

**Factors Associated With Patients' Waiting Time Among Health Workers At Bushenyi Medical Center In Kabwohe**

**Sheema District**

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**Abstract**

Despite the recommendations from the Institute Of Medicine that all patients should be seen within 30 minutes of their arrival time, most medical centers continue to show lengthened waiting time. At BMC, the average waiting time is 45 minutes which is still more than that recommended by the institute of medicine and the purpose of this study was to explore the factors associated with patients' waiting time among health workers at BMC. We used a cross sectional descriptive quantitative study design involving 48 participants from BMC-hospital in Sheema district. A multi-stage sampling procedure was employed to select participants from health workers each day for a period of two weeks and data were collected using a self-generated questionnaire. Data was entered into a statistical package for social sciences software, SPSS V20.0 cleared, verified and analyzed. It was revealed that health workers' income level of 50000-150,000 ugx  $p=0.028$ ; (OR=5.00) was the demographic factor associated with patients' waiting time. The health provider related factors associated with patients' waiting time at BMC included number of patients attended to per day whereby receiving 10-20 patients per day  $p=0.014$ , (OR=0.10) and number of patients in the queue waiting for services ( $p=0.034$ ; OR=.06). The institutional related factor was only the provision of enough materials with ( $p=0.003$ ; OR=0.76). Basing on the findings of the study, factor associated with patients' waiting time was the income level of the health workers, number of patients attended to per day, the number of patients in the queue waiting for services and provision of enough materials. We therefore recommended that the management of BMC should provide the facility with enough materials and more health workers to match the number of patients receive.

**Keywords: Patients' Waiting Time, Health Worker and Bushenyi Medical Center**

**Introduction**

Patient waiting time can be described as the amount of time patient spent before being served and in hospitals (Yeddula, 2013).

The World Health Organization (WHO) identified patient waiting time for healthcare services as one of the key measurements of a responsive health system. According to the Institute of Medicine (IOM) recommends that at least 90% of patients should be seen within 30 minutes of their scheduled appointment time (MO & Adamu, 2013).

**Background of the Study**

While waiting time is a global phenomenon that affects healthcare organizations throughout the world, in Malaysia there is still much to be done in order to reduce patient waiting time in medical centers (Xie & Or, 2017)

In Africa, it was found out that of the 100 new patients seeking health care 51% wait for 90-180 minutes in the clinic whereas 36.1% of the patients are dissatisfied with the services, the commonest reason for long waiting time was many patients with few health workers (Obamiro, 2013).

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In sub-Saharan Africa, more than four hours has been reported as an average time patient take to wait in facilities. An average waiting time of up to 4.6 hours was reported in a study of patient flow efficiency in three HIV healthcare entrées in Uganda (Wanyenze et al. 2019).

In East Africa, according to Pillay et al.,( 2016) public hospitals documented that the average patient wait time, from registration to receipt of a prescription slip, was more than 2 hours, whereas the average time spent consulting the medical personnel was just 15 minutes.

In Uganda, the average waiting time ranges between 1.6hours to 1.85 hours in private hospitals, whereas public hospitals has an average waiting time of 2.4 to 2.6 hours in 2018 (Sriram & Noochpoung, 2018)

According to the triage nurse, patients wait for over 45 minutes before being served at BMC kabwohe patients wait for over 45 minutes, a figure which is 1.5 time more than that recommended by the institute of medicine

### **Problem Statement**

Despite the recommendations from the Institute Of Medicine that all patients should be seen within 30 minutes of their arrival time, most medical centers continue to show lengthened waiting time that is; 61% of the patients wait for 90 to 180 minutes in the outpatient department, yet 36.1% spend only less than 5 minutes with the doctor in the consulting room (Xie & Or, 2017).

In Uganda, as part of the Health Sector Strategic Plan to improve in health-care service delivery policy-makers have sought to understand patient and institution characteristics that determine satisfaction with care, waiting time has been used as an index used to assess patients' satisfaction and the effectiveness of a healthcare facility in providing healthcare to healthcare consumers, long waiting time has been found to be a major dissatisfaction and adversely affect the patient compliance with treatment regimens and clinical outcomes as it has been often reported in major hospitals (Nabbuye et al., 2013).

In Uganda, the provision of quality health care is one of the top priorities at policy and program level (MOH, 2015).Due to the introduction of 5S continuous quality improvement approach in Uganda by MoH, the average waiting time for OPD consultation slightly improved from 133 minutes in 2013 to 127 minutes in 2015, however this figure is still more than that recommended by IOM (Take, et al., 2015).

At BMC, the average waiting time is 45 minutes which is still more than that recommended by the institute of medicine, If this continued, patient satisfaction with the services and compliance to treatment regimens would be strongly affected which may put the lives of the people in the study area in danger, hence the need to determine factors associated with patients' waiting time among health workers at Bushenyi Medical Center in Kabwohe Sheema District

### **Specific Objectives**

1. To find out socio-demographic factors associated with patients' waiting time among health workers at Bushenyi Medical Center in Kabwohe Sheema District

2. To find out the health worker related factors associated with patients' waiting time among health workers at Bushenyi Medical Center in Kabwohe Sheema District.
3. To assess the institutional factors associated with patients' waiting time among health workers at Bushenyi Medical Center in Kabwohe Sheema District

### **Literature Review**

The commonly identified causes for patients' long waiting time for health care services include inadequate staffing, limited resources, high demand due to seasonal illnesses, and unnecessary visits to medical facilities and strategies to reduce wait time and improve satisfaction with care have included the revamping of scheduling systems and better workforce management (Xie & Or, 2017).

A study carried out in Singapore revealed that health workers who were highly paid had a shorter waiting time compared to their counterparts who were less motivated by their low pay (Bredhu, 2016). A study carried out to assess waiting time for Patients, in outpatient clinics at John Hopkins university hospital, shown that Average waiting time for patients was higher among undergraduate health workers who did not attend CMEs compared to those with specialties (Rovlenne, 2018).

Patients' perceived causes for long waiting time in decreasing order were large number of patients with few doctors to attend to them 108 (28%), patients jumping queue 82 (21%), doctors taking too long to attend to a patient 70 (18%), doctors arriving late to duty 62 (16%) while 14 (4%) of them attributed the long waiting time to the long search for patients' cards (Nguyen, et al., 2020)

The capacity of the system of health facilities to attend to patients rapidly without waste of times they progress through the stages of receiving care is referred to as patient flow. In the situation here the flow is obstructed, it can result in waiting time being increased and can result in negative effect on the standards of delivery of healthcare services (Rovlenne, 2018).

In South Africa, quality of leadership was shown to have a pervasive influence on overall system performance by linking to numerous factors and feedback loops, including staff motivation and capacity building. Staff motivation was linked to quality of care in turn influencing patient attendance and feeding back into staff motivation through its impact on workload. (Lembani, et al., 2018)

A cross-sectional study conducted in a community hospital located in Shanghai, China revealed that the simulation results suggested that waiting time for outpatients could be greatly reduced through the introduction of appointment system and flexible demand-orientated doctor scheduling according to the numbers of patients waiting at different time of the workday (Chen et al, 2017)

Long waiting time and stay of patients in emergency units is the result of inefficiency of the workflow process in three steps of patient's arrival at the emergency unit, provision of services, and patient's discharge (Hemmati1, et al., 2019).

### **Methodology**

In this study we used a cross sectional descriptive quantitative study design. The design was preferred because results were presented in numbers and percentage form, data collected were presented as collected from the field, and data were also collected at one point at a time.

The study was carried out at Bushenyi Medical Centre Kabwohe in Sheema municipality Sheema district. Bushenyi Medical Centre is located in Kabwohe town along Mbarara kasese road 36.5Km from Mbarara, in Kagango Division, SHEEMA municipality, SHEEMA district. The hospital has GOPD, medical, surgical, pediatric and child health, obstetrics and gynecological clinics. It has a bed capacity of about 40 beds. This area has been chosen as a study area because the problem (long waiting time) is existing, and no such studies have been done in this are

The study population included all Health workers at Bushenyi Medical Centre during the two weeks period of study. Health workers were chosen as a study population in this research because they had a basic knowledge and understanding of the problem.

The hospital had 54 health workers according to the Human resource manager. A total of 48 respondents was recruited in the study for the period of one month.

The questionnaire that captured demographic variations among health workers, their previous encounters with other health services and the quality of services given at the assessment center was used.

**Results**

**Table 1: Socio-demographic characteristics of the respondents**

Variable	Category	Frequency (n=48)	Percentage
Age	18-30 years	20	41.7
	31-40 years	17	35.4
	above 40 years	11	22.9
Gender	Male	26	54.2
	Female	22	45.8
Tribe	Banyankole	34	70.8
	Baganda	5	10.4
	Bakiga	4	8.3
	Others	5	10.4
Religion	Muslim	6	12.5
	Catholic	16	33.3
	Anglican	22	45.8
	Others	4	8.3
Marital status	Single	14	29.2

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	Married/cohabiting	31	64.6
	Divorced	3	6.3
Income level	50000-150,000 ugx	15	31.3
	150,001-500000 ugx	12	25.0
	Above 500000 ugx	21	43.8

Source: Primary Data, 2024

It was found that majority 20(41.7%) of the respondents were aged 18-30 years while only 11(22.9%) of the respondents were aged above 40 years. More than a half 26(54.2%) of the respondents were males whereas 22(45.8%) of the respondents were females. In addition to that, it was found that more than a half 34(70.8%) of the respondents were Banyankole while only 4(8.3%) of the respondents were Bakiga. It was also found that majority 22(45.8%) of the respondents were Anglicans whereas only 4(8.3%) of the respondents belonged to other religions like Seventh Day Adventist. More to that, It was found that more than a half 31(64.6%) of the respondents were married or co-habiting whereas only 3(6.3%) were divorced. Furthermore, results of the study revealed that majority 21(43.8%) of the respondents were earning above 500000 ugx whereas 12(25.0%) of the respondents were earning 150,001-500000 ugx

Table 2: Socio-demographic factors with standard waiting time

Variable	Category	Waiting time		Odds ratio	95%CI		P-value
		≤ 30 minutes	>30 minutes		Lower	Upper	
Age	18-30	8	12	1.167	.255	5.333	.842
	31-40	9	8	1.969	.416	9.317	.393
	above 40 years	4	7	1.000	.	.	.
Sex	Male	9	17	.441	.138	1.414	.169
	Female	12	10	1.000	.	.	.
Tribe	Banyankole	13	21	.413	.061	2.810	.366
	Baganda	2	3	.444	.035	5.581	.530
	Bakiga	3	1	2.000	.112	35.807	.638
	Others	3	2	1.000	.	.	.
Religion	Muslim	4	2	2.000	.150	26.734	.600
	Catholic	11	5	2.200	.237	20.396	.488
	Anglican	4	18	.222	.024	2.086	.188
	Others	2	2	1.000	.	.	.

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Marital status	Single	5	9	.	.	.	.
	Married/cohabiting	16	15	.	.	.	.
	Divorced	0	3	1.000	.	.	.
Income per month	50000-150,000 ugx	10	5	5.000	1.195	20.922	.028
	150,001-500000 ugx	5	7	1.786	.403	7.906	.445
	Above 500000 ugx	6	15	1.000	.	.	.

**Source: Primary Data, 2024**

The analysis of the relationship between socio-demographic characteristics and waiting time shows that age did not significantly influence the likelihood of waiting for thirty minutes or less. Respondents aged between 18 and 30 years had slightly higher odds of waiting less compared to those above 40 years, with an odds ratio of 1.167, but this result was not statistically significant given the wide confidence interval ranging from 0.255 to 5.333 and a p-value of 0.842. Similarly, those aged 31 to 40 years had almost twice the odds of shorter waiting time compared to those above 40 years, yet the confidence interval was too broad and the p-value of 0.393 confirmed a lack of significance. These findings suggest that waiting time was generally similar across all age groups, with no strong evidence of variation.

In terms of sex, males were less likely to wait thirty minutes or less compared to females, with an odds ratio of 0.441. This result suggested a possible gender difference, but the confidence interval of 0.138 to 1.414 included the value of one, and the p-value of 0.169 indicated that the difference was not statistically significant. Thus, while females appeared to experience shorter waiting times, the difference could not be reliably confirmed as meaningful.

The findings also indicated that ethnicity or tribal affiliation did not have a significant influence on waiting time. For example, the Banyankole had an odds ratio of 0.413, suggesting lower odds of short waiting time compared to the reference group, but this was not significant with a confidence interval of 0.061 to 2.810 and a p-value of 0.366. Baganda had similarly lower odds, while the Bakiga had higher odds of shorter waiting time with an odds ratio of 2.000, though this result was not significant and was accompanied by an extremely wide confidence interval stretching from 0.112 to 35.807. These results point to a lack of meaningful association between tribe and waiting time, most likely due to small sample sizes within each subgroup.

Religion also did not emerge as a significant predictor of waiting time. Muslims had higher odds of shorter waiting time compared to the reference group, with an odds ratio of 2.000, while Catholics had odds of 2.200. However, both estimates had wide confidence intervals, and their p-values were well above 0.05, indicating non-significance. Anglicans had lower odds of short waiting times, with an odds ratio of 0.222, but this result was likewise not statistically significant. Collectively, these results suggest that religious affiliation did not play a role in determining waiting times.

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Variable	Category	Waiting time		Percentage(>30 minutes)
		≤ 30 minutes	>30 minutes	
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Position of the health worker	Nurse	6	13	48.1
	Clinical officer	2	3	11.1
	Midwife	7	4	14.8
	Medical officer	3	2	7.4
	Laboratory personnel	2	4	14.8
	Radiographer	1	1	3.7
Systematic and sequential work flow	Yes	14	22	81.5
	No	7	5	18.5
Number of patients attended to per day	<10	5	3	11.1
	10-20	9	3	11.1
	20-40	4	11	40.7
	>40	3	10	37.0
Whether patients you on appointment	Yes	5	7	25.9
	No	16	20	74.1
Number of patients in the queue waiting for services	5-10	2	4	14.8
	11-20	6	18	66.7
	21-40	4	4	14.8
	>40	9	1	3.7
Hearing about standard waiting time	Yes	9	7	25.9
	No	12	20	74.1
Time spent by patients in clinical room	<5 minutes	8	7	25.9
	5-19 minutes	7	4	14.8
	20-30 minutes	2	9	33.3
	31-60 minutes	3	5	18.5

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	>60 minutes	1	2	7.4
Worsening of patient’s condition while waiting	Yes	10	7	25.9
	No	11	20	74.1

With regard to marital status, the model did not generate meaningful odds ratios for single or married respondents, possibly because of data limitations such as zero counts in some categories. As a result, it is not possible to draw valid conclusions about the influence of marital status on waiting time from these results.

The most notable findings emerged from the analysis of income levels. Income was the only variable that showed a statistically significant association with waiting time. Respondents earning between 50,000 and 150,000 UGX per month were five times more likely to wait thirty minutes or less compared to those earning above 500,000 UGX, with an odds ratio of 5.000, a confidence interval of 1.195 to 20.922, and a statistically significant p-value of 0.028. On the other hand, those earning between 150,001 and 500,000 UGX had higher odds of shorter waiting time compared to the highest income group, but the result was not statistically significant, with a p-value of 0.445. These findings highlight that income level was an important predictor of waiting time, suggesting that lower-income individuals were more likely to experience shorter waiting periods than their wealthier counterparts. This outcome may reflect differences in how services are accessed, the types of services sought, or utilization patterns across income groups.

The findings on the position of health workers indicate that nurses accounted for the largest proportion of service providers, representing 48.1 percent of those attending to patients. Midwives and laboratory personnel followed, each contributing 14.8 percent, while clinical officers accounted for 11.1 percent. Medical officers and radiographers represented smaller shares, at 7.4 percent and 3.7 percent respectively. This distribution shows that the bulk of patient care was delivered by nurses, which reflects their central role in frontline health service delivery compared to other cadres. With respect to systematic and sequential workflow, a large majority of respondents (81.5 percent) reported that work in their facilities followed a structured and organized process, while only 18.5 percent indicated otherwise. This suggests that most health facilities have adopted systematic approaches to patient management, which are essential for reducing waiting times and enhancing service efficiency.

The number of patients attended to per day varied considerably. About 40.7 percent of health workers reported seeing between 20 and 40 patients daily, while 37 percent handled more than 40 patients each day. Smaller proportions attended to fewer patients, with 11.1 percent reporting less than 10, and another 11.1 percent handling 10 to 20 patients daily. These results show that most health workers, particularly those in high-volume facilities, faced heavy workloads, which could directly influence waiting times and the quality of care provided. The study also revealed that a majority of patients were not seen on

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appointment. About 74.1 percent of respondents reported that patients sought services without prior appointments, compared to only 25.9 percent who said appointments were in place. This indicates that walk-in services dominated the system, a factor that could increase congestion, prolong waiting times, and compromise efficiency in patient flow management.

Regarding the number of patients in the queue at the time of seeking services, two-thirds (66.7 percent) reported between 11 and 20 patients waiting, while 14.8 percent reported 5 to 10 patients and another 14.8 percent reported between 21 and 40 patients. Only 3.7 percent indicated queues of more than 40 patients. These findings suggest that most facilities experienced moderate patient loads in their waiting areas, though still sufficient to generate waiting periods that may influence patient satisfaction and outcomes. Awareness of standard waiting time appeared limited, as 74.1 percent of respondents reported never hearing about standard waiting times, while only 25.9 percent were aware of them. This reflects gaps in information sharing and training regarding service delivery benchmarks that could guide health workers in managing patient expectations and improving efficiency.

The amount of time patients spent in the clinical room also varied. About one-third (33.3 percent) spent between 20 and 30 minutes, while 25.9 percent reported less than 5 minutes. Another 18.5 percent stayed between 31 and 60 minutes, 14.8 percent between 5 and 19 minutes, and 7.4 percent more than an hour. These results show significant variation in consultation times, which may reflect differences in case complexity, the type of service sought, or workload pressures on health workers. The study examined whether patients' conditions worsened while waiting. About 25.9 percent of respondents indicated that patients' health conditions deteriorated during the waiting period, while the majority (74.1 percent) reported no worsening. Although most patients did not experience negative effects, the finding that a quarter suffered worsening conditions highlights the importance of reducing waiting times and improving prioritization systems in health facilities.

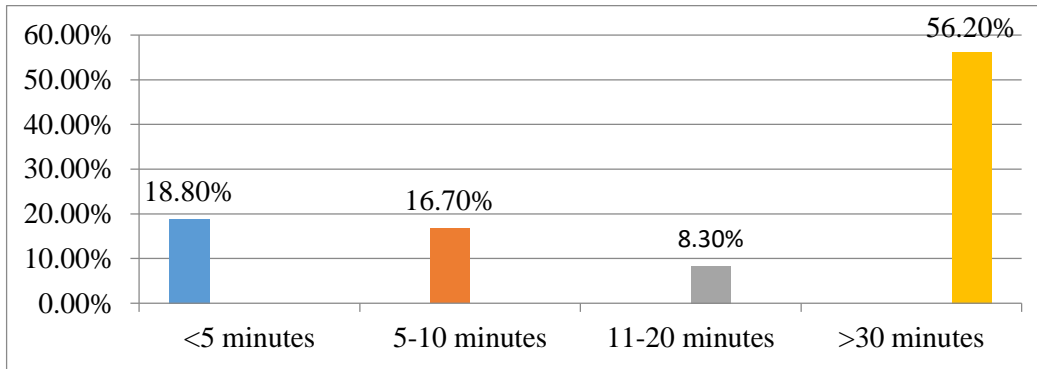
#### **Recommended Waiting Time Vs Health Worker Related Factors**

It was found that nearly a half who had waiting time more than 30 minutes 13(48.1%) were nurses whereas radiographers had the least number of patients waiting for more than 30 minutes 1(3.7%). More than a half 22(81.5%) had a systematic work flow but still waited above 30 minutes and only 5(18.5%) did not have a sequential work flow and had waiting time above 30 minutes. Majority 10(37.0) attended on more than 40 patients per day whereas only 3(11.1%) attended on less than 10 patients and had waiting time above 30 minutes. Most health workers who had waiting time above 30 minutes 20( 74.1%) did not meet patients on appointment whereas only 7(25.9%)met patients on appointment. More than a half of the health workers who had waiting time more than 30 minutes 18(66.7%) always had 11-20 patients waiting for their services in a queue while only 1(3.7%) had more than 40 patients in the queue. Majority of the health workers who had waiting time more than 30 minutes had never had about standard waiting time 20(74.1%) whereas only 7(25.9%) knew about standard waiting time. Majority of health workers 9(33.3%) spent 20-30 minutes with patients in the clinical room whereas 2(7.4%) spent more

than 60 minutes with patients in clinical room. Majority 20(74.1%) had never had patient’s condition worsening while waiting and only 7(25.9%) had ever had patient’s condition worsening while waiting

**PATIENTS’ WAITING TIME**

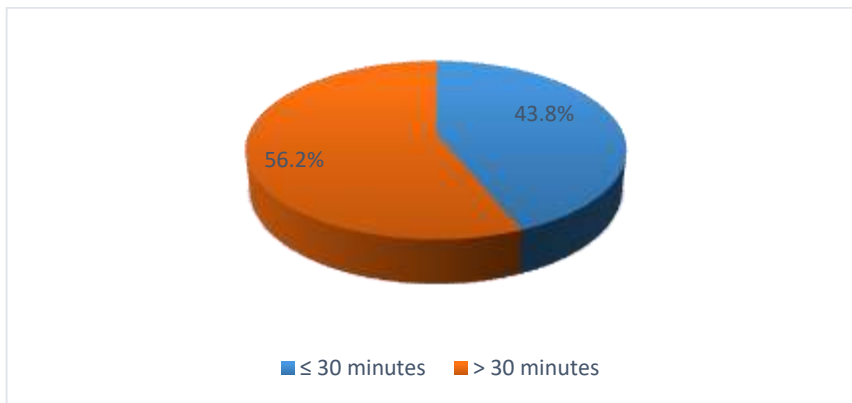
n=48



**Figure 1: Distribution of patients’ waiting time**

more than a half 27(56.2%) of the respondents mentioned that patients wait for more than 30 minutes whereas only 4(8.3%) of the respondents mentioned that patients wait for 11-20 minutes to be worked on.

**RECOMMENDED STANDARD VERSUS LONG PATIENTS’ WAITING TIME**



**Figure 2: Distribution of recommended standard versus long patients’ waiting time**

Generally, it was revealed that more than a half 27(56.2%) of the respondents reported minutes patients’ waiting time above 30 whereas 21(43.8%) of the respondents reported patients’ waiting time with the first 30 minutes.

**Table 3: Institutional Related Factors**

Variable	Category	Waiting time		Percentages(%)(>30minutes)
		≤ 30 minutes	>30 minutes	
Provision of enough materials to handle patients	Yes	10	11	40.7
	No	11	16	59.3
Interval of supervision	Daily	14	2	7.4
	Weekly	5	6	22.2
	Monthly	2	19	70.4
Who directs patients to your station	Poster	5	7	25.9
	Patient guide	10	12	44.4
	Others	6	8	29.6
Number of workmates at the station	Zero	11	10	37.0
	One	8	8	29.6
	Two	1	8	29.6
	Three	1	1	3.7

**Source: Primary Data, 2024**

Respondents who reported availability of enough materials were more likely to experience shorter waiting periods, with 40.7 percent of them waiting more than 30 minutes. On the other hand, those who lacked adequate materials faced longer delays, with 59.3 percent waiting more than 30 minutes. This suggests that shortages of essential supplies hinder efficiency in service delivery and contribute to prolonged waiting times. Supervision also emerged as a critical factor in determining waiting experiences. Respondents who reported daily supervision had the least waiting times, with only 7.4 percent waiting for more than 30 minutes. In contrast, those under weekly supervision had 22.2 percent waiting beyond 30 minutes, while those under monthly supervision recorded the highest waiting times, with 70.4 percent waiting more than half an hour. These findings demonstrate that closer and more frequent supervision helps in maintaining discipline, accountability, and systematic service flow, thereby reducing delays.

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The mode of directing patients to service points was another factor influencing waiting time. Where posters were used for guidance, 25.9 percent of patients waited more than 30 minutes. Facilities that relied on patient guides had longer waiting experiences, with 44.4 percent waiting beyond 30 minutes. In cases where “others” such as verbal directions or improvised systems were used, 29.6 percent waited longer. This implies that the efficiency of directing systems can determine how quickly patients reach service points, with reliance on patient guides possibly reflecting resource constraints that prolong queues. The number of workmates at the station also influenced waiting time. Stations where workers operated alone reported 37.0 percent of respondents waiting more than 30 minutes. When there was one colleague, 29.6 percent experienced longer waits, while stations with two workmates had an equally high proportion of 29.6 percent waiting beyond 30 minutes. Where there were three workmates, the proportion dropped to 3.7 percent. These results indicate that staffing levels affect service efficiency, with more colleagues at a station enabling faster service delivery and reduced waiting times.

### **Conclusion**

Basing on the findings of the study, we concluded that the socio-demographic factor associated with patients was the income level of the health workers.

The health worker related factors associated patients’ waiting time were number of patients attended to per day and the number of patients in the queue waiting for services.

Also, the institutional related factor associated with patients waiting among health workers at BMC was the provision of enough materials.

### **Recommendations**

According to the study findings, we therefore recommend that the management of BMC should provide the facility with enough materials and more health workers to match the number of patients received.

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