## Research Article

# Patients' Assessment of Pharmacists' Medication Counseling in a Psychiatric Hospital in Nigeria

**Ifeanyichukwu Offor[1,2] and Ehijie FO Enato[1*]**

[1]Department of Clinical Pharmacy & Pharmacy Practice, Faculty of Pharmacy, University of Benin, Benin City, [2]Ranbaxy (Nig) Ltd, PO Box 4452, Ikeja, Nigeria

## Abstract

**Purpose:** To assess the impact of an educational intervention on pharmacists' medication counselling practice, and evaluate the reliability of an instrument to assess medication counselling in a psychiatric setting.

**Methods:** The study was undertaken on a sample of 297 psychiatric patients. Pre- and post-intervention surveys were conducted immediately after the patients had been attended to at the hospital's outpatient pharmacy, using a self-administered questionnaire, comprising 4 components. Internal consistency of the questionnaire was computed using Cronbach's alpha. Differences between means or proportions of variables were evaluated using Student's t-test or Chi-square test, as appropriate.

**Results:** The study achieved a response rate of 89 and 92 % for pre– and post–intervention surveys, respectively. Cronbach's alpha reliability of the instrument was found to be 0.74. The mean values for the different components evaluated during the pre- and post–intervention surveys were: Needs assessment, $1.89\pm 0.76$ and $2.58 \pm 0.61$; Precaution and warning, $1.50 \pm 0.67$ and $2.15 \pm 0.63$; Managing therapy, $1.87 \pm 0.89$ and $2.46 \pm 0.78$, and Communication, $2.23 \pm 0.77$ and $2.69 \pm 0.62$, respectively. The post–intervention results were significantly higher in all the components ($p < 0.05$).

**Conclusion:** The educational intervention provided for pharmacists resulted in an improvement in patient counselling. The survey instrument achieved a fairly satisfactory reliability result in a psychiatric setting. Efforts to sustain this intervention are recommended.

**Keywords:** Assessment, Patient counselling, Pharmacists, Psychiatric setting

*Corresponding author:* **E-mail:** *enatoefo@uniben.edu, ehise2002@yahoo.com*

# INTRODUCTION

Approximately 450 million persons in the world are said to be suffering from mental or neurological disorders or from psychological problems such as those related to alcohol and drug abuse [1]. Among the several treatment options available for mental illnesses, pharmacotherapy plays a central role. In clinical practice, the use of drugs with demonstrated efficacy in psychiatric disorders has become widespread since the mid - 1950s[2]. However, among the greatest challenges in pharmacotherapy of mental illnesses, medication adherence, anti-psychotic medication availability, cost and adverse effects, including medication errors have the greatest potential to compromise therapeutic outcomes [3,4].

Despite efforts at developing newer antipsychotic medications with broader efficacy and improved side effect profile, the issue of adherence and accessibility have continued to compromise patients' therapeutic outcomes[5]. In particular, adherence remains a major concern in pharmacotherapy of mental illnesses, especially among schizophrenic patients. Non-adherence with antipsychotic medications has been shown to be a robust predictor of relapse, hospitalizations, and poorer long-term functional outcomes, including greater likelihood of being arrested, of being violent, and of becoming a victim of violent crimes [6].

However, studies have shown that services provided by pharmacists such as medication counselling, therapeutic monitoring and medication supply etc, can potentially optimize the use of medications for mentally ill patients [7,8]. For example, Canales *et al* [8] reported that the provision of clinical pharmacy services to inpatients in an acute care psychiatric facility was associated with improvements in rating-scale scores for clinical response and for drug-induced extrapyramidal symptoms. Although, pharmacists believe that they are the health

care professionals most qualified to counsel patients on medications [8,9], patient medication counselling by the pharmacist may be limited by factors such as poor pharmacist-patient interaction during clinical encounters, pharmacists' lack of time, inadequate staff etc [9, 10], especially in a psychiatric setting. Indeed, Owusu-Daar *et al* (2010) reported that community and hospital pharmacists in Ghana provide minimal mental health care services to their patients [11]. However, it has consistently been advocated that pharmacists become more patient-centered in the provision of pharmaceutical care in order to meet their professional responsibilities [12]. The pivotal role of pharmacists in reducing the incidence of both medication-related errors and drug-related illness in general is noted in literature [13]. Patient counseling is an important part of pharmacists' professional services [14]. By providing information to consumers with prescriptions, pharmacists appear to be fulfilling the minimum practice standards [15]. The objectives of this study, therefore, were to evaluate patient counselling provided by pharmacists for psychiatric patients, assess the impact of an educational intervention on pharmacists' medication counselling behaviour, and evaluate the reliability of an instrument to assess medication counselling in a psychiatric setting.

# METHODS

## Study location

The study was carried out at the outpatient section of the Pharmacy Department, Psychiatric Hospital, Uselu, Benin City, Nigeria. The study site is a tertiary hospital, which serves as a referral center for patients from Edo State (of which Benin City is the capital) and neighboring states. It also serves as a teaching hospital for the training of undergraduate and postgraduate health professionals in the state. A majority of patients attending this healthcare facility have mood disorders or schizophrenia.

## Data collection process

Approval for the study was obtained from the hospital management prior to the commencement of the research. Data collection was carried out using a self-administered questionnaire, which was designed by the investigators from review of literature, informal discussion with some patients and health professional, and personal professional experiences. One of the investigators, EFOE, has been actively involved in the supervision of clinical clerkship of pharmacy students in psychiatry for several years and was also highly instrumental to the development of pharmaceutical care model in this setting. In particular, items in the questionnaire were developed using the United States Pharmacopoeia (USP) Medication Counselling Behaviour Guidelines (MCBG)[16] as a guide. The USP MCBG has been used to assess patient medication counselling by pharmacists, and it was found to be a flexible tool, which can be modified in several ways without threatening its validity and reliability [16].

The developed questionnaire was validated by first conducting a pilot-test on a sample of 25 patients. Thereafter, slight modification was further carried out on it, based on the results from the pilot test. The final version of the questionnaire used for the study had two parts. The first part was designed to collect socio-demographic information from the respondents. The second part collected information on pharmacist's medication counselling behaviour. There were 34 items with 3-point response scale, 3 to 1 (highest to lowest), in the second part of the questionnaire, which covered four components (needs assessment, precaution and warnings, management of treatment, and communication). These components were thought to be relevant in pharmacists' medication counselling. The same questionnaire was administered at both pre - and post - intervention studies.

## Study participants

Psychiatric out-patients who were mentally stable, as judged by the clinicians' assessment, and were able to read and write expressions in English Language participated in the study. Patients were recruited consecutively immediately after they had been attended to at the hospital's pharmacy.

## Intervention

Three registered and 8 intern pharmacists who were routinely involved in outpatient pharmacy services in the hospital, the investigators, and 3 pharmacy students participated in this session. Prior to the intervention, data on pre-intervention survey were analyzed, and the results were made available for discussion. The intervention commenced with 40 minutes of a lecture delivered by the investigators. The lecture was based on the USP MCBG[16], review from other literatures, and clinical experience in psychiatric setting. This was followed by two hours of interactive session among the participants on the same day. In addition, lecture materials on patient counselling were distributed to the participants, and the hospital pharmacists were encouraged to continue discussion on the topic in next couple of days that followed, prior to the post-intervention study.

## Data analysis

Data were entered into Microsoft Excel Spreadsheet, and cross checked for accuracy. Thereafter, the data were loaded into SPSS version 11.0 or Graph Pad Instat® version 2.05a for further analysis. Internal consistency of the questionnaire was determined by computing Cronbach's alpha, while Factor analysis was performed using Principal Components analysis with Varimax rotation. Descriptive statistics on sample characteristics and questionnaire items were computed, including means, standard deviation, and frequency distributions. Differences between means were calculated

using Student's *t* – test, while the differences between proportions were determined by means of Chi - square test. P-values less than 0.05 were considered significant.

## RESULTS

A total number of 200 patients were approached during the pre-intervention stage. Of this number, 15 were excluded because they were considered not mentally stable to give reliable responses, based on clinicians' judgment. Of those who were selected, 7 refused to participate in the study. The 178 respondents who completed the questionnaire were used for the pre-intervention analysis, giving a response rate of 89 % (178/200). Similarly, the response rate for the post-intervention was found to be 92 % (119/130).

A majority of the respondents at the pre-intervention stage were 30 to 39 years old (30%), male (54%), single (50%), civil servants (28%), and 50% had secondary education. On the other hand, a majority of the respondents at the post-intervention survey were 40 to 49 years old (27%), male (56%), married (74%), unemployed (35%), and had post-secondary education (49%). However, there were no significant differences in the socio-demographic profiles of the respondents at both pre- and post – intervention survey, except for marital status and occupation (Table 1).

The Cronbach's alpha for all the 34 items was found to be 0.74. The Factor loading for the four sub-scales ranged from 0.49 to 0.73 (Component 1), 0.51 to 0.98 (Component 2), 0.45 to 0.77 (Component 3), and 0.22 to 0.67 (Component 4).

**Table 1:** Socio-demographics of the respondents

| Variable | Pre-intervention (n=178) Number (%) | Post-intervention (n=119) Number (%) | *P*-value* |
|---|---|---|---|
| **Age (years)** | | | |
| <20 | 11(6.20) | 3(2.50) | |
| 21-29 | 40(22.50) | 20(16.80) | |
| 30-39 | 55(30.90) | 31(26.10) | 0.21 |
| 40-49 | 35(19.70) | 32( 26.90) | |
| 50-59 | 27(15.20) | 22(18.50) | |
| ≥ 60 | 10(5.60) | 11(9.20) | |
| **Sex** | | | |
| Male | 97(54.50) | 67(56.30) | |
| Female | 76(43.70) | 52(43.70) | 0.97 |
| **Marital status** | | | |
| Married | 88(49.44) | 88(73.90) | |
| Single | 90(50.56) | 31(26.10) | <0.05 |
| **Occupation** | | | |
| Farmer | 9(5.10) | 10(8.40) | |
| Trader | 37(20.80) | 18(15.10) | |
| Civil servant | 49(27.50) | 24(20.20) | 0.04 |
| Student | 33(18.50) | 26(21.80) | |
| Unemployed | 40(22.50) | 41(34.50) | |
| Others | 5(2.80) | 0(0.00) | |
| **Level of education** | | | |
| Primary | | | |
| Secondary | 14(7.87) | 6(5.00) | |
| Post-secondary | 89(50.00) | 55(46.20) | |
| | 75(42.13) | 58(48.70) | 0.42 |

*Chi-square test

The mean (± s.d) values of pre- and post – intervention scores for the four components were found to be 1.89 ± 0.76 and 2.58 ± 0.61 (Component 1), 1.50 ± 0.67 and 2.15 ± 0.63 (Component 2), 1.87 ± 0.89 and 2.46 ± 0.78 (Component 3), and 2.23 ± 0.77 and 2.69 ± 0.62 (Component 4), respectively. There were significant differences between the pre – and post – intervention scores, with the post–intervention results significantly higher in all the components ($p < 0.05$) (Tables 2 - 5).

**Table 2:** Needs assessment

| Item | Pre-intervention (n=178) Mean score ±SD | Post-intervention (n=119) Mean score ±SD | P-value* |
|---|---|---|---|
| 1. Did your pharmacist introduce himself as a health care professional (or pharmacist) before he discussed with you? | 1.57±0.78 | 2.27±0.71 | <0.05 |
| 2. Did your pharmacist verify your name, to find out if you were the owner of the prescription or case file before you? | 2.56±0.65 | 2.62±0.60 | 0.42 |
| 3. Did your pharmacist provide privacy during his discussion with you? | 2.54±0.67 | 2.53±0.61 | 0.90 |
| 4. Did your pharmacist review your prescription / case note prior to his discussion with you? | 2.06±0.79 | 2.58±0.62 | <0.05 |
| 5. Did your pharmacist explain the purpose of the discussion with you? | 1.59±0.76 | 2.37±0.73 | <0.05 |
| 6. Did your pharmacist try to find out if you were on any other medications at the moment? | 1.60±0.86 | 2.65±0.53 | <0.05 |
| 7. Did your pharmacists present facts and concepts about your medications in a logical order? | 1.65±0.70 | 2.84±0.49 | <0.05 |
| 8. Did your pharmacist find out if you have history of any chronic diseases like diabetes or hypertension in your family? | 1.82±0.81 | 2.71±0.56 | <0.05 |
| 9. Did your pharmacist find out if you have any drug or food allergies? | 1.62±0.84 | 2.67±0.64 | <0.05 |
| **Total** | **1.89±0.76** | **2.58±0.61** | **<0.05** |

*P-value < 0.05 considered significant

**Table 3:** Precautions and warnings

| Item | Pre-intervention (n=178) Mean score ±SD | Post-intervention (n=119) Mean score ±SD | *P*-value |
|---|---|---|---|
| 10. Did your pharmacist explore any potential problems associated with your medications, (e.g. affordability)? | 1.60±0.82 | 2.36±0.79 | <0.05 |
| 11. Did your pharmacist discuss any significant side effects of your medications with You? | 2.02±0.93 | 2.82±0.57 | <0.05 |
| 12. Did your pharmacist warn you not to take any drug, alcohol or herbal products concurrently with your medications? | 1.83±0.88 | 2.14±0.96 | <0.05 |
| 13. Did your pharmacist discuss any drug-drug, drug-disease or drug-food interactions of your medications with you? | 1.52±0.81 | 1.96±0.99 | <0.05 |
| 14. Did your pharmacist explain to you in precise terms what to do when you miss a dose? | 1.28±0.63 | 2.70±0.72 | <0.05 |
| 15. Did your pharmacist tell you the activities to avoid when you are on your medications? | 1.49±0.80 | 2.25±0.94 | <0.05 |
| 16. Did your pharmacist help you generate solutions to some of the potential problems of your medication? | 1.36±0.71 | 1.53±0.60 | <0.03 |
| 17. Did your pharmacist tell you how to prevent and/ or manage side effects of your drugs if they occur? | 1.24±0.58 | 1.54±0.83 | <0.05 |
| **Total** | **1.50±0.67** | **2.15±0.63** | **<0.05** |

## DISCUSSION

The instrument used for the evaluation demonstrated a fairly satisfactory level of reliability, with alpha of 0.74, indicating that with further refinement, particularly at the subscale level, the questionnaire could become useful for routine assessment of pharmacists' medication counselling practices in a psychiatric setting. A minimum value of 0.7 is needed to ascertain the reliability of the research instrument [17]. In all the components of medication counselling, patients rated pharmacists higher during post-intervention phase when compared to pre-intervention survey, an indication that the educational session provided for the pharmacists was effective in modifying their counselling behaviours. This, in addition, to the enthusiasm shown by the participating

**Table 4:** Management of the treatment

| Item | Pre-intervention (n=178) Mean score ±SD | Post-intervention (n=119) Mean score ±SD | *P*-value |
|---|---|---|---|
| 18. Did your pharmacist discuss the storage conditions and other ancillary instructions of your medications with you? | 2.07±0.94 | 2.42±0.82 | <0.05 |
| 19. Did your pharmacist tell you how long it would take before your drugs start showing effects? | 2.13±0.91 | 2.06±0.89 | <0.51 |
| 20. Did your pharmacist tell you when to come back to refill your medications? | 1.87±0.90 | 2.31±0.88 | <0.05 |
| 21. Did your pharmacist emphasize on the need for you to complete your medications? | 1.83±0.94 | 2.61±0.77 | <0.05 |
| 22. Did your pharmacist assist you in developing a plan to incorporate your medication regimen into your daily routine? | 1.58±0.83 | 2.30±0.89 | <0.05 |
| 23. Did your pharmacist explain how, when and how long you would use your medications? | 1.89±0.92 | 2.87±0.47 | <0.05 |
| 24. Did your pharmacist give you an opportunity to ask questions or express your opinions? | 1.51±0.79 | 2.75±0.59 | <0.05 |
| 25. Did your pharmacist try to find out if you understand the advice he gave you by asking you to repeat them? | 1.74±0.90 | 2.04±0.99 | <0.05 |
| 26. Did your pharmacist ask you if you needed additional information? | 1.99±0.91 | 2.54±0.82 | <0.05 |
| 27. Did your pharmacist maintain control and direction of your conversations without being distracted by phone calls, TV, radio or other staff members? | 1.99±0.85 | 2.34±0.90 | <0.05 |
| 28. Did your pharmacist ask you good open-ended questions (i.e. questions beginning with 'why', 'how', 'when', 'where'? | 1.95±0.85 | 2.34±0.90 | <0.05 |
| **Total** | **1.87±0.89** | **2.46±0.78** | **<0.05** |

**Table 5:** Communication

| Item | Pre-intervention (n=178) Mean score ±SD | Post-intervention (n=119) Mean score ±SD | *P*-value |
|---|---|---|---|
| 29. Did your pharmacist provide you with accurate information? | 1.75±0.83 | 2.78±0.60 | <0.05 |
| 30. Did your pharmacist tell you the name and indications of your medications? | 1.95±0.89 | 2.45±0.83 | <0.05 |
| 31. Did your pharmacist maintain the following communication skills: | 2.19±0.83 | 2.42±0.87 | <0.02 |
| (i).Good eye contacts? | 2.36±0.74 | 2.77±0.53 | <0.05 |
| (ii). Audible voice, tone and good pace? (iii). Good posture and gestures? | 2.55±0.67 | 2.82±0.54 | <0.05 |
| (iv). Adequate space between him and you? | 2.58±0.67 | 2.92±0.38 | <0.05 |
| **Total** | **2.23±0.77** | **2.69±0.62** | **<0.05** |

pharmacists and the willingness to immediately implement the knowledge and skills acquired during the educational session is laudable. This finding is similar to a report of an earlier initiative in the locality, where after extensive training on pharmaceutical care, the pharmacists felt highly motivated toward its implementation in their health facility [18].

Though psychiatry clinical pharmacy practice and research is limited worldwide, and almost completely not existent in Nigeria; however, we believe that huge opportunities abound for the practitioners. For example, psychiatric pharmacists have the potential to ensure optimal pharmacotherapeutic outcomes for their patients [10, 11, 19], in addition to providing patient counselling and ensuring prompt access to good quality medications. Through research and training for the practitioners, psychiatric pharmacy practice in the country could be developed to a level comparable to what is obtainable in the developed countries. Psychiatric pharmacy addresses the pharmaceutical care of

patients with psychiatric-related illnesses [20].

To the best of our knowledge, this study appears to be first of its kind in the country, addressing an almost neglected and often completely unmentioned area of pharmacy practice. We believe, though it could be argued otherwise, that irrespective of the nature of the psychiatric illness itself, patients should have the opportunity of evaluating the quality of care that they receive. Nabeel *et al*, in a similar study in Kuwait, reported that depressed patients expressed their eager to receive education about medications from pharmacists [21].

**Limitations of study**

Nonetheless, we recommend that data from the study should be treated as they apply to psychiatric patients whose disorders are completely different from those of other patient populations. In addition, some limitations of this study are worth mentioning. The research instrument, which was not

validated against standard generic instrument such as SF-36. Secondly, the use of a 3-point response scale may have impacted negatively on the internal consistency of the questionnaire items. Finally, one cannot say with certainty the level of reliability of information provided by the psychiatric patients.

However, these limitations are not likely to have greatly affected the overall result, as the same instrument was used for both pre- and post intervention studies on the respondents, which were drawn from the same population. Furthermore, we ensured that only patients on chronic antipsychotic drug therapy with significant stability of their conditions were recruited in order to improve on the quality of data obtained.

## CONCLUSION

The research instrument achieved a fairly satisfactory reliability result in a psychiatric setting. The educational intervention provided for pharmacists resulted in an improvement in patient counseling for psychiatric patients. Efforts should be made to ensure training and retraining of pharmacists in psychiatric pharmacy practice in Nigeria.

### CONFLICT OF INTEREST

We declare no conflict of interest. The views expressed in this manuscript are solely those of the authors as they are in no way intended to represent the position of the management of Psychiatric Hospital, Uselu, Benin City, Nigeria, where the study was carried out.

## ACKNOWLEDGMENTS

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