(RESEARCH ARTICLE)

Evaluating health related quality of life among hypertensive patients: An educational intervention study

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Abstract

The health care sector has shown increased interest in humanistic outcomes of therapy. Health related quality of life (HRQOL) evaluation among patients receiving treatment for chronic diseases is now widely applied. Hence, the effect of education on the HRQOL of hypertensive patients was evaluated in two tertiary health facilities; FMC, Yenagoa and NDUTH, Okolobiri in Bayelsa State, Nigeria. Trained Pharmacist interviewed willing hypertensive patients between 21-80 years of age at the cardiology clinics of the health facilities using the MINICHAL questionnaire which is specific for hypertension. A convenient sampling technique was adopted. Demographic characteristics were also obtained. The responses (425) were analyzed and observed. To evaluate the effect of drugs and educational intervention, an interactive health talks on hypertension was held at their cardiology clinic weekly for six weeks. Two months later the questionnaire was re-administered. The responses post intervention (297) was analyzed. The results were then compared. The MINICHAL rates HRQOL as best=0 to worst=51. HRQOL score of 12.96 to 8.00 in FMC Yenagoa and 8.70 to 8.55 in NDUTH Okolobiri, pre and post intervention respectively was observed. Though not significant (P=0.3998), the study revealed that educational intervention brought about a positive trend in demographic characteristics. Age, marriage and education were indicated as strong indicators of HRQOL. Educational intervention on hypertension improves patient's HRQOL. Patients' education and counseling should be a continuous tool in patient management.

Keywords: Hypertension; Health Related Quality of Life; Hypertensive Patients; Educational Intervention

1. Introduction

Quality of life of a person can be assessed subjectively and objectively by the economic, clinical and humanistic outcomes and of physical, material, social, and emotional indicators after a course of a particular treatment [1]. However, health related quality of life is that aspect of quality of life that relates to the functional effect of the presence of a disease and of it' therapy on a person. How well a person function (carry out some pre-defined activities or functions in their life) and his or her perceived wellbeing (individual's subjective feelings) in physical, mental, and social domains of healthcare direct functions of the disease state involved [2, 3]. Health related quality of life (HRQOL) or its values and utilities can be assessed by the QALY which is a measure of health on a scale from zero (0) as being dead and one (1) as the best HRQOL [4,5]. Hypertension is a multifactorial clinical condition characterized by high and sustained levels of blood pressure with the propensity of development of cardiovascular diseases [6]. It is observed to progress with mild or no symptoms for years until it is diagnosed or consequences of end-organ damage becomes evident [7]. On diagnosis, the management requirements include those of chemotherapy and lifestyle changes, but adherence to the above have been found to be low, and thus a consequent reported poor quality of health [8-12]. Studies have also shown that, even with

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adherence to drug management, quality of life seem not to improve, partly because of the pattern of the disease progression [13]. Awareness in the form of educational intervention has reported positive attitude to treatments [14, 15] and improved quality of life in literature [16]. Instruments used for assessing QOL in hypertensive individuals, such as the MINICHAL Scale (Mini Cuestionario de Calidad de Vida en Hipertension Arterial), among others, has been shown be useful.

Bayelsa state of Nigeria is not free of the scourge of hypertension. The literature search did report the research efforts of some scholars in the Niger Delta region, such as the work on health related quality of life of hypertensive and diabetic patients by Ganiyu et al 2015 [18] and that of arthritis and diabetes patients by Suleiman et al, 2016 [19], among others. The main goal of the study is to describe the management of hypertension in two Nigerian tertiary health facilities in Bayelsa state of Nigeria with a view to observing similarities and differences observed in all facets and steps of management.

2. Material and methods

2.1. Participant selection

A cross-sectional prospective study was carried out using convenient sampling technique. Four hundred and twenty five (425) hypertensive patients were interviewed for the pre-intervention which comprised of 169 in NDUTH Okolobiri and 256 in FMC Yenagoa. The post-intervention was executed by interviewing 297 participants. This was made up of 153 patients in FMC Yenagoa and 144 patients in NDUTH Okolobiri. Participants were aged 21 to 80 years, diagnosed of hypertension and had been attending the medical outpatient and cardiology clinics of the two health facilities.

2.2. Administration and intervention

The MINCHAL Scale questionnaire for hypertension was administered to consented participants by trained pharmacists who interviewed the patients on their clinic days and entered their respective responses into the study instrument directly. The MINICHAL (Mini Cuestionario de Calidad de Vida en Hipertension Arterial) scale is a specific tool for assessing QOL in hypertensive individuals. It consists of two domains-mental (nine items) and somatic (seven items). The mental domain includes questions 1-9 and scores range from 0-27points whereas the somatic domain includes questions 10-16 and scores range from 0-21points. The last question is related to the overall impact of hypertension on the QOL. The score scale is likert scale with four possible answers (0=No, not at all; 1=Yes, somewhat; 2= Yes a lot; 3= Yes, very much,). Total points range from 0(best level of Health) to 51(worst level of Health). An analysis of the pre-intervention responses was carried out followed by six week duration of educational intervention. Two hundred and ninety-seven (297) participants in all, FMC Yenagoa (153) and NDUTH Okolobiri (144) consented to partake in the study. The intervention was a forty five (45) minutes long health talk given to participants on their weekly clinic days in the cardiology units. Two months after the intervention, the study instrument was repeated using the same pattern. The same analysis was repeated and the two HRQOL compared for trend.

3. Results and discussion

The participants of the study were more of females (52.7%) within the age brackets of 40 to 60 (53%), married (75.39%) and living with adults (81.25%) having minimum secondary education (75.7%) and in government employment (56.25%) (Table 1). The study recorded an improvement in health-related quality of life after the educational intervention. The result follows the trend of HRQOL score of 12.96 to 8.00 in FMC Yenagoa and that of 8.70 to 8.55 in NDUTH Okolobiri, Bayelsa state, Nigeria. This represents 4.96 units and 0.15 unit improvements in HRQOL in FMC and NDUTH respectively. In the MINICHAL scale, 0 stands for best quality of life and 1 stands for worst quality of life. This is as shown in Table 2. Paired t-test revealed two-tailed P value of 0.3998, t = 1.377 with 1 degrees of freedom, meaning that the degree of change experienced was not considered significant. The improved effect of the intervention was revealed by almost all demographic characteristics, except for males below the age of 40 and those above 60 years, single, living alone or with children, with low education and unemployment (Table 3). Chi-square test on Quality of life and patient baseline characteristics revealed age, marriage and education as strong indicators of HRQOL (Table 4).

Table 1 Demographic characteristics of respondents (N=425)

Demographic characteristics of hypertensive patients in Bayelsa State			
Item	**Response label**	**Count**	**Percentage**
Gender	Male	201	47.27%
	Female	224	52.73%
Age group	<40	38	8.98%
	40-50	111	26.17%
	51-60	115	26.95%
	>60	161	37.89%
Marital status	Married	320	75.39%
	Single	32	7.42%
	Div/widow/separated	71	16.80%
	Unclassified	2	0.39%
Living	Alone	60	14.06%
	With adults	345	81.25%
	With only children <16yrs	5	1.17%
	Complex	15	3.52%
Education	No school	32	7.42%
	Primary	68	16.02%
	Secondary	159	37.50%
	Tertiary	163	38.28%
Occupation	Gov. Staff/ retiree	239	56.25%
	Private sector staff/ retiree	27	6.25%
	Self employed	101	23.83%
	Unemployed	43	10.16%
	Retired from self-employment	10	2.34%

Table 2 Quality of Life in FMC Yenagoa and NDUTH Okolobiri Pre and Post Intervention

	Quality of Life of hypertensive patients in FMC Yenagoa and NDUTH Okolobiri Pre and Post Intervention, Bayelsa State Nigeria																
		FMC Pre (256)				FMC Post (152)				NDUTH Pre(169)				NDUTH Post(144)			
	Question items	Not at all (0)	Yes (1)	Somewhat yes (2)	A lot (3)	Not at all (0)	Yes (1)	Somewhat yes (2)	A lot (3)	Not at all (0)	Yes (1)	Somewhat yes (2)	A lot (3)	Not at all (0)	Yes (1)	Somewhat yes (2)	A lot (3)
HQ1	Have you been sleeping poorly	130	69	50	7	119	15	19	0	78	59	31	1	110	13	18	3
HQ2	Have you had difficulty maintaining your usual social relationships?	161	60	30	5	116	7	18	0	147	11	10	1	73	60	11	0
HQ3	Have you had difficulty interacting with other people?	177	45	31	3	146	3	2	2	148	13	6	1	117	16	10	1
HQ4	Have you felt that you are not playing a useful role in life?	166	45	38	7	124	23	4	2	148	15	6	0	67	62	15	0
HQ5	Have you felt unable to make decisions and start new things/projects?	172	49	29	20	145	6	2	0	138	24	6	0	101	20	23	0
HQ6	Have you felt continuously distressed and tense?	130	53	62	11	36	38	79	0	122	25	21	1	46	69	29	0
HQ7	Have you felt that life is a constant struggle?	120	66	50	20	116	14	22	1	106	42	17	4	97	40	6	1
HQ8	Have you felt incapable of enjoying your daily activities?	139	70	37	10	117	4	32	0	119	30	16	3	85	52	5	2
HQ9	Have you felt worn- out and powerless?	97	101	44	14	95	10	47	1	104	41	22	2	78	64	2	0
HQ10	Have you felt sick?	51	151	41	13	61	51	33	0	51	84	29	3	74	44	26	0
HQ11	Have you had difficulty breathing or felt breathless for no apparent reason?	137	55	58	6	131	11	10	1	114	33	21	1	88	53	2	1
HQ12	Have your ankles been swollen?	124	81	44	7	133	18	2	0	79	77	12	1	88	50	6	0
HQ13	Have you noticed that you are urinating more frequently?	132	77	40	7	97	13	37	0	76	67	25	1	82	57	4	1
HQ14	Has your mouth been dry?	141	62	49	4	127	8	15	1	88	45	35	1	95	37	9	3
HQ15	Have you felt pain in the chest without doing any physical exertion?	125	79	47	5	90	18	45	0	94	50	25	0	103	32	9	0
HQ16	Have you noticed numbness or a tingling sensation in any part of the body?	111	87s	48	10	111	18	24	0	96	48	23	2	98	44	2	0
HQ17	Would you say that your hypertension and it's treatment has affected your quality of life?	61	105	49	41	23	14	116	0	77	51	30	11	103	23	16	2
	Subtotal HRQOL	0.00	4.90	5.83	2.23	0.00	1.77	6.63	0.16	0.00	4.23	3.96	0.59	0.00	5.11	2.68	0.29
	Total HRQOL	12.96				8.55				8.78				8.08			

P=0.3998, t=1.377 (1)

Table 3 Quality of life and demographic characteristics (pre and post intervention) for FMC and NDUTH

Quality of life and demographic characteristics of hypertensive patients (pre and post intervention) for FMC and NDUTH, Bayelsa state, Nigeria					
Item	**Response**	**Institution**			
		FMC Pre (256)	**FMC Post (153)**	**NDUTH Pre (169)**	**NDUTH Post (144)**
Gender	Male	6.26	3.42	4.04	5.24
	Female	6.54	5.14	4.75	2.80
Age group	<40	0.91	2.54	6.57	2.09
	40-50	3.61	1.99	1.16	1.06
	51-60	3.49	2.58	1.02	2.99
	>60	4.8	1.45	0	1.90
Marit.al status	Married	9.54	5.43	6.57	4.17
	Single	0.97	1.88	1.16	1.31
	Divorced/widow/separated	2.29	1.26	1.05	2.56
	Unclassified	0.00	0.00	0.00	0.00
Living	Alone	1.8	0.71	0.95	2.10
	With adults	10.6	6.33	6.98	4.59
	With children <16yrs	0.13	0.85	0.79	1.31
	Complex	0.28	0.67	0.07	0.03
Education	No school	1.26	0.58	0.66	0.25
	Primary	2.07	0.19	0.74	1.45
	Secondary	5.0	2.58	2.62	3.53
	Tertiary	4.38	5.21	5.15	2.74
Occupation	Gov. Staff/ retired	7.11	5.81	6.33	5.54
	Private sector staff	0.98	0.40	0.65	0.53
	Self employed	3.17	2.10	1	1.13
	Unemployed	1.07	0.25	0.25	0.56
	Retired from self-employ	0.41	0.00	0.28	0.27
	TOTAL QOL	12.96	8.55	8.78	8.08

P=0.3998, t=1.377 (1)

Table 4 Chi-square test on quality of life and baseline characteristics (FMC Yenagoa and NDUTH Okolobiri pre and post intervention

No	Gender				Age				Marriage				Living status				Education				Occupation			
	FMC		NDUTH		FMC		NDUTH		FMC		NDUTH		FMC		NDUTH		FMC		NDUTH		FMC		NDUTH	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	0.700	0.700	0.500	0.100	0.900	0.020*	0.500	0.00*	0.000	0.000	0.500	0.300	0.900	0.100	0.000	0.400	0.200	0.008*	0.600	0.100	0.400	0.200	0.900	0.800
2	0.600	0.042*	0.200	0.000	0.600	0.100	0.100	0.04*	0.700	0.500	0.100	0.100	0.900	0.400	1.000	0.200	0.100	0.800	0.03*	0.200	0.200	0.600	1.000	0.00*
3	0.700	0.200	0.700	0.600	0.400	0.200	0.100	0.200	1.000	0.200	0.100	0.800	0.700	0.005*	1.000	0.900	0.000	0.006*	0.500	0.200	0.400	0.600	0.900	0.300
4	0.200	0.400	0.800	0.000	0.400	0.200	0.600	0.01*	0.700	0.200	0.600	0.00*	0.800	0.006*	0.700	0.000	0.000	0.002*	0.300	0.00*	1.000	0.600	0.900	0.200
5	0.300	0.500	0.700	0.300	0.100	0.100	0.000	0.300	0.800	0.039*	0.000	0.00*	1.000	0.400	0.100	0.500	0.100	0.033*	0.700	0.00*	0.900	0.800	0.400	0.200
6	0.400	1.000	0.100	0.800	0.400	0.400	0.900	0.100	0.900	0.001*	0.900	0.200	0.900	0.700	1.000	0.100	0.100	0.500	1.000	0.000	0.400	0.300	0.900	0.300
7	0.200	0.900	0.100	0.400	0.000	0.400	0.200	0.700	0.500	0.200	0.200	0.600	0.600	0.046*	0.800	0.700	0.600	0.037*	0.900	0.100	0.000	0.700	0.800	0.800
8	0.500	0.700	0.300	0.200	0.200	0.400	0.600	0.700	0.500	0.100	0.600	0.900	0.200	0.400	1.000	0.300	0.000	0.100	0.800	0.700	0.100	0.400	0.300	0.500
9	1.000	0.600	1.000	0.100	0.100	0.700	0.200	0.800	0.700	0.000*	0.200	0.200	0.800	0.015*	0.900	0.800	0.000	0.100	0.100	0.800	0.000	0.003*	0.900	0.200
10	0.300	0.100	0.900	0.100	0.800	0.600	0.400	0.300	0.300	0.001*	0.400	0.300	0.800	0.900	0.800	1.000	0.300	0.005*	1.000	0.600	0.000	0.021*	0.600	0.300
11	0.200	0.200	0.600	0.700	0.100	0.005*	0.800	0.000	0.300	0.000*	0.800	0.600	1.000	0.100	1.000	0.800	0.100	0.100	0.100	0.900	0.800	0.900	0.600	0.600
12	0.200	0.800	0.700	0.01*	0.100	0.005*	0.700	0.300	0.900	0.000*	0.700	0.800	1.000	0.300	0.02*	0.800	0.200	0.800	0.500	0.100	0.400	0.900	1.000	0.600
13	.000*	1.000	0.300	0.400	0.000	0.700	0.900	0.700	0.800	0.050*	0.900	0.200	1.000	0.100	0.700	0.600	0.200	0.300	0.600	0.600	0.400	0.100	0.700	0.200
14	0.700	0.800	0.800	0.400	1.000	0.300	0.900	0.800	0.900	0.200	0.900	0.400	0.700	0.100	0.600	0.700	0.100	0.016*	0.300	0.800	0.100	1.000	0.000	0.400
15	0.300	0.900	0.100	0.01*	0.600	0.200	0.600	0.700	0.500	0.100	0.600	0.800	0.900	0.100	0.300	0.500	0.000	0.200	0.02*	0.600	0.800	0.400	0.700	0.03*
16	1.000	0.900	0.500	0.300	0.500	0.046*	0.300	0.200	0.200	0.000*	0.300	0.700	0.700	1.000	0.300	0.700	0.000	0.600	1.000	0.300	0.200	0.400	0.01*	0.100
17	0.200	0.400	0.400	0.500	0.500	0.200	0.100	0.800	0.000	0.300	0.100	0.500	0.100	0.700	0.500	0.200	1.000	0.200	0.500	0.800	0.500	0.500	0.300	0.800

4. Discussion

The educational intervention was seen to bring about 0.15-to-4.96-unit improvement (ranging from 51 to 0) in facilities of the study. This was also demonstrated by the positive trends displayed by almost all demographic characteristics after the intervention. Age, marriage and education were also revealed to be strong indicators of HRQOL. Some scholarly works reported positive trends after educational intervention in the belief and attitude to antihypertensive treatment, whereas others reported insignificant changes. In the very locality of the study, the works of Ganiyu, Erah and Suleiman [18] on HRQOL of hypertensive and diabetic patients reported insignificant improvements after educational intervention. In the work of Magadza, Radloff, and Srinivas in the year 2009 [15], after educational intervention participants were shown to have increased levels of knowledge about hypertension and its therapy as well as their beliefs about medicines, after an educational intervention was carried out $P<.0001$). It also revealed that most of the parameters that assessed beliefs about medicines were significantly modified in a positive manner ($P<.01$ for concerns about medicines, $p<.01$ for beliefs about the harmful nature of medicines, and $P<.01$ for the necessity-concerns differential). In their study, improvement in adherence or quality of life was not significant partly because of the short duration of the study. Ozoemena *et al* 2019 [16] while working on effects of a health education intervention on hypertension-related knowledge, prevention and self-care practices in Nigerian retirees revealed significant improvement in hypertension knowledge ($p=0001$) medication adherence ($p = 0.000$), and time-by-group interaction effects (within-groups) for all the outcomes with small to large effect sizes.

5. Conclusion

The study concludes that educational intervention carried out on two health facilities in Bayelsa state of Nigeria recorded insignificant but positive trends in improvement on demographic characteristics and an improvement in quality of life. Age, marriage and education were also indicated as strong indicators of HRQOL. Concordances to the reported results were also observed.

Compliance with ethical standards

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I am grateful for the ethical consent from the three hospitals involved as well as the co-operation of the health team in these facilities.

Disclosure of conflict of interest

No conflict of interest is associated with this work.

Contribution of Authors

We declare that this work was done by the author(s) named in this article and all liabilities pertaining to claims relating to the content of this article will be borne by the authors. All authors read and approved the manuscript for publication.

Statement of ethical approval

The present research work does not contain any studies performed on animal/human by any of the authors.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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