PATIENTS ADHERENCE TO HEALTH EDUCATION PRACTICE TOWARDS HEALTHY LIVING IN THREE SELECTED TERTIARY HEALTH FACILITIES IN DELTA STATE, NIGERIA

J.O. Ogbe,
Department of Health and Safety Education, Delta State University, Abraka, Delta State, Nigeria

Abstract
The study assessed patients' response to health education/information in the promotion of their health. The purpose was to determine the level of patient adherence to health education/information, drugs/medication and keeping booked appointment dates. Three research questions and three hypotheses propelled the study. Descriptive and cross sectional designs were used for the study. Three hundred and ninety – two respondents took part in the study. A Likert like rating scale questionnaire was used to gather data. The questionnaire was validated and the reliability was assessed using Cronbach alpha which stood at r = 0.92 and both descriptive and inferential statistics of regression statistics was used to analyse the data at 0.05 alpha. It was found that, all three hypotheses were significant with ANOVA value of F= 52.081, af 3/388 and significant at .001, P<0.05. Adherence to health education has t-value of 3.747 and significant at .001, while adherence to drugs/medication had at value of 2.960 and significant at .003 and keeping booked appointment had t-value of 4.857 and significant at .001. It shows patients adherence to heath education but a lot still need to be done. It was recommended that health education to patients in health facilities was satisfactory and should be sustained. Adherence to drugs/medication and booked appointed dates was also satisfactory and should be sustained and improved upon in health facilities.

Keywords: Health education/information; patient adherence; drugs/medication; booked appointment

Introduction
Booking for next visit is a common practice in hospitals, clinics and Health Centres. At the same time, Medical Record officers are often frustrated with numbers of bookings that are not honoured. Booked patients honouring their appointment means adherence to information that are meant to reduce treatment failure. Health education prepares the mind of the patient to be receptive to information directed toward quick recovery, avoidance of complications and health risk associated with development of drug resistance among others.

There are many definitions to health education, but ordinarily it is the passing of Health information in a professional method for positive change to in behaviour towards health issues. Mackintosh (2010) defined health education as those activities which raise an individual's awareness, giving them health

knowledge required to enable them decide on a particular health action. Another definition that was given by Artem (2021) which stated that health education is a type of education designed for individuals or the public at large to gain the knowledge, skills, value and attitudes necessary to promote, maintain, improve and restore their health or another person's health. However this researcher defines Health education as a teaching-learning process that stimulates the intrinsic motivation to adopt a positive health attitude and behaviour that manifest in extrinsic motivation. This definition attempt to capture the psycho-motor property of Health education and its basic skills quality. Health education is an integral part of health promotion as developing health literacy is one of the basic functions of health education. Health education is to stick to an idea or issue(s) directed at improving once health status or getting out of risk of a disease or injury. WHO (2020) describes adherence as "the extent to which a person's behaviour in taking medication, following a diet and/or executing lifestyle and changes, corresponds with agreed recommendations from a health care provider. This was more specific with the explaination of Jennifer, Kelsy, Jonathan and Frank (2018) that adherence rate of 80% or more are needed for optimal therapeutic efficiency.

Patients' adherence to health education research has become necessary in an era of occurrence and reoccurrence of infectious diseases such as Ebola, Lassa fever, COVID-19 among others. Many infectious diseases would have been avoided or controlled if patients stick to health education and information. Healthy living is having opportunity, capability and motivation to act in a way that positively affects once physical and mental well-being (www.eufic.org). It also means maintaining healthy life style and introducing habits that improve one's health. They include good diet, exercises, rest, sleep, stay-away from excessive alcohol, avoid smoking, visit the hospital regularly for check and keep to hospital routine drug and appointment regime. This study limits its self to patient hospital practice that when religiously followed will promote health. The practices include patient's adherence to health education/information, patient's adherence to drug/medical regime and patient keeping to booked hospital appointments and dates.

An organized patients' treatment in an hospital is made up of; History taking, consultation, laboratory investigation, diagnosis, chemotherapy, Nursing care and Health education or health information. Unfortunately, Health educator's availability is limited in hospitals and non-professional health educators give health information at every stage of every patient's treatment, especially at the point of discharge. Tan (2020) reported that inappropriate use of medicine still prevail in both developing and developed countries and about 50% of the treatment failure are due to poor medication adherence.

Cases of disease relapse, drug resistance, treatment failure, prolong treatment and even death is promoted by patient failure to adhere to health education/information. This study assumes that when patients keep to health

education/information, keep to their drug/medical regime and keep to appointments and dates, patient's health will be better promoted and higher recovery rate and time. Lius-Emillio, Maria, Tatiana, Vicente and Damingo (2013) citing WHO state that "adherence to long-term therapy for chronic illness in developing countries average only about 50%)".

The purpose of this study was to determine the extent to which patients adhere to health education, the extent to which patient maintain their drug regime and the extent to which they keep their appointment and dates, as promotion of their health during this era of COVID-19 and the post COVID-19 era. This study would be significant to health educators in the teaching process towards adherence to health rules and regulation as to promote health of patients. It will also be significant to the health industry as health promotion is a major concern of all stakeholders in health. Patients now and in the future will find the outcome of this study beneficial as to facilitate their recovery.

The study used three research questions and one hypotheses to give the study a direction;

- To what extent do patients adhere to health education among health facilities Attendants in Delta State.
- To what extent do patients adhere to their drug/medication regime among health facilities Attendants in Delta State.
- To what extent do patients keep their booked appointment dates among health facilities attendants in Delta State.

Hypothesis

One summary predictive hypothesis was used to analyse the variables: Patient adherence to health education, adherence to drug/medication and adherence to booked appointment will not significantly predict promote patient healthy living among health facility attendants in Delta State, The study was hinged in the Health Behaviour model. The theory states that an individual adapts to an idea only if the idea will be beneficial. The HBM was postulated by social psychologists Rosenstock, Godfrey and Hochaum, Stephen *et al* in 1950. The HBM attempts to explain and predict health behaviours by focusing on the attitudes and beliefs of individuals (sphs web.bumc.bu.edu>moph.modules) the model works on five strategies. According to Boskey (2020) the five strategies are (1) Perceived severity (2) perceived susceptibility (3) perceived benefits (4) Received barrier and (5) cues and self-efficacy. By application, patients will adopt health education measures if they believe that the education is relevant to their health condition and treatment success.

Crutzen, Ruiter, Kok and Ten.Hon (2021) in their study reported that interviewed students were willing to adhere to the guideline on COVID-19 prevention and control within the university building. In another study, Alshahrani, Alpohani Anglam, Salvl et at (2021) reported in their study that most patients (n-

305) 74.4% in their study reported that good adherence to management plan and were satisfied with simplified information by their physician. Similarly, Sanaeinasah; Saffari; Yazdaporast *et al* (2021) in their study to determine the efficacy of structured education programme toward improving in health related measured found that, all lifestyle and health related measured were improved among the two intervention group. The authors stated further that all clinical measures were significantly improved with intervention group. In their conclusion, they stated that health education programme significantly improved lifestyle.

In a study on patient medication adherence, Jimmy and Jose (2011) found that medication adherence is a primary determinants of treatment success. The authors stated that "failure to adhere to medication regime is a serious problem which will not only effect the patient but also the health care system. Their conclusion was that physicians, pharmacists and Nurses have significant role in their practice to improve patient medication adherence. In another study, Menditto, Guerac, Orlando. Crolo, Somma, Illario. *Et al* (2015) assessed self-reported medication adherence measure during health education and health promotion event using a multi-variable analysis and found that individual with average of education (odd ratio (OR) 2.21, 95% CC 1.08 – 4.52) and non-smoker (odd ratio (OR) 1.87, 95% were found to be more adherence to medication than those with lower level of education on smoking.

Vernon, fielding, Savic, Dodd and Nalid (2019) did a meta-analysis on three phase trials of fluoroquino lower – base – 4 – month Tuberculosis treatment regime and found that medication adherence remains critical but under-estimated issue that has to do with TB treatment outcome. The authors stated that the importance of medication regime has been recognized since the advent of effective tuberculosis treatment. In another study Fernandez – Lazano, Garcia-Gonzales, Mifon-Canelo (2019) assessed adherence to treatment and related factors among patients with chronic conditions and found that patient adherence to treatment regime was 55.5%. Other findings according to the authors include, patient who received complete information; 3.89,95% CC 2.09 – 7.21), having adequate knowledge about medication regime (4.17, 95%, C<2.23 - >.80 and self perception of good quality of life (2.17, 95% Cl 1.18 – 4.02). The authors concluded that adherence to treatment for chronic conditions remained low in primary healthcare.

Studies on keeping hospital appointment dates were also reviewed. Eze and Nneke (2017) assessed out—patient perceptions on timing hospital appointment and found that 36% of respondents agreed that much time waiting for Doctor, 34%, not to stay too long, 64% as relevant rating from 2.94 – 4.05, average rating scale 3.>6. The authors concluded that hospital appointment is a way of reducing waiting time. The authors recommended that timing hospital appointment is a way to improve service delivery.

Mansourch, Eesa and Nooredin (2013) found that inappropriate organisational culture, was the main variables influencing patient education which

are; (1) Non-putting value on education (2) Non – professional activities (3) Physicians oriented atmosphere (4) Conflict and lack of confidence in education (5) Inappropriate communication skill, among others. This was their finding on their research of factors influencing health education to patients in hospitals.

Methodology

The study adopted a descriptive and cross sectional research design. The three hospitals were the Federal Medical Center, Asaba, The University Teaching Hospital, Oghara and Central Hospital, Warri. The hospitals were selected because they constituted the tertiary health institution in the states and spread across the three senatorial districts of the state.The sample was 405 respondents. According to Krejcie and Morgan (1970), Areoye (2004), a sample of 384 is enough (minimum) required for a sample of 1,000,000 and above. Three clinics common to the three hospitals were sampled using simple ballot method from a list of clinics in the hospitalss. Thus: the chest clinic, the maternity/ obstetrics and gynaecology clinic and the post-natal clinics were sampled through the Medical Records Department where booked patients for the three clinics in use were sampled a day prior to the visitation of each clinic in the hospitals. Systematic sampling method was used to sample booked patient a day previous to the hospital visitation for each visit. The same procedure was followed until 405 respondents were obtained. Of the 405 respondents, 150 were sampled from the anti-natal clinics 220 from immunisation/post-natal clinics and 90 from the chest clinics.

Twelve (12) research assistants were drawn from the Medical Records Departments: Chest Clinics, maternity/Gynaecology Clinic and the Post-natal Clinics. A total of 405 respondents were sampled but 392 participated in the study. A drop out of 10 (3.31 %).The instrument was a self-design questionnaire by the researcher and self reporting by participants. It was styled “Patient adherence questionnaire”. It was made up of two sections: Section A: Bio-data of respondents and Section B; has four subsections; - Section B1 Health education/information adherence, section B2 – Adherence to drug/medication, Section B3 keeping booked appointment, section B4 – Healthy living properties. Questionnaire statements were based on the licket-like scale of strongly agreed; SA – 4 points, Agreed – 3 Points, Disagreed – 2 points and strongly disagreed – 1 points. Respondents are advised to make their best option. The instrument was validated with face and content validity by three professional experts in the department of Health and Safety education in Delta State University – Abraka, whose contributions revealed some double barreled statements and some statements with ambiguity, these were corrected. The reliability was obtained by administrating the instrument to patients at the Central Hospital Benin-city outside the study area. Their responses were analyzed using Crombach’s alpha with r = 0.92, this was found comfortable for the study.

The instrument was administered with the assistance of twelve (12) Research Assistants who were staff of the hospitals and trained on the structured questionnaire. It was given to patients after registration for that day's treatment and after consultation with the Doctor or the Nurse. The study was well explained to each of the hospital management in the first place, from where ethical consent was obtained and later to the Nurse and consulting Doctor at the clinic. The consent allowed for the study. Patients were given the questionnaire and stayed long until response was completed.

The study last from May 10th 2021 to 10th August 2021. The data obtained were analyzed using Beach mark for each statement and research questions were analyzed using means, standard deviation and parentages. The Bench mark was 2.50 and above as accepted to adherence and below for non-acceptance. Inferential statistics of regression analysis were used to analyzed the hypothesis at 0.05 alpha using SPSS 23.

Results and discussion

The findings of the study were presented as follows.

Demographic Data

Table 1: Present the demographic data of respondents as follows

Sex/Gender	***Frequency***	***Percentages***
Male	165	42.09
Female	227	57.90
Age (in years)		
18-22	19	4.84
23-27	21	5.35
28-32	27	6.88
33-37	40	10.20
38-42	47	11.98
43-47	46	11.73
48-52	45	11.47
53-57	33	8.41
58-62	28	7.41
63-67	29	7.39
68.72	26	6.63
Above 72	31	7.90
Educational Background		
No formal education	38	9.94
Primary six	58	14.79
Secondary school	94	23.94
NCE/Other Diploma	82	20.91
Graduates	72	18.36
Higher Degree	4```7	11.98
Occupation		
Civil servant	126	32.14
Self employed	156	39.79
Schooling	37	9.43
Working for private firm	73	18.62

Table 2: Descriptive Statistics of Respondents of the study

S/N	Statements	SA	%	A	%	D	%	SD	%	Bench mark	Remark
1	I do implement to all health education/ information given to me by professionals while attending the health facility.	58 **232**	14.80%	303 **918**	77.27%	10 **20**	2.55%	18 **18**	4.59%	3.00	Adherence
2	It is the severity of my ill-health that determine my adherence to health education/information.	130 **520**	33.16%	138 **414**	35.20%	78 **148**	18.87%	50 **50**	12.75%	3.88	Adherence
3	I do relax my adherence to health/information once I now feel safe of the threat of the ill-health	90 **360**	22.95%	138 **414**	35.20%	90 **180**	22.95%	50 **50**	12.75%	2.56	Adherence
4	It is only when I am fully convinced of the benefits of the health education/ information that I adherence strictly to it.	122 **488**	31.12%	130 **390**	33.16%	98 **196**	25.0%	34 **34**	8.67%	2.62	Adherence

5	At times, my use of time, (office work, domestic chores and economy condition) guidance my adherence to health education information during my ill-health education/information during my ill-health period.	82	31.12%	170	43.36%	90	22.95%	50	12.75%	
		328		**510**		**180**		**50**		2.72 Adherence
6	I adherence to health education/information if I know I can do it	154	39.28%	90	22.95%	42	10.71%	50	12.75%	
		616		**270**		**84**		**50**		1.98 Non Adherence
	Aggregate Mean									**2.62**

Figures on Bold – Likert Like Scale

From table 2, it was found that only item 6 among the statements that do not meet the bench mark or criteria variable of 2.50. All others statement met the requirement and with an aggregate mean of 2.62, it shows that respondents were adherence to Health education/information toward healthy living.

Table 3: Descriptive Statistics of adherence to drugs/medication regime among respondents

S/N	Statements	SA	%	A	%	D	%	SD	%	Bench mark	Remark
1	I adhered tenaciously to my drug/medicine dosage while attending health facilities for treatment	122 **448**	31.12%	194 **582**	49.48%	58 **116**	14.80%	18 **18**	4.60%	2.96	Adherence
2	I hardly keep to time while on my drug or medication.	58 **232**	14.79%	178 **524**	45.41	82 **164**	20.91%	66 **66**	4.60%	2.54	Adherence
3	It is the severity of my ill-health that determine my adherence to my drug regime.	130 **520**	33.16%	138 **414**	35.20%	90 **180**	22.96%	34 **34**	8.67%	2.92	Adherence
4	I adherence to my drug (medication regime, if I see that ill-health can still weight me do or affect my family or friends to whom I associate.	58 **232**	14.79%	154 **462**	39.28%	90 **180**	22.96%	42 **42**	10.71%	2.33	No Adherence

5	My adherence to my drug regime is a factor of the benefits I perceived of following the regime at any time.	74 **296**	18.87%	218 **654**	55.61%	50 **100**	12.75%	34 **34**	8.67%	2.89	Adherence
6	Time use is always a factor of my adherence to my drug regime in term of damage and time of administration	50 **200**	12.75%	178 **534**	45.40%	96 **196**	25.0%	50 **50**	12.75%	2.50	Adherence
7	I hardly adherence to my drug regime if it is infections	66 **264**	16.83%	50 **150**	12.75%	162 **324**	41.32%	114 **114**	29.08%	2.17	No Adherence
8	I actually adherence sticky to my drug regime if I am admitted on hospital bed.	130 **520**	33.16%	122 **366**	31.12%	58 **116**	14.79%	26 **26**	6.63%	2.62	Adherence
	Aggregate Mean									**2.59**	

Figures on Bold – Likert Like Scale

Table 3 reveals that item statement 4th and 7th did not meet the adherence level while others met the acceptance level on drug/medication regime. The mean aggregate for drug/medication was 2.59 thus acceptable.

Table 4: Descriptive Statistics of keeping to booked appointment dates among respondents

S/N	Statements	SA	%	A	%	D	%	SD	%	Bench mark	Remark
1	I do adherence strictly to my appointment booking	130 **520**	33.16%	218 **654**	56.61%	58 **116**	14.79%	26 **26**	6.63%	3.35	Adherence
2	I do relax my appointment booking as my condition improves	60 **240**	15.19%	210 **630**	53.57%	106 **212**	27.04%	58 **58**	14.79%	1.56	No Adherence
3	As my fear of relapse or infesting others decreases, I hold less tenaciously to my booking appointment.	34 **136**	8.67%	90 **270**	22.96%	178 **356**	45.41%	34 **34**	8.67%	2.03	No Adherence
4	I keep my appointment booking as to save time in the cardamom and seeing any doctor or nurse early.	58 **232**	14.80%	234 **702**	59.70%	74 **148**	18.87%	34 **34**	8.67%	2.51	Adherence
5	I may not be attended to if I do not keep my booked	90 **360**	22.96%	170 **510**	43.36	90 **180**	22.96%	18 **18**	4.60%	52.72	Adherence

	appointment date										
6	At times, money to meet my expenses keep me off my booked appointment dates	90 **360**	22.96%	170 **510**	43.36%	90 **180**	22.96%	18 **18**	4.60%	2.72	Adherence
7	At times, health worker strict keeps me off my booked appointment date.	162 **648**	41.32%	178 **534**	45.41%	50 **100**	12.75%	18 **18**	4.60%	3.31	Adherence
8	Once I consider my safety and health, I keep my booked appointment dates.	146 **584**	37.24%	186 **558**	47.44%	50 **100**	12.75%	10 **10**	2.55%	3.19	Adherence
	Aggregate Mean									**3.19**	

Figures on Bold – Likert Like Scale

Table 4 reveals that item statement 2 and 3 were below the bench mark or criteria variable of acceptance. Thus all other statements meet the acceptance mark. An aggregate of 3.19 was found for this variable.

Table 5: Descriptive Statistics of respondents understanding of healthy living properties

S/N	Statements	SA	%	A	%	D	%	SD	%	Bench mark	Remark
1	There is much joy to life if I am healthy.	274 **1096**	69.87%	121 **363**	31.12%	10 **20**	2.55%	10 **10**	2.55%	3.80	Adherence
2	Healthy living in one of my determinant of my quality of life at any particular time.	274 **1076**	69.89%	143 **429**	36.69%	10 **20**	2.55%	10 **10**	2.55%	3.91	No Adherence
3	Keeping to given Health education/information gives me opportunity of healthy living.	170 **680**	43.36%	176 **534**	45.40%	18 **36**	4.59%	18 **18**	4.59%	3.23	Adherence
4	Maintaining my drug/medication regime gives me better healthy living.	168 **672**	42.85%	208 **624**	53.06%	18 **36**	4.59%	10 **10**	2.55%	3.42	Adherence
5	Keeping to my booked appointment dates promote my healthy living.	162 **628**	41.32%	192 **486**	26.02%	20 **40**	2.55%	18 **18**	4.59%	2.55	Adherence
6	I attend health facility when I am sick to promote my healthy living.	113 **452**	29.08%	220 **660**	56.65%	42 **82**	10.71%	18 **18**	4.59%	2.55	Adherence
	Aggregate Mean									**3.41**	

Figures on Bold – Likert Like Scale

Table 5, shows that all item statement were acceptable. With an aggregate mean of 3.41 showing that respondents were conversant with properties of adopting healthy living.

Table 6: A regression analysis of patient adherence to health education instruction. Adherence to drugs/medication and adherence to booked appointment as predicting promoting health living.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.536[a]	.287	.282	2.13484

a. Predictors: (Constant), PAT ADH TO HE, KEEPING BOOKED APPOINTMENT, ADH TO DRUG/MEDICATION

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	712.079	3	237.360	52.081	.000[b]
	Residual	1768.327	388	4.558		
	Total	2480.406	391			

a. Dependent Variable: HEALTHFUL LIVING PROPERTIES

b. Predictors: (Constant), PAT ADH TO HE, KEEPING BOOKED APPOINTMENT, ADH TO DRUG/MEDICATION

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	11.410	.733		15.576	.000
	Keeping Booked Appointment	.198	.041	.288	4.857	.000
	ADH to Drug/Medication	.107	.036	.178	2.960	.003
	Pat ADH to He	.133	.035	.181	3.747	.000

a. Dependent Variable: HEALTHFUL LIVING PROPERTIES

Table 6 revealed that the criterion variable of patient adherence was an f-value of 52.081, df $^{3}/_{388}$ and a significant value of .0001 at P<.05. This shows that the criteria variable was significant to health living. On further coefficient

analysis patients adherence to health education/instruction has a t-value of 3.747 with a significant value of .001 at P<0.05. Adherence to drugs/medication had a t-value of 2.960 with a significant value of 2.960 while adherence to booked appointment has a t-value of 4.857 with a significant value of .001 at P<0.05.

Discussion

Patients' adherence to health education/information, adherence to drugs/medication and patients keeping their booked appointment will not only promote healthy living but also health promotion opportunity.

In this study, it was found that all variables in the study has an f-value of 52.081 and this was found significant at .001 P<.05. When patient adherence to health education/information against healthy living was analysed, it was found to have a t-value of 3.747 and significant at .001, P<.05. This was significant. This tally with the findings of Crutzen, Ruitter, Kok *et al* (2021) and that of Sanaeinasabi *et al* (2021), that health education/information adhere to tenuously will foster healthy living in the individual, the family and the community. The findings also supports that of Alshahrahi, Ajohani, Angham, Salut *et al* (2021), that most patients (n=305) 79.40% reported good adherence to management plan and others.

It was found in this study that patient adhered to their drug/medication at t-value of 2.9% and significant at .001, P<.05. This was found to be significant and corresponds with a descriptive value. Mendetto, Guwerac, Orland, Crolo Somma and Ilario *et al* (2015) that individual adherence to drugs/medication but more influence by education among smokers. According to Venrnon, Fielding, Savic, Dodd and Nalid (2019), in their study of Fluoroguinolone – base – 4 months tuberculosis treatment regime and found adherence to medication remain critical in the treatment of tuberculosis. Along with the finding of this study, Diikstha, Yervoet, Sino, Heerdink *et al* (2021) who found in their study that on the whole respondents were satisfied with information from Nurses in self-management and nurses visitation support improved their adherence.

When patients keeping to booked appointment was assessed against healthy living, it was found to be significant with a t-value of 4.857 with a significant value of .001 P<.05. The findings tally that of Eze and Nneke (2017) who found in their study that patient complain of long time waiting for Doctors attention and concluded that hospital appointment is a way of reducing waiting time. By this it is implies that keeping booked date reduces patients stress and worries which accompany waiting for health workers attention in health facilities.

The research questions were designed to assess the extent of adherence. Viewed from this, above 2.50 is adherence while below is non adherence. It was found in this study that aggregate respondents value fell just a little above the average. The regression was significant but were between 0.373, .451 and .259 respectively for health education/information, adherence, to drugs/medication

regime and keeping book appointment date respectively, as seen from the descriptive statistics.

Conclusion and recommendations

This study shows that patient practice adherence to hospital regime to a great extent with their bench mark above average and significant in their relationship between health education/information adherence, adherence to drugs/medication regime and keeping booked appointment. A statistical analysis proved patients to adhere to hospital regime on all three variables of the study with the following results; Anova value of F= 52.081, af 3/388 and significant at .001, P<0.05. Adherence to health education/information has t-value of 3.747 and significant at .001, while adherence to drugs/medication had at value of 2.960 and significant at .003 and keeping booked appointment had t-value of 4.857 and significant at .001. It was recommended that:

i Health education/information to patients in health facilities should be sustained and improved upon.
ii Patient adherence to their drugs/medication regime should be sustained and improved upon
iii Patient keeping to booked appointment should be sustained and improved upon.

References

Alshahreni E.H, Adjoheni R.S Anglam A. Salul (2021) Adherence to treatment and level of satisfaction among Saudi hypertensive patients. A multi city study. National Libraary of Medicine

Araoye, M.O. (2004) *Research methodology with statistics for health and social sciences*, Ilorin Nathadex publishers. P. 118.

Artem, C. (2021). What is health education? Definition topics and role in society. Lessontranscipt.com

Boskey, E. (2020) Health belief model (HMB): (spas web.bumc.bu.edu>morph.modules)

Cesar, I.F, Jum.G, David, P.A, Diego F., Juan, M. *Et al* (2019) Adherence to treatment and related factors among patients with chronic sectional study. BMC Family Practice, 220 (132)

Crutzen I., Ruilter R. Kok, R.A.C and Ten-Hoor G. (2021) University students' adherence to COVID-19 guideline: A qualitative study on facilitators and barriers: Health psychology Bulletin.

Dijkstra N.E, Yervloet, M. Sino C.C.G, Heerdink E.R et (2021). Home care patients' experience with home care nurses support on medication adherence. (http://creativecommons.org/license/by-nc.3.01).

Eze, N.C. and Uneke C.J. (2017) Assessment of out-patients perception on timing hospital appointment to reduce waiting time at primary healthcare centre, Abakaliki, South-East Nigeria: A cross sectional study. *International Research Journal of Medicine and Medical science* 5(2):19-24.

Fernandez-Lazaro, C.I.; Garcia-Gonzalez, J.N.; David, P.A. (2019) Adherence to treatment and related factors among patients with chronic condition in primary care: A Cross-sectional study. *Fam. Pract.* 20(1):132. Doi: 10.1186/5.12875-619-1019-3

Jennifer K, Kelsy.C, Jonath. D, and Frank, T. (2018) Medication adherence: The elephant in the room. *U.S Pharmacist;* 43 (1) 30 – 34

Jimmy, B. and Jose, J. (2011) Patience medical adherence; measures in daily practice. *Oman Medical Journal* 26(3) Doi: 10.5001/Omaj.211.38.corpusID,3898255

Kok, G.; Borne, B. and Mullen, P.D. (1997) Effectiveness of health education and health promotion: meta-analysis of effective studies and determinants of effectiveness. *Patient Education and Counselling*, 30(1).

Lius-Emillio, G., Maria.A, Tatiana, D, Vicente G, Domingo. O (2013) Adherence to therapies in patient with type 2 diabetes. *Diabetes Therapy* 4. 175-194

Mackintosh, N. (2010). Comparism of the concept of health education and health promotion. *Journal of Clinical Nursing*. 16:580-592.

Mansourch, A.F.; Eesa, M. and Nooredin, M. (2013) Factors influencing the patient education: A qualitative research. *Iran J. Nursing midwifery Res*. 8(2): 133-139.

Menditto, E.; Guerriero, F. Orlando, V.; Crola, C.; DiSoma, C.; Ilario, M.; Morisky, D.E. and Colao (2015). A self – assessment of adherence to medication: a case study in Campania region community dwelling population. *J. Aging Res.* Doi: 10.1155/2015/682503

RCCAPP: theories and Approaches: health belief model (HBM) – ETR. Recapp: etr. Org> recap. Health education wikpedia

Sanaeinasab, H.; Saffari, M.; Yazdaparast, D.; KarimiZarchi, A.; Al-Zaben, F.; Koenig, H.G. *et al* (2021) Effects of a health education programme to promote healthy lifestyle and glycemic control in patients with type 2 diabetes: A randomized controlled trial. Prim Carer Diabetes

Tan C.S (2020) The need of patient education to improve medication adherence among hypertensive patients. *Malaysia Journal of Pharmacy*, 6(1).

Vernon, A.; Fielding, K.; Savic, R.; Dadd, L. and Nahid, P. (2019) The importance of adherence in tuberculosis treatment clinical trails and its relevance in explanatory and prognostic trails. *PLOS Med.* 16(2): e1002884:doi: 101371/journalpmed,1002884

WHO (2020) Adherence to long-term therapist: evidence for action. https:www.who.int/cnp/knowledge/public-acti