(RESEARCH ARTICLE)

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Missed appointment at specialist outpatient clinics: The Federal Medical Centre Bida, Northern Nigeria experience

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Abstract

Background/Objective: Thousands of patients miss their appointments every year in all kind of practices including specialists' cares. Timely access at scheduled clinic appointment is important for achieving good medical outcomes to smoothen workflow, reduce crowding and waiting period, and often determines patient's satisfaction. However, the after effect of missed appointment include; disruption of daily work planning of both physicians and administrative staff, interfered with adequate medical care, time lost and decreased efficiency on the part of physicians and as well as prolonged waiting time at the clinic. This study aims to determine the rate of missed appointments, reasons for missing appointments, the predisposing factors and aftereffect of missed appointments at specialist outpatient clinics of the hospital.

Methods/Design: This was a cross-sectional study carried out at the consultative outpatient clinics of FMC Bida. Out of 38,837 patients' population, a total of 380 patients were systematically co-opted into the study using a stratified sampling technique. A semi structured questionnaire was used to collect data. The questionnaires comprised of questions that assessed the participant's demographic characteristics, rate, reasons and predisposing factors of missed appointment.

Results: out of 380 participants co-opted into the study, 315 responses were obtained. The result showed that the majority of the participants was within the age range of 25-34 (105, 33.3%), mostly female (220, 69.8%) and predominately Nupe dialect. A total of 139(44.1%) participants claimed to have ever missed their appointment. The reasons for the missed are; forgetfulness, lack of money for treatment, lack of money for transport and work commitment respectively. The majority who missed their appointment attend gyne infertility, orthopedic and psychiatric clinics. They are uneducated, artisans and from villages outside Bida town.

Conclusion: since the reasons of missed appointment and predisposing factors have been identified, healthcare professionals and hospital management will need to pay serious attention with regards to the following; reduce waiting time at the clinic, restructure appointment scheduling system, educate patients on appointment, subsidize the cost of treatment for less privileges, apart from emergency patients, provide longer appointment for patients to reduce their cost of transportation.

Keywords: Appointment; Clinics; Health Records; Waiting Time; Schedule; Nigeria

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1. Introduction

In this fast driven society, where the current climate in the healthcare sector demands efficiency and patients' satisfaction in medical care delivery [1]. Timely access at scheduled clinic appointment is important for achieving good medical outcomes, to smoothen workflow, to reduce crowding and waiting periods, [2,3] and often it determines patient's satisfaction [2]. It is also an important tool for managing clinic workload, initiating patient's tracking and ensure quality improvement.[4] Nonattendance at specialist clinics has received increasing attention in various healthcare institutions and its relationship with access to healthcare has been recognized [2]. Failure to keep scheduled clinic appointments (missed appointments, no-shows, non-attendance) is a common problem in hospital settings. Thousands of patients miss their appointments every year in all kind of practices including specialists' cares [2]. Those patients may be considered as a vulnerable group with multiple health problems and difficult lives, at one end of the spectrum and at the other hand, they may be regarded as nuisances who repeatedly fail to keep appointments which could have been used more gainfully for people in greater need [5]. Missed appointment is reported to be more common among young adults and adults with young children [6].

Prevalence of missed appointments ranges from 5 to 55% and varies between countries, healthcare systems and clinical settings [7]. In the United Kingdom (UK) missed appointments at General Medical Practices (GMP) have a prevalence of 4.5–6.5% of booked appointment [8] while the rate was between 6.5-55% in the United States [9]. More recently, studies [9,10] have reported high no-show rates ranging from 23% to 34% in outpatient clinics. Hospitals and Clinics in low socioeconomic populations have shown non-attendance rates as high as 30% while family practice clinics show as low as 5% [6]. For instance, studies from Guateng Hospital [11] and Tygerberg Hospital [12] in Cape town, South Africa had 35% and 17% rates of missed appointments respectively while studies from Ilorin [13] and Abeokuta [14] Nigeria had 38% and 20% missed appointments respectively. One study from Africa examined post-discharge treatment adherence among 387 patients at a Nigerian psychiatric unit and found that 46% had defaulted by 3 months [15].

Reasons and factors influencing default from clinic appointments had been reviewed extensively among adults and Caucasians attending different specialty clinics. Reasons given for this included forgetting the appointments, being busy, unclear appointment details, non-satisfaction with caregivers approach, and feeling of wellness [16]. Others include the state of being too ill to attend, work commitments, difficulty with transportation, wide interval between time of booking and the next appointment [9, 17-18]. In low-income countries such as Nigeria, structural barriers, including poverty, poor infrastructure and the absence of formal social welfare services and trained staff, limit the applicability of adherence strategies used in high-income countries [15]. The findings from a study [16] showed that the majority of children who missed their appointment had uneducated parents, they are rural dwellers and from unemployed mothers. Also study [19] showed that younger age and male gender have been associated with missed appointments. Unemployment [Adeponle, 2007; Kruse, 2002; Mitchell, 2007] and low socioeconomic status have been reported as correlates of missed appointments in the USA, Italy, and Spain [Reneses, 2009; Morlino, 1995]. This is similar to local reports from studies in Nigeria [Adeponle, 2007; Adelekan, 1990] [19].

 The numbers of missed appointments, unnecessary waste of patient's appointment time have caused an impending problem, [1] which have serious clinical and economic consequences [2] for healthcare institutions (Chua, 2010) [1]. The after effect of missed appointment include; disruption of daily work planning of both physicians and administrative staff [8,20], interference with adequate medical care [21], time lost and decreased efficiency on the part of physicians [18] and prolonged waiting time [7]. Meanwhile, longer waiting time has been shown to be related to lower satisfaction, which, in turn, leads to less reliable appointment keeping [22].In psychiatric hospitals for example, the default is associated with considerable financial and health costs. These include increased risk of illness exacerbation and relapse, re-hospitalization, increased potential for assault and other dangerous behaviours, as well as self-harm (Killaspy, Banerjee, King, & Lloyd, 2000; Knapp, King, Pugner, & Lapuert, 2004; Nelson, Maruish, & Axler, 2000; Weiden and Olfson, 1995; Zygmunt, Olfson, Boyer, & Mechanic, 2002) [15].

1.1. Aim and Objectives of the study

There have been informal reports of missed appointments and observed deliberate non-adherence to standard appointment systems at Federal Medical Centre, Bida. Therefore, this study aims to determine the level of missed appointments at specialist outpatient clinics of the hospital. The objectives of the study are:

- To determine the rate of missed appointment.
- To determine the reasons for missing appointments.
- To determine the predisposing factors to missed appointment

One of the previous studies in Nigeria has examined missed appointment among psychiatric patients, but this study focused on other consultative outpatients to determine the rate, reasons and predisposing factors of missed appointment in those clinics. The justification for the study is borne out of the need to reduce overcrowding, reduce waiting time, and improve work flow and overall improvement in the quality of healthcare services and patients satisfaction. It is anticipated that the findings from this study will be beneficial to the patients, healthcare practitioners, researchers and the hospital management. It will inform a better way to manage the patients' time for effective services, the healthcare professionals will have a better workflow and the findings from the study will serve as reference materials for researchers and for hospital management, it will be a means for appropriate healthcare planning and decision making.

2. Material and methods

2.1. Background to the study area

This study was carried out at Federal Medical Center Bida (FMCB).FMCB is a 200-bed hospital located in the Efu-Etsu Yisa ward of Bida LGA and it was established on the 3rd of April, 1997 from the defunct Colonial/General Hospital. It is the largest tertiary hospital in Niger State Nigeria that provides primary, secondary and tertiary healthcare services to people in Bida, Niger State, and environs. The consultative outpatient clinics of the hospital comprised of medical, surgical, pediatric and Obstetrics and Gynecology. These are made up of a total of 20 clinics including: General medical, diabetic, hypertension, neurology, skin, general surgical, orthopedic, urology, ENT, antenatal, postnatal, gyne-emergency, gyne & infertility, hematology, pediatrics, pediatric surgery, psychiatric, dots, dental and ophthalmology clinic.

2.2. Study design and setting

This was a cross-sectional study carried out within a minimum period of 3 months at consultative outpatient clinics FMC Bida.

2.3. Study population

As available in Health Records/Information Department of the hospital, total clinic attendance for 18 selected clinics was 38,437 (identified study population) in 2016. These include: general medical 769, diabetics 2561, hypertension 3292, neurology 550, skin 1290, general surgical 1883, orthopedic 1621, urology 2283, ENT 1429, antenatal 11312, postnatal 900, gyne infert. 1769, hematology 416, pediatrics 2360, pediatric surgery 817, psychiatric 1435, dots 155, ophthalmology 3595.

2.4. Data collection tool

A semi structured questionnaire was used to collect data from the study participants. The questionnaire consisted of two main sections with 15 item responses selected from a drop-down list menu. The first section consisted of the independent variables, which are the socio-demographic information of the respondents. The second section was divided into four parts. Part one of the section discussed the rate of missed appointment; part two discussed the reasons for missed appointment; part three discussed the predisposing factors of missed appointment. Essentially, the questionnaire asked if participants have ever missed their appointment, how many times they have missed; reasons for the missed and predisposing factors of missed appointment. The questionnaire was designed in English Language and was administered by the researcher and research assistants who helped in interpreting the questions into the available local languages such as Nupe, Hausa and Yoruba. Out of 380 questionnaires distributed, 315 were retrieved back given a return rate of 82.9%.

2.5. Sampling technique and sample size

A stratified random sampling technique was used to select the sample. To select the participants for the study, a simple random sampling technique was employed with the aid of balloting. Included in the selection were general medical 8, diabetics 25, hypertension 33, neurology 5, skin 13, general surgical 19, orthopedic 16, urology 23, ENT 14, antenatal 112, postnatal 9, gyne infertility 17, hematology 4, pediatrics 23, pediatric surgery 8, psychiatric 14, dots 2 and ophthalmology 36. Online sample size calculation software (www.surveysystem.com) was used to compute the sample size with the following formula:

$$SS = \frac{Z2 \times (P) \times (1 - P)}{C^2}$$

Where,   Z= z-value (e.g. 1.96 for 95% confidence level).
          P= percentage picking a choice, expressed as decimal   (.5 used for sample size needed).
            c = confidence interval expressed in decimal (0.05)

2.6. Inclusion Criteria

Apart from patients who have the ability to take care of themselves, Patients under the age of 15 and over the age of 64 were also included in the study. Though every decision about their clinics attendance was made by their guardians and so their guardians were the one who answered for them during the exercise.

2.7. Exclusion Criteria

- Gyne emergency and dental clinics were excluded from the study because appointment system is not in operation in those clinics.
- Patients who had less than 3 months appointment history were not included in the study, because the researcher was of the opinion that patients who have attended his/her clinics for up to 3 months or more would have possibly had one or more episode of non-attendance.

2.8. Data analysis and management

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 16.The baseline characteristics of the respondents were analyzed in a spreadsheet using a simple proportion of respondents. A chi-square test was done to explore associations between demographic characteristics and rate of missed appointment. It was used to determine associations of the dependent variable (rate of missed appointment) with the independent variables (reasons for missed appointment). All levels of significance were set at $p < 0.05$.

2.9. Ethics considerations

Ethics approval was given by the Hospital Research Ethics Committee. In addition, informed consent was obtained from the patients who participated in the study. Strict anonymity was ensured.

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3. Results

3.1. Response rate

A total of 315 questionnaires were returned out of 380 distributed, giving an overall response rate of 82.9%

Table 1 Participants socio-demographic characteristics.

Socio-demographic Variables		Frequency N	Percentage %
Age	25-34	105	33.3
	35-44	57	18.1
	15-24	41	13.0
	45-54	33	10.5
	55-64	32	10.2
	65 and above	30	9.5
	NR	17	5.4
Sex	Male	95	30.2
	Female	220	69.8
Education Level	None	59	18.7
	Primary	33	10.5
	Secondary	74	23.5
	Tertiary	138	43.8

|	NR	11	3.5
Occupation	Civil Servant	87	27.6
	Housewife	67	21.3
	Trading	71	22.5
	Student	43	13.7
	Farming	15	4.8
	Others	32	10.1
Place of Residence	Bida	206	65.4
	Other LG around Bida	50	15.9
	Other LG within Niger	44	14.0
	Outside Niger State	12	3.8
	NR	3	1.0
Clinic Attending	Antenatal	93	29.5
	Ophthalmology	36	11.4
	Cardiology	34	10.8
	Nephrology	24	7.6
	Urology	23	7.3
	Paediatric	20	6.3
	General Surgery	14	4.4
	ENT	14	4.4
	Others	57	18.1
Cost of Transportation	≤ 50-200	210	66.7
	201-500	30	9.5
	501-2000	34	10.8
	≥2000	25	7.9
	NR	16	5.1

Table 1 indicates that the majority of the participants was within the age range of 25-34 (105, 33.3%), mostly female (220, 69.8%) and had up to tertiary level of education. Most of them were civil servant, traders and housewife with a proportion of 27.6, 22.5 and 21.3% respectively. Majority of the participants attended antenatal clinic and they lived within Bida, though there were also reasonable numbers who lived in other local government outside Bida and even outside Niger State.
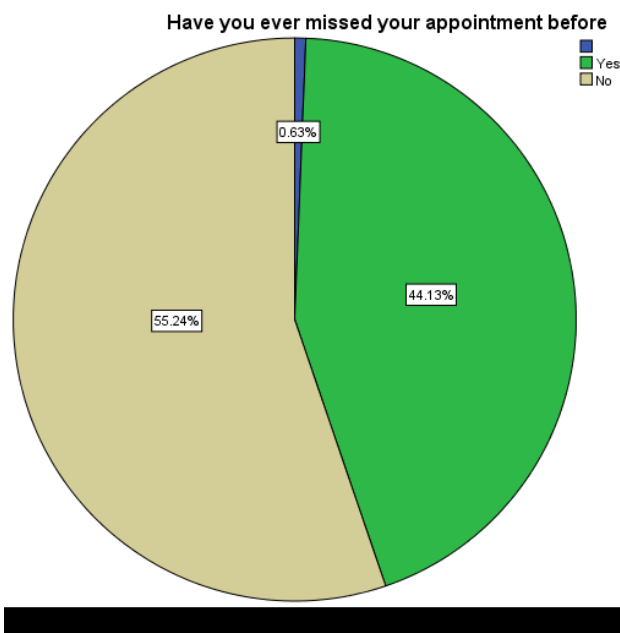
Figure 1 Response to missed appointment

The cost of their transportation ranges from ₦50 to over ₦2,000 depending on their place of residence. Based on the researcher's experience, the study participants were predominantly Nupe Dialect, though there were reasonable number of other recognized dialects such as Yoruba, Hausa and Igbo who attended the various clinics of the hospital.

Figure 1Showed that only 139(44.1%) of the participants claimed to have ever missed their appointment and as shown in Figure 2, showed that majority of them has only missed between one to four times since they had been attending clinics.
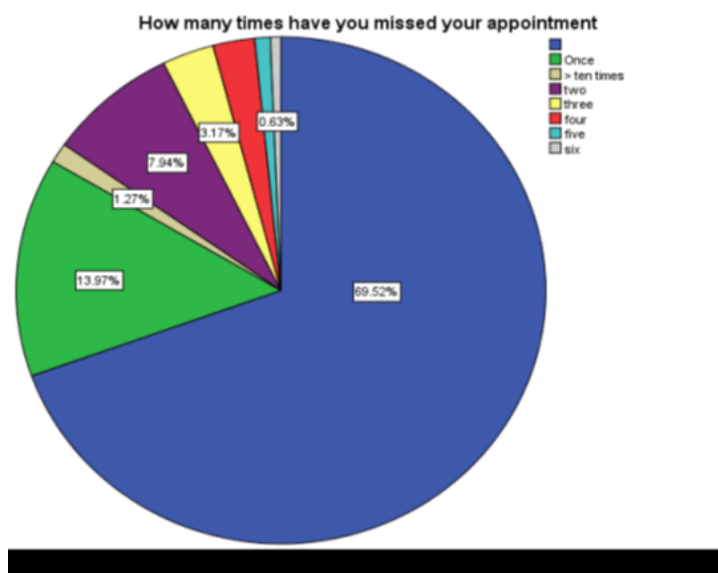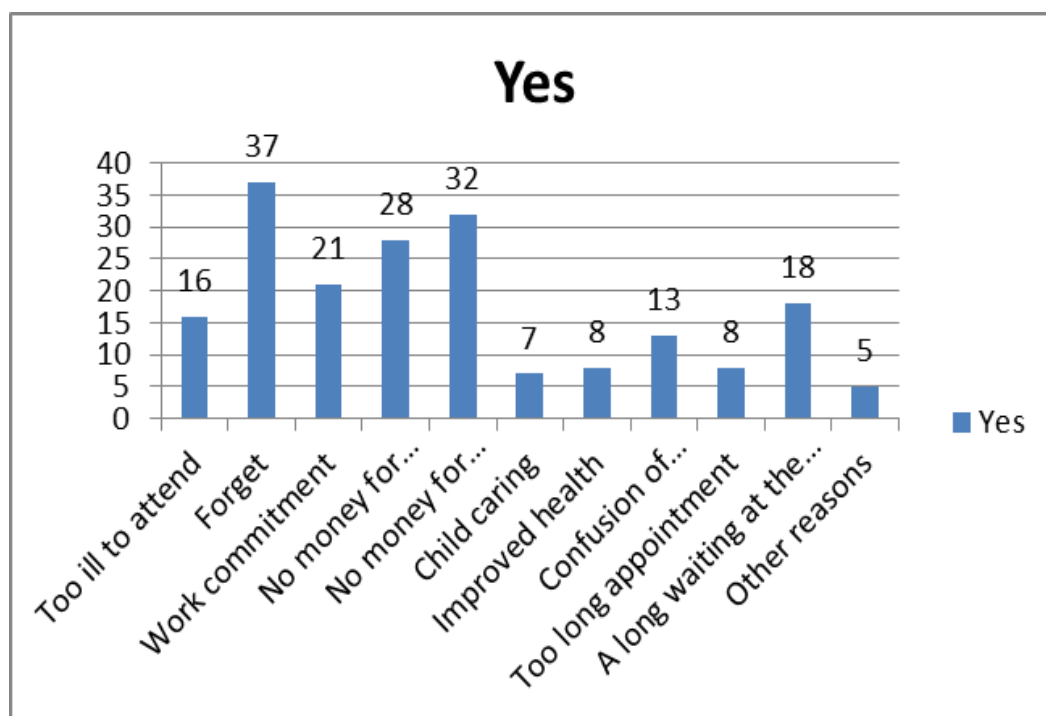

Figure 2 Rate of Missed Appointment
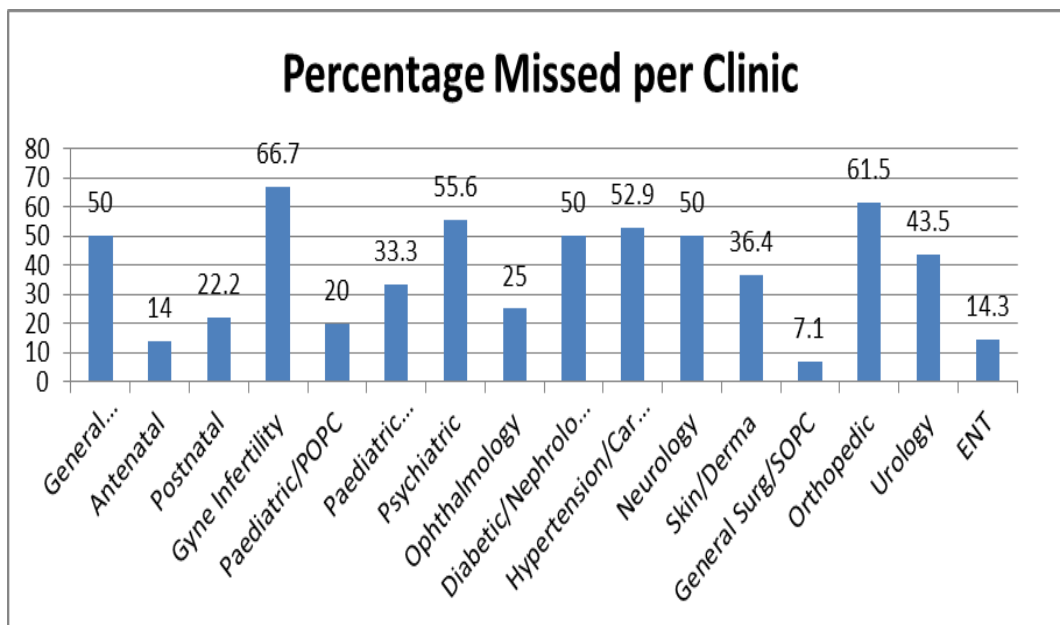
Figure 3 Rate of missed appointment per clinic

Figure 3 Showed that the highest rate of missed was recorded in gyne infertility, orthopedic, psychiatric and cardiology clinics respectively.

Figure 4 Participants' reasons for missing appointment

Figure 4 Showed that majority of those who missed their appointment did so as a result of forgetfulness, lack of money for treatment, lack of money for transport, work commitment and a long waiting time at clinics respectively.

Table 2 Associations between demographic characteristics and rate of missed appointment.

Demographic Characteristics	Number of Missed Appointment			α^2	P-value	df	φc
	Yes	No	% of Missed				
Educational Level				50.658	0.005	28	0.201
None	27	32	45.8				
Primary	9	24	27.3				
Secondary	14	60	18.9				
Tertiary	40	98	29.0				
Occupation				74.578	0.151	63	0.184
Civil Servant	22	65	25.3				
Farming	4	11	26.7				
Trading	25	46	35.2				
Housewife	17	50	25.4				
Student	14	30	31.8				
Artisan	2	1	66.7				
Retired	5	5	50				
Applicant	1	2	33.3				
Clergy	1	0	100				
Place of Residence				70.085	0.000	28	0.236
Bida	67	139	32.5				
Other LG around Bida	9	41	18.0				
Other LG within Niger	16	28	36.4				
Outside Niger	2	10	16.7				
Clinic Attendance				156.113	0.001	105	0.266
General medicine/MOPC	2	2	50				
Antenatal	13	80	14				
Postnatal	2	7	22.2				
Gyne Infertility	4	2	66.7				
Paediatric/POPC	4	16	20				
Paediatric Surg/PSOPC	1	2	33.3				
Psychiatric	5	4	55.6				
Ophthalmology	9	27	25				
Diabetic/Nephrology	12	12	50				
Hypertension/Cardio	18	16	52.9				
Neurology	1	1	50				
Skin/Derma	4	7	36.4				
General Surg/SOPC	1	13	7.1				
Orthopedic	8	5	61.5				
Urology	10	13	43.5				
ENT	2	12	14.3				

Legend:α2 = Chi Squaredf = degree of freedomφc = Crammer's V

Table 2 showed association between demographic characteristics and missed appointment. As shown in the table, majority of participants who missed their appointment were those with no formal education, they were artisans, retiree and traders respectively. The highest proportion of them was from other local government within Niger State. The chi square test to determine the associations was set at 0.05 level of significance and Crammer's V was calculated to determine the degree of associations between variables. The null hypotheses H0 state no associations between the variables. Since the p value 0.005 was less than level of significance, the null hypothesis was rejected and so there was an association between level of education and rate of missed appointment, though based on the crammer's V value, the association was weak. The result also showed that there was no association between occupation and rate of missed appointment since the p value 0.151 is greater than the level of significance. It was also revealed from the findings that there was association between place of residence and rate of missed appointment, since p value 0.000 was less than significance level. Lastly the result showed that there was reasonable association between clinics attended and the rate of missed appointment.

Table 3a Relationship between missed appointment and long waiting time at the clinic

Chi square test result

	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	19.606a	2	0.000
Likelihood Ratio	22.405	2	0.000
N of Valid Cases	315		

3.1.1. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .11.

Table 3b Relationship between missed appointment and long waiting time at the clinic

Chi square test result

Symmetric Measures

		Value	**Approx. Sig.**
Nominal by Nominal	Phi	0.249	0.000
	Cramer's V	0.249	0.000
N of Valid Cases		315	

Table 3a showed that there is significant relationship between missed appointment and long waiting time at the clinics since the p value 0.000 is less than the significant level 0.05 a null hypothesis which show no relationship is rejected.

4. Discussion

Failure to keep scheduled clinic appointments (missed appointments, no-shows, non-attendance) is a common problem in hospital settings. Thousands of patients miss their appointments every year in all kind of practices including specialists' cares [1]. Prevalence of missed appointments ranges from 5 to 55% and varies between countries, healthcare systems and clinical settings [9]. Studies from Guateng Hospital [13] and Tygerberg Hospital [14] in Cape Town, South Africa had 35% and 17% rates of missed appointments respectively while Ilorin [15] and Abeokuta [16] Nigeria had 38% and 20% missed appointments respectively. Our study is in agreement with these, as 44.1% of participants missed their appointments.

Studies [7,8,9] reported that the reasons for missed appointments include forgetfulness, illness, work commitments, difficulty with transportation, wide interval between time of booking and the next appointment. Our study is in agreement with these studies as majority of those who missed their appointment did so as a result of forgetfulness, lack of money for treatment, lack of money for transport, work commitment and long waiting time at clinics respectively. Study [16] showed that the majority of children who missed their appointment had uneducated parents, they are rural

dwellers and from unemployed mothers. Similarly study [19] showed that younger age and male gender have been associated with missed appointments. Unemployment and low socioeconomic status have been reported as correlates of missed appointments. Our study is in agreement with these studies as the majority of those who missed their appointment had no formal education; they were artisans, retirees and traders. They were dwellers from villages outside Bida town and within Niger State.

Our study showed that one of the reasons for missed appointment is long waiting time at the clinic and this was established by the chi square test that showed a significant relationship between missed appointment and longer time spent at the clinic. This is in agreement with study [9]which showed that one of the after effects of missed appointment is prolonged waiting time. Meanwhile, longer waiting time has been shown to be related to lower satisfaction, which, in turn, leads to less reliable appointment keeping [19].

5. Conclusion

Majority of the patients who attended consultative outpatient's clinics of Federal Medical Centre Bida missed their appointments in some identified clinics such as gynae infertility, orthopedic, psychiatric and cardiology and the reasons for the missed appointment are forgetfulness, lack of money for transportation and treatment and work commitment, including long waiting at clinics. The patients who missed their appointments most are the uneducated, artisans and the villagers. In view of the above, healthcare professionals and hospital management will need to pay serious attention and take necessary actions with regards to the following; reduce waiting time at the clinic, restructure appointment scheduling system, educate patients on appointment, subsidize the cost of treatment for less privileges and apart from emergency patients, longer appointment should be given patients to reduce their cost of transportation.

Recommendation

- The management of the hospital is encouraged to devise the means of reducing patients waiting time at clinics by engaging more hands to facilitate prompt attention.
- Appointment scheduling system should be restructured so as to favor and encourage everyone.
- The clinicians and other healthcare workers are encouraged to commence their clinic on time so as to prevent unnecessary waiting.
- The clinicians are encouraged to provide longer appointment for patients with no emergency problems so as to reduce patients' transportation expenses.
- More consulting rooms should be provided so as to spread the clinic and reduce the patients waiting time
- The management should devise a means of subsidizing cost of treatment for the less privileges probably through hospital welfare unit.
- The clinicians and other health workers should endeavor to always educate their patients on the importance of appointment if possible at every visit.
- Lastly, the patients are encouraged to always set reminder in order to forestall the issue of forgetfulness.

Limitation

The study was contended with issues surrounding interpretation as majority of the participants are Nupe speaking patients given the area of study (Bida).

Authors' Contributions: OSA conceived of the study, initiated its design, participated in data collection, data analysis and coordination and drafted the manuscript. AIT participated in the design, coordination and reviewed the manuscript. AAO participated in the design, coordination and reviewed the manuscript. AFB participated in the design, coordination and reviewed the final manuscript. ND participated in the design and coordination of protocols. AAA participated in the design, data collection, and coordination and reviewed the final manuscript.

Compliance with ethical standards

Disclosure of conflict of interest

The authors wish to state categorically that there is no competing interest in this study.

Statement of informed consent

Informed consent was obtained from all the patients who participated in the study.

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