to grow, accessibility remains a major concern in many countries, particularly populations with lower socioeconomic status (LSES).

Acceptability of health services

Respondents emphasized the significance of providing health services according to end-users needs and expectations. The design and organization of health care services should be done according to current health and demographic information. In that way, healthcare providers are confident that health services are relevant to the needs of patients. Health services are provided to different segments of the population including men, women, and children. The respondents stressed that health services should be tailored to meet such groups. However, respondents stressed that due to lack of consideration of end-users needs, some vital services such as mother and child health, emergency services, and microscopy are not provided. As a result, some female respondents stressed that their work is affected because they had to care for their sick child at the nearby general hospital.

"We have specialist doctors working part-time on campus except a Pediatrician – we have so many children especially babies on campus and if we had a Pediatrician, it would be very good for us. Babies need special care and special attention and it is vital we have a specialist for children on campus. When my baby gets sick, I do not work and this affects my students, especially those of us who are teaching. With advice from a pediatrician we will feel that our babies are okay and that we can go to work otherwise, we take sick leave and nurse them at home or go somewhere else to look for help. The services provide by the public health system is very inefficient" (participant 002).

This situation was largely inefficient, especially from the users' perspectives. Indeed, the users spend a lot of time travelling to other health settings, had to suffer a great deal of stress queuing at the health facility to get the treatment or see the physicians. Very often the public health facility is overcrowded with patients and they have to wait long hours.

Quality of healthcare

The quality of healthcare is an important indicator of effective health services. The participants in this study associated quality of healthcare with expressions such as best, timely,

fast, and good staff behavior. About 17 participants reported that the general level of care given at the clinic is outstanding compared to other public health facilities. Furthermore, another 15 participants reported that they have no major problems accessing health services and consulting health workers to seek medical treatment. Additionally, they feel comfortable talking to staff, as they are responsive to their needs. The participants stressed that the quality of health services they receive is of a high standard. They are given medical treatment on time with low waiting time at the clinic. The healthcare workers are caring as this is reflected in the level of care given to patients and the high rate of recovery after taking the prescribed treatment. One participant said that:

"*Services provided at clinic are the best by any standard as far as PNG's public health care system is concerned. Best in the sense that service is provided on time, patients do not wait on long queues, staff are friendly and polite and they talk to you nicely. Treatment given also is effective, meaning you get healed once the staff start you on treatment for whatever condition you present to them" (Participant, 008).*

The above respondents' narratives generally reflected the core attributes of quality healthcare that is measured by six domains: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equitability. Healthcare quality remains an important discussion topic for both clinicians and patients[38].

Health systems challenges affecting the delivery of health services

Lack of continuity of health services

Most respondents reported that disruptions to health services due to the closure of the clinic were seen as a major barrier to accessing clinical services. Furthermore, the closure has affected the continuity of treatment for the health problems. The majority of the participants consider access to health services from 5pm to 7am, weekends, and public holidays as problematic. Most of the respondents agree that access to health services is difficult during these times. Others, about twelve respondents even reported that there is no contact information on who to consult during emergencies. Interviews with health care providers affirmed that there is no formal arrangement with the university administration for overtime work during these hours as highlighted by the users. As such, they affirm that they don't work shifts and overtime and no contact information is posted for patients to access health workers. They explain that they are allowed to work from 8 am to 5 pm daily during weekdays and not on weekends and public

holidays. Additionally, another HCW noted that employment of a permanent medical officer at the clinic would address the accessibility issues raised by the users.

"Only if you happen to know one of the staff it is easy to call upon them during the weekend" (HCW 001),

"I sign the contract to work from 8 o'clock am to 5 o'clock pm from Monday to Friday. I am not allowed to work after hours, weekend and on public holidays. But I do help patients when they come to my house as part of my community services since I started work here" (HCW 001).

"It need a fulltime medical officer and leader who will plan strategic development of services" (HCWs 002).)

"Sadly, we do not have an emergency number that we can call in emergency. And we also do not know if a clinic staff/ or doctor available for assistance in emergency after hours and on weekends" (Participant 008).

Continuity of healthcare services has always been a core pillar of PHC services. Health users who receive continuity of care have improved health outcomes, higher satisfaction rates, and the healthcare they receive is more cost-effective[38]

Inadequate health services infrastructures'

The health services users responded that inadequate health services infrastructure such as a laboratory facility was an impediment to access and using of health services. The participants suffered additional challenges traveling to the pathology for simple blood examinations. The participants expressed disappointment over the absence of other health services. Both healthcare providers and service users expressed a need to start minor blood examinations at the health center. My interview with healthcare providers agree with the patients of setting laboratory facilities to resolve the problem.

"In terms of laboratory services, start with malaria microscopy. As this is the most common lab investigation ordered by officers at the clinic and clients have to go all the way to Paramed to do the test and bring the results back down to the clinic. It is a very time consuming exercise" (HCW 005).

"I suggest that the pathology section to check for Malaria parasites be available here at the clinic instead having patients walk all the way to Paramed for check-up then back to the clinic to get medication" (Participant 001).

Although a strong infrastructure depends on many institutions, PHC providers are considered key players of essential health services. PHC facilities provide opportunities for health service users to prevent disease, promote health, and respond to both acute and chronic health threats. Infrastructures is the basis for planning, delivering, evaluating, and improving community health[39].

Table 2 Summary of generated themes and codes/nodes

Thematic categories	**Organizing codes**
Availability	Presence of a trained worker
	Healthcare services availability
	Provider competence
	Adequate supply of health workers
Accessibility	Physical accessibility
	Economic accessibility or affordability
	Information accessibility
Acceptability	Affective attitude
	Burden
	Perceived effectiveness
	Opportunity cost
Quality	Effective
	Safe
	People-centered
	Timely
	Equitable
	Integrated
	Efficient
Barriers & challenges	Health systems barriers
	Operational policy
	Planning and management

Discussion

The purpose of this study was to explore healthcare users' experience of efficient healthcare services and problems affecting the delivery of health services at a primary healthcare (PHC) facility. The results from the semi-structured interviews of 21 health service users at the local PHC institution, Madang Province, PNG, supported this purpose. The respondents view effective health service as a vital determinant of population health. They relate to access to healthcare services with the availability of healthcare professionals at the health facility. The respondents also view accessibility as not just about having adequate health personnel's' but are adequately trained to provide both public and clinical healthcare services. the study also found that the respondents associated quality healthcare with continuity of health services. the respondents justify that the absence of clinical care and malfunctioning health facility as indicators of a weak health care system. The majority of the respondents asserted that discontinuity of health services and deficiencies in the health infrastructure pose a threat to positive health outcomes.

The results generated from this study are consistent with a previous study that assessed the healthcare delivery for children in the USA [40]. A study by Karen [40], measuring the challenges of social and structural issues as an impediment to healthcare, found that children without health insurance and those in rural locations cannot afford access to mental and dental health services. A recent study by August et al [3], on the effects of medicines availability and stock-outs on household utilization of healthcare services in Tanzania, found a strong association between the individual's healthcare utilization and constant availability of drugs at the health institutions. The study highlighted the significance of medical supplies in promoting accessibility to healthcare services in resource-constraint countries. The study concludes that systematic planning and organization of medical supply from the macro to micro-level is a key aspect of quality healthcare services. In another study by Daniel et al. [1], access to healthcare services was historically associated with demographic and socioeconomic determinants. This study found a strong relationship between residing in an urban community and accessibility and usage of healthcare. This study also found significant variations in healthcare use and access and certain socioeconomic and demographic populations. This study concluded that a persistent evidence of inequitable association exists between socioeconomic status (SES) and primary contact with the PHC system.

The study explored users' perceptions of efficient health services and obtained multiple theories associated with healthcare delivery. Berman et al.[25] explained that effective health

service delivery and performance provide an opportunity for patients to access and use health services. Furthermore, Berman emphasized that quality health services require adequate inputs such as efficient allocation of limited resources, and adaptation to new changes and technologies. There are several interpretations of the same event, but the most popular is made by Berman et al.[25] and Suman & Bhutani[41] that utilizing a combination of financial, physical, and human resources may promote organizational effectiveness. Berman and colleagues concluded that improving organizational performance is a significant assurance to the effective delivery of healthcare. Despite the heterogeneity of the respondents, the recurrent themes from the participants relates to availability, accessibility, affordability, acceptability and quality healthcare as indicators of efficient healthcare delivery.

Methodological strengths and limitations

This study has some limitations. The majority of the participants were residents from the university and limited residents from the nearby community due to time limitations. Additionally, the users are academics and therefore, were committed within their end-of-semester assessments and therefore unable to conduct follow up face-to-face interviews. As is common with qualitative case studies, this study is limited to a small primary healthcare facility and the results cannot be automatically generalized to other settings elsewhere. However, delivering effective health services is a global concern and is well articulated in other studies[7], and therefore, policymakers, health managers, and clinicians in other health settings may find this study useful for planning and delivery of healthcare services.

Conclusion

From the respondents' views, this study suggests that improved population health is associated with availability, acceptability, and utilization of quality health care. It supports findings from previous studies regarding access to healthcare services as key determinants of community health. The results from this study call for an evaluation of the current healthcare system, particularly at the primary healthcare level, as the primary point of contact to the formal healthcare system, and the need for developing a contextual model of healthcare that meets the needs of the service users. We concluded that health services planning and delivery should be equally supported with insights from health services users. However, caution needs to be exercised when interpreting the results and generalizing to the general population because of the limited study sample size and relatively small private primary healthcare facility.

References

1. Harrington DW, Wilson K, Bell S, Muhajarine N, Ruthart J. Realizing neighbourhood potential? The role of the availability of health care services on contact with a primary care physician. *Heal Place*. 2012;18(4):814-823. doi:10.1016/j.healthplace.2012.03.011

2. United Nations. *Sustainable Development Goals*. Vol 112.; 2015:211-212. doi:10.1192/bjp.112.483.211-a

3. Kuwawenaruwa A, Wyss K, Wiedenmayer K, Metta E, Tediosi F. The effects of medicines availability and stock-outs on household's utilization of healthcare services in Dodoma region, Tanzania. *Health Policy Plan*. 2020;35(3):323-333. doi:10.1093/heapol/czz173

4. Mckay J, Lepani K. Health system strengthening in Papua New Guinea : Exploring the role of mechanisms. *Lowy Inst Int Policy*. 2010;(November):2-40.

5. Grundy J, Dakulala P, Wai K, Maalsen A, Whittaker M. *Papua New Guinea Health System Review*. Vol 9.; 2019.

6. Asante A, Hall J. *A Review of Health Leadership and Management Capacity in Papua New Guinea*.; 2011.

7. Demir I, Khan M, Pulford J, Saweri O. *Service Delivery by Health Facilities in Papua New Guinea*.; 2018. doi:10.1596/29824

8. John G, Paison D, Ken W, Anna M, Maxine W. *Independent State of Papua New Guinea Health System Review*. Vol 9. PNG Government Press; 2019.

9. Asian Development Bank (ADB). *Health Services Sector Development Program, Subprogram 1: Sector Assessment (Summary): Health*.; 2020. https://www.adb.org/sites/default/files/linked-documents/51035-001-ssa.pdf

10. WHO. *WHO Guidelines on Tuberculosis Infection Prevention and Control, 2019 Update*.; 2019. https://www.who.int/tb/publications/2019/guidelines-tuberculosis-infection-prevention-2019/en/%0Ahttps://www.who.int/tb/areas-of-work/preventive-care/infection-control/Annexes4_5-GRADEtables.pdf?ua=1&ua=1

11. World Health Organization. *A Decade of Progress towards Better Health*.; 2018.

12. Gulliford M, Figueroa-Munoz J, Morgan M, et al. What does "access to health care" mean? *J Heal Serv Res Policy*. 2002;7(3):186-188. doi:10.1258/135581902760082517

13. Sekhon M, Cartwright M, Francis JJ. Acceptability of healthcare interventions: An overview of reviews and development of a theoretical framework. *BMC Health Serv Res*. 2017;17(1):1-13. doi:10.1186/s12913-017-2031-8

14. Regmi K, Naidoo J, Pilkington PA, Greer A. Decentralization and district health services in Nepal: Understanding the views of service users and service providers. *J Public Health (Bangkok)*. 2010;32(3):406-417. doi:10.1093/pubmed/fdp116

15. Li J, Shen X, Yeoh EK, Chung PH. Tuberculosis control programs and challenges in developed cities with intermediate disease burden: China experience. *J Thorac Dis*. 2017;9(5):E525-E528. doi:10.21037/jtd.2017.03.185

16. Crawford M. User involvement in the planning and delivery of mental health services. Published online 2001:410-414. d:/docs/_Tavi-Port/Lucy/2002/Notes from the WLMHT 6th Annual R&D conf.doc

17. Smith J, Scammon D, Beck S. Using patient focus groups for new patient services. *J Qual Patient Saf*. 1995;21(1):22-31. doi:DOI: https://doi.org/10.1016/S1070-3241(16)30124-9

18. Regmi K. Effective health services: Perspectives and perceptions of health service users and healthcare practitioners. *Prim Heal Care Open Access*. 2012;02(03). doi:10.4172/2167-1079.1000117

19. WHO. Health systems service delivery. *Who*. Published online 2012. https://www.who.int/healthsystems/topics/delivery/en/

20. Chhea C, Warren N, Manderson L. Health worker effectiveness and retention in rural Cambodia. *Rural Remote Health*. 2010;10(3):1391.

21. World Bank. *Service Delivery by Health Facilities in Papua New Guinea.*; 2017. doi:10.1596/29824

22. Buttons AS, Buttons AS. Health Services Delivery. *Asia Pacific J Hum Resour*. 2008;11(1):115-121. doi:10.1177/103841117601100108

23. Wong EL, Yam CH, Cheung AW, et al. Barriers to effective discharge planning: A qualitative study investigating the perspectives of frontline healthcare professionals. *BMC Health Serv Res*. 2011;11. doi:10.1186/1472-6963-11-242

24. Koce F, Randhawa G, Ochieng B. Understanding healthcare self-referral in Nigeria from the service users' perspective: A qualitative study of Niger state. *BMC Health Serv Res*.

2019;19(1):1-14. doi:10.1186/s12913-019-4046-9

25. Berman P, Pallas S, Smith AL, Curry L, Bradley EH. *Improving the Delivery of Health Services : A Guide to Choosing Strategies*.; 2011.

26. Boyland JR. A social constructivist approach to the gathering of empirical data. *Aust Couns Res J*. 2019;13(2):30-34. http://www.acrjournal.com.au/resources/assets/journals/Volume-13-Issue-2-2019/Manuscript5 - A Social Constructivist Approach.pdf

27. Guba EG, Lincoln TS. Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), Handbook of qualitative research (pp. 105-117). *Thousand Oaks, CA Sage*. Published online 1994:105-117.

28. Beaumie K. Social constructivism. *Theor Int Relations*. 2014;(April):248-268. doi:10.4324/9781351049955-5

29. Department of Health (DOH), Asia Pacific Observatory. *Review of Papua New Guinea Health System*.; 2019. Accessed on 04/03/20 from https://www.who.int/papuanewguinea/news/detail/28-02-2019-

30. Jayasuriya R, Whittaker M, Halim G, Matineau T. Rural health workers and their work environment: The role of inter-personal factors on job satisfaction of nurses in rural Papua New Guinea. *BMC Health Serv Res*. 2012;12(1). doi:10.1186/1472-6963-12-156

31. Ashwell HE, Barclay L. Problems measuring community health status at a local level: Papua New Guinea's health information system. *Rural Remote Health*. 2010;10(4):1539.

32. Matbob P. Elections and corruption: The 'highlandization' of voting in the Madang Open and Provincial Electorates. Published online 2007:2-21.

33. Trading Economics. Papua New Guinea - incidence of tuberculosis (per 100,000 people). Trading ECconomics. Published 2020. Accessed May 11, 2020. https://tradingeconomics.com/papua-new-guinea/incidence-of-tuberculosis-per-100-000-people-wb-data.html

34. Coyne IT. Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries? *J Adv Nurs*. 1997;26(3):623-630. doi:10.1046/j.1365-2648.1997.t01-25-00999.x

35. Ryan GW, Bernard HR. Handbook of qualitative research (Chapter 29 - Data

Management and Analysis methods). *Sage*. 2nd Editio.

36. Green T. Qualitative methodology and health research. Published online 2013:3-34.

37. Liamputtong. *Methodological Frameworks and Sampling in Qualitative Research*.; 2006.

38. Jeffers H, Baker M. Continuity of care: Still important in modern-day general practice. *Br J Gen Pract*. 2016;66(649):396-397. doi:10.3399/bjgp16X686185

39. WHO. WHO European Centre for Primary Health Care: annual report of activities 2017 (2018). Published online 2018. http://www.euro.who.int/en/health-topics/Health-systems/primary-health-care/publications/2018/who-european-centre-for-primary-health-care-annual-report-of-activities-2017-2018

40. Kuhlthau KA. Measures of availability of health care services for children. *Acad Pediatr*. 2011;11(3 SUPPL.):S42-S48. doi:10.1016/j.acap.2010.11.007

41. Suman P, Bhutani S. Availability of health services in Himachal Pradesh. *Int J Adv Res Dev*. 2017;2(6):231-238. www.advancedjournal.com