Original Research Article

Sleep Disturbance and Psychopathology in Caregivers of Patients Suffering from Schizophrenia

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ABSTRACT

Background and Objectives: The issue of family burden in respect of mental disorders takes on a much greater importance when considering a developing country such as Nigeria where families form the most important system for caring for the mentally ill patients including schizophrenia. With the huge burden on caregivers, they are at a high risk of developing psychopathology and sleep disorder. This study was designed to test this hypothesis.
Materials and Methods: Three groups of subjects were used for this study. One group was made up of twenty – six consecutive patients receiving treatment for schizophrenia in our psychiatric outpatient clinic. The other group consisted of their caregivers while the third group consisted of normal healthy control subjects. The Pittsburgh Sleep Quality Index (PSQI) was administered to all the subjects while the 30- item General Health Questionnaire (GHQ – 30 was administered to the relatives and the control group.
Results: The relative group had poorer sleep quality compared to the control and also poorer sleep quality compared to the patients. The results further showed that the patients had poorer sleep quality when compared against the control group. Furthermore there was a significantly greater general psychopathology among the relatives when compared with the control group.
Conclusion: Caregivers of patients suffering from schizophrenia are at a high risk of having poor sleep quality and developing psychopathology. They indeed need help

Keywords: Sleep quality; schizophrenia; caregiver burden; psychopathology.

INTRODUCTION

Schizophrenia affects a variety of brain functions such as thinking, feeling, perception and actions among others. [1] The symptoms of the disease develop sometimes gradually over a period of time or appear abruptly and vary from one individual to another. The course of the disease is usually in cycles of remissions and relapses. Symptoms generally involve loss of contact with objective reality, with the patient experiencing hallucinations, delusions and disorganized behavior. In a good number of cases there is a decline in intellectual functioning and lack of the capacity for social functions. [1] These usually lead to personality change and cognitive impairment [1] The disorder is said to affect about 1% of the population. [1-2]

The management of schizophrenia is expensive in terms of pharmacotherapy and other aspects of care. Caring for patients with schizophrenia constitutes a great burden to the relatives of such patients. [3-5] Burden of care is a complex construct, which includes not only the physical and financial impact but also, the shame, embarrassment and other psychological discomfort which the relatives experience. [6] Burden of care has been largely classified

into objective burden (taking care of the patient's daily needs and activities) and subjective burden which refers to the caregiver's perception of burden. [7]

Caregivers may experience work overload, sleep disturbance, financial difficulties and lack of time to attend to their personal needs. [1] Stigmatization and social isolation by neighbours, referred to as environmental burden are also parts of the problems. [1] In a good number of cases caregivers assume almost the totality of the patient care. [8-9]

In the light of the enormous task faced by caregivers of patients suffering from schizophrenia this study was designed to test the hypothesis that such relatives are at a high risk of developing psychopathology and sleep disorder.

MATERIALS AND METHODS

The Setting of the Study and Ethical Consideration

The proposal for this study was approved by The Ethics and Research Committee of the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile – Ife, Nigeria. The participants were three groups of subjects: (a) A group of patients seen in the psychiatric outpatient clinic, OAUTHC who were receiving treatment for schizophrenia and whose diagnoses were based on the criteria of the 10th edition of the International Classification of Diseases (ICD- 10) by the World Health Organization (WHO); (b) A group of subjects who were the relatives of the patients and who indeed were the caregivers for those patients; (c) The third group of subjects consisted of healthy individuals who were recruited from the staff of the OAUTHC and who made up the control group. Written informed consent was obtained from all those who took part in the study.

Sampling

Twenty – six consecutive patients receiving treatment for schizophrenia were recruited into the study. The patients were

those who had received treatment for at least a year and had been compliant with their appointment and medications for at least three months prior to the study. Some of them had been admitted in the past but none was admitted in the previous one year. The patients were relatively stable in their clinical state. For each of the patients a relative who took the greatest responsibility of care was considered the caregiver and recruited into the study. In some cases relatives who provided the major financial support for the patients were different from those who resided with the patients. In such cases those who resided with the patients were recruited as the patients' relatives because they were considered more emotionally involved and more prone to poor sleep quality and psychopathology than those whose functions were largely financial. The relatives were spouses, parents or siblings. The third group of subjects was the control group. They were recruited from the staff of OAUTHC.

Instruments

The Pittsburgh Sleep Quality Index (PSQI) is a self-report questionnaire that is used to measure sleep quality. It measures sleep quality over a month period. [10] The instrument which has 19 items is a self-report questionnaire which gives 7 components or subscales: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. Each of these components is rated on a 0-3 scale. Scores from the 7 components sum up to give a Global Sleep Quality Score. The range of Global Score is 0-21, higher score indicating worse sleep quality. Subjects with Global Scores greater than 5 are poor sleepers while those who score 5 and below are good sleepers. [10]

The 30 – item version of The General Health Questionnaire (GHQ – 30) was used in this study. The General Health Questionnaire is a screening instrument to detect general psychological disorders. The scale asks whether the individual has

experienced a particular symptom recently. Each question is followed by four options as follows: less than usual, no more than usual, rather more than usual, or much more than usual. There are two common scoring methods, bi-modal (0-0-1-1) and Likert scoring styles (0-1-2-3). Depending on the scoring method used, the GHQ - 30 gives a score range of 0 to 30 or 0 to 90, with higher scores indicating greater psychopathology. When the 0- 0- 1- 1 scoring system is used, the cutoff point for identifying "cases" for the GHQ – 30 is a score of ≥5, that is to say that anybody who scores at least 5 has a general psychopathological state. The instrument does not make a categorical diagnosis. Specific diagnoses are made based on other instruments. With the Likert scoring system a score in the range of 0-24 indicates the individual is free from psychological state. In the current study, both the bi- modal system and the likert scoring system were used. The bi- modal system was used for case identification while the the Likert scoring was done because it gives a preferred distribution for parametric statistical analysis.

Procedure

The subjects were required to provide information on their age, sex and marital status. The Pittsburgh Sleep Quality Index (PSQI) was applied on the control group, the relatives of the patients and the patients to evaluate their sleep quality. General psychopathology was assessed in the control group and the relatives of the patients using GHQ – 30. The patients having had specific diagnosis did not need assessment for general psychopathology.

Data Analysis

The data were analyzed to determine the sociodemographic characteristics of the subjects in the different groups. Differences in proportions and percentages were tested for significance with Chi – Square (χ^2) for categorical variables. For continuous variables, the differences were tested for significance using t test (in the case of two groups) and by analysis of variance

(ANOVA) in the case of three groups (SAS Institute, Cary, NC). Post hoc test (Student Newman-Keuls) was carried out in the case of ANOVA to determine the source of a significant effect or interaction. In all cases $p < 0.05$ was taken as significant.

RESULTS

Sociodemographic characteristics of the subjects

Out of the twenty – six patients who were recruited into the study 23 (88.5%) provided complete data. This was also the case with their relatives (88.5 % response rate). Of the forty – six members who made up the control group, 41(89.1%) provided complete data. All those who provided incomplete data were excluded from the analyses. Thus, effectively there were 41, 23 and 23 subjects respectively in the control group, relatives and patients. The mean age of the control group was 31.3 years (SD = 8.0) with a range of 18 – 45 years. The relatives of the patients had a mean age of 30.7 years (SD = 9.6) with a range of 21 – 55 years. The patients had a mean age of 35.0 years (SD = 8.2) and the range was 19 – 51 years. Analysis of variance (ANOVA) showed that the three groups were not significantly different from one another in their age distribution [F (2, 84) = 1.78, p = 0.18]. There were 21, 12 and 10 males respectively in the control, relative and patient groups while there were 20, 11 and 13 females respectively in the control, relative and patient groups. Chi – Square showed that the three groups did not differ significantly in their sex distribution (χ^2 = 0.45, df = 2, p = 0.80). In terms of their marital status, 23 (56.1 %), 12 (52.2 %) and 5 (21.7 %) members of the control, relative and patient groups respectively were married while 18 (43.9%), 11(47.8 %) and 18 (72.3%) members of the control, relative and patient groups respectively were not married (single, divorced, separated, widowed). The patients were obviously different in this regard as majority of them were not married (χ^2 = 7.49, df = 2, p <0.05).
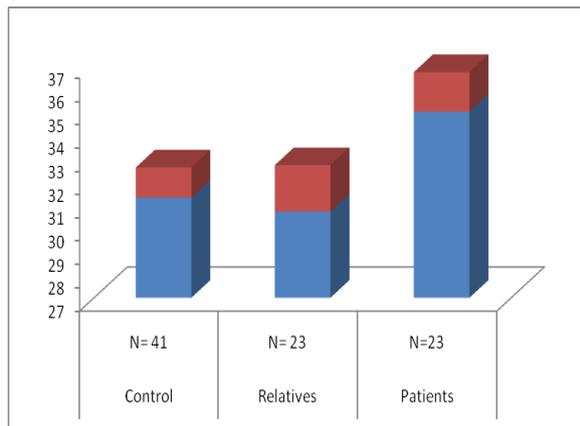
Figure 1: The mean age distribution of the subjects

The upper part of each bar is the standard error of the mean (sem). For the control sem is 1.3; for the relatives it is 2 while for the patients it is 1.7
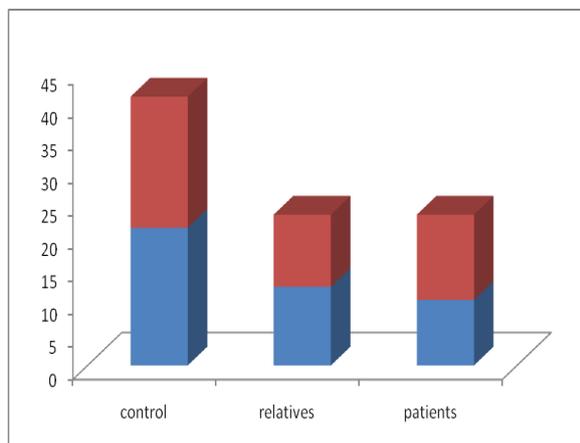

Figure 2: Sex distribution of the subjects

The upper portion of each bar represents the females while the lower portion represents the males.
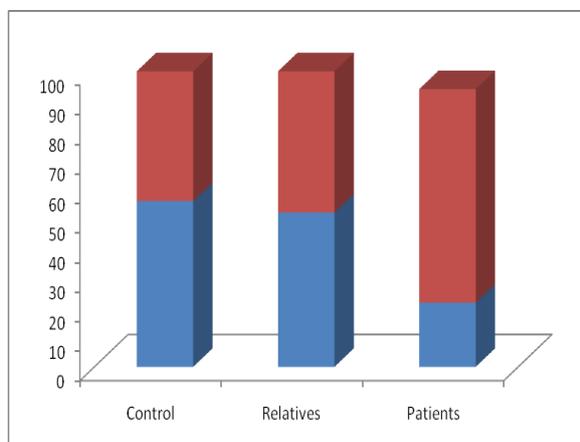

Figure 3: Distribution of the subjects by marital status

The upper portion of each bar represents the percentage of those who are not married while the lower portion represents the percentage of those who are married.

Measures of sleep quality and general psychopathology

On the sleep quality scale, the range of scores for the different groups was 3 – 11 (control), 3 – 18 (relatives) and 3 – 17 (patients). Twelve out of the 41 (29.3 %) in the control group, 17 out of the 23 relatives (74 %) and 10 out of the 23 patients (43.5 %) had poor sleep quality (PSQI score > 5). The prevalence rate of poor sleep quality is highest in the group of relatives. The respective mean scores for the control, relative and patient groups were 5.2 (SD = 2.0), 9.7 (SD = 4.9) and 7.5 (SD = 4.6). ANOVA showed a statistically significant difference among the groups [F (2, 84) = 11, p < 0.001]. Post hoc test using Student Newman-Keuls test showed that the relative group had poorer sleep quality compared to the control and also poorer sleep quality compared to the patients. It further showed that the patients had poorer sleep quality when compared against the control group. These are shown in Figure 4.
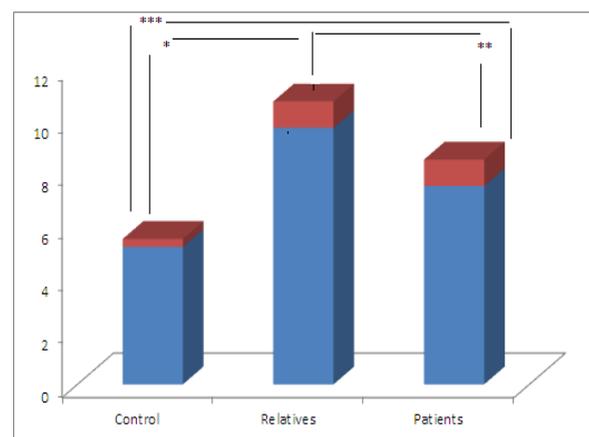

Figure 4: Scores of the subjects on The Pittsburgh Sleep Quality Index (PSQI)
Values are expressed as mean ± sem
* Relatives had significantly poorer sleep quality compared to the control
** Relatives had significantly poorer sleep quality compared to the patients
*** Patients had significantly poorer sleep quality compared to the control

In terms of general psychopathology, using the bi – modal scoring on the GHQ – 30, eleven out of the 41 members in the control group (26.8 %) and 17 out of the 23 relatives (74.0 %) were identified as cases (GHQ – 30 score ≥ 5). Thus there was a much greater prevalence of general psychopathology among the relatives of patients suffering from schizophrenia compared with a control group. The range of scores for the two groups were 0 – 12 (control) and 2 – 22 (relatives).Using the Likert scoring system, the range of scores for the two groups were 1 – 34 (control) and 7 – 63 (relatives). The respective mean scores for the control and relative groups were 11.1 (SD = 9.0) and 26.9 (SD = 17.0).Analysis using t - test showed that there was a significantly greater general psychopathology among the relatives when compared with the control group [t (62) = - 4.92, p < 0.001].These are illustrated in Figure 5
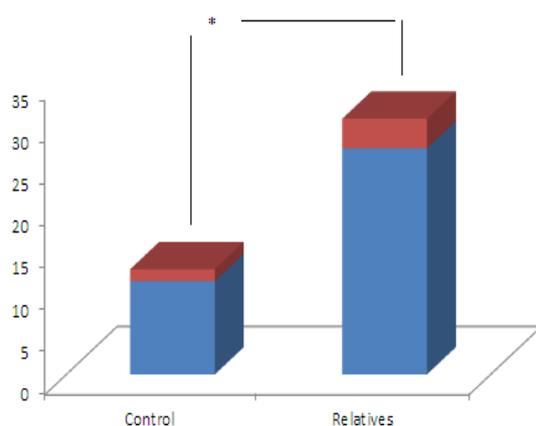

Figure 5: Scores on General Psychopathology
Values are expressed as mean ± sem
* Relatives had significantly greater psychopathology compared to the control

DISCUSSION

It is striking that the relatives of patients in this study had poorer sleep quality compared to the patients. It shows the degree of burden they bear on behalf of their patients. It has been noted that sometimes the relatives or caregivers assume almost the totality of the patient care. [8-9] It can be imagined that a caregiver will routinely do the work of at least two

people and this is not a dignified assignment.

Psychopathology is often associated with sleep disorders. It is therefore not surprising that the relatives also had a high degree of general psychopathology. With poor sleep quality and general psychopathology it is not surprising that there have been cases of documented fatigue or burnout [1] among caregivers and also increased time loss from work, poor quality of life and increased use of psychotropic drugs. [11]

In the Nigerian situation where families form the most important system for caring for the mentally ill patients such as schizophrenia, the development of the disorder in any member of the family can be said to mean woe for the whole family. With the huge burden on caregivers, it is difficult if not impossible for them to pay attention to other areas of life. The intervention by the Government and Non-Governmental Organizations is solicited as this will make a huge difference in the life of these patients and their relatives.

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