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Evaluation of Nursing Interventions in Integrated Management of Chronically III Patients.

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Abstract: *The decision-making process at team level involves shared responsibilities for client's outcome. This study evaluated nursing interventions in integrated management of chronically ill patients. It was a cross-sectional research design. Purposive sample of 240 nurses working in secondary and tertiary health care institutions in Anambra State of Nigeria were used for the study. Two research questions and two null hypotheses guided the study. The instrument used for data collection was questionnaire on nursing interventions in integrated management of chronically ill patients. Standard descriptive statistics was used to summarize the variables. Mean scores were used to answer the research questions and Pearson product moment correlation was adopted in testing the null hypotheses at 0.01 level of significance.*
Nurses were noted to provide high level of client health assessment and self-management supports in integrated care of the chronically ill patients. Also the health assessments and self-management supports provided by the nurse professionals correlated significantly with the interactions among the practice team as well as nurses optimization of client therapy respectively.
Keywords*: Chronic illness, Health assessment, Integrated care, Nursing interventions, Optimization of therapy, Self-management supports.*

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I. Introduction

A chronic illness is one that lasts for an extended period usually six months or longer, and often throughout the persons life (Kozier, Erb, Berman and Snyder, 2004). Chronic illnesses usually have slow onset and periods of remission when the symptoms disappear, and exacerbation when the symptoms reappear (Kozier et al. 2004). WHO (2002) defined Chronic conditions as requiring ongoing management over a period of years or decades. Chronic conditions cover a wide range of health problems such as heart disease, diabetes, lung disease eg asthma, HIV/AIDS, mental disorders (such as Depression and Schizophrenia), disabilities and impairments such as musculoskeletal disorders and cancer (WHO, 2002; Nolte and Mckee, 2008; Coleman et al 2008). Studies have revealed that chronic conditions frequently go untreated or are poorly controlled until more serious and acute complications arise (McGlynn et al. 2003). Advances in healthcare that keep people alive while controlling, although not curing their conditions have led to growing numbers of people surviving with chronic illnesses (TNS Opinion and Social, 2007). The Common theme is that people with chronic illness require a complex response over an extended time period that involves co-ordinated inputs from a wide range of health professionals and access to essential medicines and monitoring systems, all of which need to be optimally embedded within a system that promotes patient empowerment (Conrad and Shortell, 1996; Unwin et al. 2004; Nolte and Mckee, 2008).

According to Plochg and Klazinga (2002), the increasing prevalence of chronic illness is posing considerable challenges to health systems. Patients may receive care from many different providers, often in different settings or institutions even when they have only a single disease such as diabetes. They are frequently called upon to monitor, coordinate or carryout their own treatment plan while receiving limited guidance on how to do so. Plochg and Klazinga (2002) pointed out that there is pressing need to bridge the boundaries between professionals, providers and institutions through development of more integrated or coordinated approaches to service delivery so as to provide better support for the patients. Integrated care connotes a range of approaches that are deployed to increase coordination, cooperation, continuity, collaboration and networking across the different components of health care delivery (Simeons and Scott, 1999) involving patient and family (Blackie, 1998). Professional integration include joint working, group practices, contracting or strategic alliances of health care professionals within and between institutions and organizations (Shortel et al. 1994; Simeons and Scott 1999; Delnoij et al. 2002).

Chronic illness confronts patients with a spectrum of needs that requires them to alter their behavior and engage in activities that promote physical and psychological well-being to interact with healthcare providers and adher to treatment regimen, monitor their health status and make associated care decisions, and to manage the impact of the illness on physical, psychological and social functioning (Clark, 2003). Bayliss et al. (2003) noted that the increasing responsibility taken by patients for self management can create particular challenges for those with multiple conditions as they may experience aggravation of one condition by treatment of another, for example, a patient with chronic respiratory disease may struggle to adhere to exercise programmes designed for his/her diabetes. Grumbach (2003) observed that the goals of chronic care are not to cure but to enhance functional status, minimize distressing symptoms, prolong life through secondary prevention, and enhance quality of life. According to Nolte and Mckee (2008), it is clear that these goals are unlikely to be accomplished by means of traditional approach to health care that focuses on individual diseases and based on a relationship between an individual patient and a physician; but it is clear that what is needed is a model of care that takes a patient-centred approach by working in partnership with the patient and other healthcare personnel to optimize health outcomes. Crumbie (2005) stated that the advantage of integrated team work is that the patient is treated more holistically and is more likely to be able to see the value of the services provided.

Wagner et al. (2001) developed the influential chronic care model (CCM) aimed to provide a comprehensive framework for the organization of healthcare to improve outcomes for people with chronic conditions, which was based on the premise that high-quality chronic care is characterized by productive interactions between the practice team and patient, involving assessment, self-management support and optimization of their therapy and follow-up. Eventhough not exhaustive, inclusive in these health professionals that make up the practice team are physicians, nurses, pharmacists, physiotherapists, radiographers, laboratory scientists, record officers, social workers, psychologists, and ancillary staff. Nolte and Mckee (2008) opined that effective responses will require initiatives at all levels to ensure that the right resources can be assembled in the right place at the right time while establishing support and initiatives for everyone to work together to achieve this shared aim. Nolte and Mckee (2008) further added that there is also considerable scope for shared learning from each others successes and failures. It is against this background that this study evaluated nursing interventions in integrated care of chronically ill patients.

Research Questions

- What is the extent of nurses health assessment of clients in integrated management of chronically ill patients?
- To what extent do nurses render self-management support to their clients in integrated management of chronically ill patients?

Hypotheses:-

- There is no significant relationship between the health assessment and self-management supports given by nurses to clients in integrated care of chronically ill patients.
- Interactions between the practice team in integrated management of chronically ill patients are not significantly related to nurses optimization of the clients' therapies.

II. Materials and Methods

Design and Sampling.

The study was a cross-sectional research design. Purposive sample of 240 nurses working in two levels of Health care institutions (five General Hospitals and two Teaching Hospitals) in Anambra State of Nigeria were used for the study. Ethical approval was obtained for the study, and informed consent was obtained from the respondents.

Inclusion criteria for the study were all registered nurses with different areas of specialty attending to chronically ill patients in any of the selected health institutions. Exclusion criteria were nurses who have never attended to chronically ill patients and those who indicated not to participate in the study.

Instrument.

Questionnaire on Nursing Interventions in Integrated Management of Chronically ill Patients (QNIIMCIP) was used to obtain data from the respondents. QNIIMCIP was developed by the researcher based on the framework on chronic care model by Wagner et al. (2001). Section A of the instrument elicited information on the demographic characteristics of the respondents (eg. professional qualifications, sex, years of working experience, setting/unit, and collaboration team). Section B of the questionnaire elicited information on patient-reported demographics and chronic conditions (eg. Age, sex, medical diagnoses, duration of illness, self-management measures, etc), while section C of the instrument elicited information on nursing interventions in integrated care of chronically ill patients (eg interactions between the nurses and patients, assessment of

patients, self-management supports, interactions with the practice team, etc). The responses to section C of the instrument were scored on a 4- point scale ranging from 1 point for less/rarely often, 2 points for fairly often, 3 points for moderately often, and 4 points for very often.

The instrument (QNIIMCIP) was tested for reliability. 20 nurses working in a health institution in another zone of Nigeria were used. Internal consistency reliability coefficient was calculated using Cronbach alpha for the entire scales, and a reliability coefficient of 0.70 was obtained.

Data Analysis:

Standard descriptive statistics of means, frequency and standard deviation were used to summarize the variable. Mean score and standard deviation were used to answer the research questions. Pearson product moment correlation was used to test the null hypotheses at 0.01 level of significance. SPSS version 21 was used in the data analysis.

III. Result

Table 1. Descriptive statistics of the measured variables

Variables	N	Minimum	Maximum	Mean	SD
Age of patients	240	3.00	84.00	47.4	16.06701
Interaction between Nurses and Patients.	240	1.00	4.00	3.1368	0.56260
Health Assessment of Patients	240	1.00	4.00	3.0250	0.61769
Self-management support	240	1.00	4.00	3.1017	0.57056
Optimization of client Therapy	240	1.00	4.00	2.9806	0.51649
Interaction Between Practice Team	240	1.00	4.00	2.7212	0.59982
Follow-up care of Patient	240	1.00	4.00	2.1556	0.68311
Evaluating Programme of care/Nursing Audit	240	1.00	4.00	2.9033	0.84941
Valid N (Listwise)	**240**				

Table 1 shows the descriptive statistics of the measured variables. Out of the 240 chronically ill patients, the least age was 3 years, maximum age 84 years, mean age 47.4 with standard deviation (SD) of 16.06701. The mean for interaction between nurses and patients was 3.1368 with SD 0.56260; for health assessment of the patients, the mean was 3.0250 with SD of 0.61769. Self-management support had a mean of 3.1017 with SD of 0.57056; optimization of client therapy had a mean of 2.9806 with SD of 0.51649. For interaction between the practice team, the mean was 2.7212 with SD of 0.59982. Follow-up care of patients had mean of 2.1556 with SD of 0.68311, while evaluating programme of care/nursing audit had mean of 2.9033 with SD of 0.84941. Total number of each variable was 240.

Table 2. General characteristics of the nurses and the chronically ill patients

	Frequency	Percent
Nurses		
Professional Qualification:		
Single	81	33.75
Multiple	159	66.25
Total	240	100.0
Sex:		
Male	51	21.25
Female	189	78.75
Total	240	100
Years of working:		
2-5 years	98	40.8
6-10 years	59	24.6
Above 10 years	83	34.6
Total	240	100.0
Setting/Health Institution:		
Tertiary	143	59.6
Secondary	97	40.4
Total	240	100.00
Unit:		
Medical Unit	156	65.0
Surgical Unit	43	17.9
OPD/Emergency Unit	30	12.5
ICU	9	3.8
Others	2	0.8
Total	240	100.00

Patients/clients		
Sex of Patients:		
Male	113	47.1
Female	127	52.9
Total	240	100.0
Diagnoses:		
Diabetes	58	24.2
Hypertension	48	20.0
Mental illness (Schizophrenia, psychosis)	6	2.5
Hereditary disorder (sickle cell Disease, Asthma, epilepsy)	45	18.8
Peptic ulcer	22	9.2
Cancer	21	8.8
Heart disease	14	5.8
Arthritis	7	2.9
Stroke	13	5.4
Infections (eg PTB, HIV)	2	0.8
Burns	1	0.4
Liver cirrhosis	1	0.4
Missing system	2	0.8
Total	240	100.0
Duration of illness:		
1-5years	142	59.2
6-10 years	53	22.0
Above 10 years	45	18.8
Total	240	100.0
Self-management measures by patients:		
Self-care	7	2.9
Multiple measures (include Health care provider, family support, peer assistance, etc)	232	96.7
Missing system	1	0.4
Total	240	100.0

Table 2 shows the general characteristics of the nurses and the chronically ill patients. For professional qualification of the nurses, holders of single qualification constituted 33.75% while holders of multiple qualifications were 66.25% Male nurses were 21.25% while the females were 78.75%. 40.8% of the nurses had 2-5 years working experience, 24.6% had 6-10 years, while those with more than 10 years experience constituted 34.6%. Tertiary health institution constituted 59.6% while secondary level was 40.4%. 65% of the nurses were working in medical unit, 17.9% in surgical unit, 12.5% in OPD/Emergency unit, 3.8% in ICU and 0.8% in other units of the health institutions. For the clients/patients with chronic illnesses, table 2 shows that 47.1% were males and 52.9 were females; for medical diagnoses of the patients, 24.2% had diabetes mellitus, 20.0% had hypertension, while 2.5% had mental illness. 18.8% had hereditary disorders (like sickle cell disease, asthma and epilepsy), 9.2% had peptic ulcer, 8.8% had cancer, 5.8% had heart disease, 2.9% had arthritis, while 5.4% had stroke. 0.8% of the patients had infections (HIV and pulmonary tuberculosis) while 0.4% had burns and liver cirrhosis respectively. For duration of the clients' illnesses, 59.2% had their illnesses for a period of 1-5 years, 22% for 6-10 years while 18.8% for more than 10 years. For the self-management measures adopted by the clients, 2.9% adopted self-care while 96.7% included health care providers, family support and peer assistance in their self-management measures.

Table 3. Collaborative Health Professionals in the Integrated Management of Chronically ill Patients

Collaborative Team	Involvement	Frequency	Percent
Medical Doctor	Yes	240	100
Laboratory Scientist	Yes	214	89.2
	No	26	10.8
Physiotherapists	Yes	132	55.0
	No	108	45.0
Dieticians	Yes	181	75.4
	No	59	24.6
Radiographers	Yes	122	50.8
	No	118	49.2
Social Worker	Yes	98	40.8
	No	142	59.2
Psychologist	Yes	90	37.5
	No	150	62.5
Pharmacist	Yes	225	93.75
	No	15	6.25
Record Officer	Yes	239	99.6
	No	1	0.4

Valid N = 240

Table 3 shows that nurses had 100% (240) collaboration with medical doctors in integrated management of chronically ill patients. The extent of collaboration with laboratory scientists was 89.2% (214); 55% (132) collaboration with physiotherapists, 75.4% (181) with dieticians, 50.8% (122) with radiographers, 40.8% (98) with Social workers, 37.5% (90) with Psychologists, 93.75% (225) with Pharmacists, and 99.6% (239) collaboration with record officers.

Table 4. Extent of Health Assessment of the chronically ill patients by nurses

Variable	N	$\overline{X}$	SD
Health Assessment of Chronically ill patients by Nurses	240	3.0250	0.61769

NB: Mean measurement score for nurses health assessment of the patients was based on 4-point scale. Mean score <2 =poor; score 2= fair; score 2.5 = good; score> 2.5 = very Good/High

Table 4 shows that the 240 nurse respondents had mean of 3.0250 with SD of 0.61769 in their extent of health assessment of chronically ill patients

Table 5. Extent to which nurses render self-management support to their clients with chronic illness in integrated management of chronically ill patients.

Variable	N	$\overline{X}$	SD
Self-management support by nurses to clients with chronic illness	240	3.1017	0.57058

NB: The mean score was based on 4-point scale. Mean score<2= poor; score 2 =fair; score 2.5 = good, score> 2.5 = very good/high

In table 5 above, the mean for the extent of self-management support given to chronically ill patients by nurses in integrated management of the clients was 3.1017 with SD of 0.57058.

Table 6. Pearson Product moment (r) correlation between Health assessment and self-management supports given to chronically ill patients by nurses.

Variable	N	$\overline{X}$	SD	r	p-value	Level of significance
Health Assessment of patients	240	3.0250	0.61769	0.724**	0.000	0.01
Self-management support	240	3.1017	0.57056			

**Correlation was significant at 0.01 level.

Table 6 shows r correlational value of 0.724, p-value 0.000 for the relationship between health assessment and self-management support given by nurses to chronically ill patients. The result was significant at 0.01 level.

Table 7. Relationship of the interactions between the practice team in integrated management of chronically ill patients and nurses' optimization of the clients' therapy.

Variable	N	$\overline{X}$	SD	r	p-value	Level of significance
Interaction Between practice team	240	2.7212	0.59982	0.598**	0.000	0.01
Optimization of clients therapy	240	2.9806	0.51649			

**Correlation was significant at 0.01 level

In table 7, the r correlational value for the interaction between the practice team and nurses optimization of clients' therapy was 0.598 with p-value of 0.000. The result was significant at 0.01 level

IV. Discussion

Findings from the study indicate high mean (3.0250) for the extent of health assessment of chronically ill patients by nurses (table 4). Kozier et al (2004) stated that the purpose of assessment is to establish a database about the client's response to health concerns or illness and the ability to manage health care needs. Quality client assessment effects quality planning and intervention. Wagner et al (2001) stated that delivering high – quality chronic illness care demands planning and the coordinated actions of multiple caregivers.

The high mean (3.1017) of the self-management support given to the chronically ill patients by nurses in integrated management of the clients (table 5) is encouraging. Glasgow et al (2002) noted that self-management support is a key feature of the chronic care model which emphasizes the centrality of an informed, activated patient to productive patient-provider interactions. Zwar et al (2006) pointed out that patient self-management supports such as patient educational sessions, patient motivational counseling and distribution of educational materials promote patients' quality of life, health status, functional status, satisfaction with service, knowledge, service use and adherence to treatment. With self-management support, patients are trained in problem-solving, goal setting and use of evidence-based standardized interventions in chronic conditions such as diabetes, heart failure, hypertension and angina (Coster et al , 2000; Ara, 2004; McGillion et al, 2004; Rijken, Jones, Heijmans and Dixon, 2008).

Findings from the study indicate significant relationship between the health assessment and self-management support given to the chronically ill patients by nurses (r = 0.724; p-value = 0.000) (table 6). DeLaune and Ladner (2002) stated that the completeness and correctness of the information obtained during assessment are directly related to the accuracy of the steps that follow. This implies that accurate health assessment of the chronically ill patient has impact on the self-management support intervention to be adopted by the nurse. Crumbie (2005) pointed out that when making nursing assessment of the patient with chronic condition, there is need to consider the individual patient and alter the approach accordingly. According to Crumbie (2005), it is important to remember that the patient has the most important role to play as people who live with chronic condition do most of the work associated with managing the illness themselves.

Also, findings from the study indicate significant relationship between the interactions of the practice team and optimization of client's therapy by the nurses (r = 0.598; p-value =0.000) (table 7). The goals of chronic care are not to cure but to enhance functional status, minimize distressing symptoms, prolong life through secondary prevention and enhance quality of life in the patient (Grumbach, 2003) Nolte and Mckee (2008)stressed that these goals are unlikely to be accomplished by mere relationship between the individual patient and the physician, but by working in partnership with the patient and other health care personnel to optimize health outcomes. High-quality chronic illness care is characterized by productive interactions between the practice team and the patients (Wagner et al (2001). According to Wagner et al (2001) the practice team tries to optimize patient outcomes through a series of interactions during which they elicit and review data concerning patients' perspectives and other critical information about the course and management of the condition(s), help patients to set goals and solve problems for improved self-management, apply clinical and behavioural interventions that prevent complications, and optimize disease control and patient well-being and ensure continuous follow-up.

V. Conclusions

This study indicate high levels of health assessment and self-management supports provided to clients by nurses in integrated management of chronically ill patients; the study also shows significant correlations between the health assessment and self-management supports, as well as between the interactions among the practice team and optimization of the clients' therapy by nurses.

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