

## The prevalence of isolated sleep paralysis among a sample of Nigerian civil servants and undergraduates

Jude U. Ohaeri

*Department of Psychiatry, University College Hospital, Ibadan, Oyo State, Nigeria*

### Summary

The study investigated the prevalence of isolated sleep paralysis (ISP) among workers; and the relationship between examination stress and ISP among 183 undergraduates in the week of examination, compared with 61 control students. The correlation between ISP experience and psychological distress and distressing life conditions was explored using Goldberg's General Health Questionnaire (GHQ-12) and a life events scale. It was found that 153 (35.5%) subjects admitted having ISP at least twice in the past year. There was no significant difference in prevalence between workers and students. There was non-significant tendency for students under examination stress to report higher frequencies of ISP. ISP was significantly associated with GHQ-12 and life events scores. The findings are similar to African-American reports. An illustrative case was cited to support the psychoanalytic view of ISP as a manifestation of an inhibition that serves to ward off forbidden impulses. It is hoped that the awareness of ISP promoted by these studies will empower therapists to help people who suffer from the psychic distress associated with ISP whilst demystifying the enigma of ISP among those who seek help at religious faith healing centres, where supernatural beliefs concerning ISP are encouraged.

### Résumé

Cet étude, fait une investigation de la prévalence des cas isolés de la paralysie de sommeil (ISP) chez 187 travailleurs, et la relation entre le stress des examens et l'ISP parmi 183 étudiants du premier cycle Universitaire, pendant la semaine des examens, comparé à 61 autres étudiants considérés comme contrôles. La corrélation entre l'ISP, la détresse psychologique et les conditions de vie sous détresse, a été exploré utilisant le Questionnaire de santé général de Godenberg (GHQ-12) et les événements survenus dans la vie. Il a été trouvé que 153 (35.5%) des personnes admises pour l'étude reconnaissent avoir eu l'ISP du moins deux fois l'année précédente. Il n'y a pas eu de différence significative dans la prévalence de l'ISP entre les étudiants et les travailleurs. Il y a eu une différence non significative dans la tendance de rapporter une fréquence des cas ISP chez les étudiants. L'ISP a été associée de manière significative au GHQ-12 et le taux d'événements survenus dans la vie. Les résultats trouvés ici sont similaires à ceux des Africain-Américain. Un cas illustratif a été cité, afin de supporter la vue psychoanalytique de l'ISP comme la manifestation d'une inhibition qui sert à parer des impulsions interdites. Il est à espérer que la conscience de l'existence de l'ISP promu par ces études, donnera plus de tonus à ceux qui traitent les ISP. Cette étude vise aussi à aider les gens qui souffrent de détresse psychique associée à l'ISP, tout en démystifiant l'engime de l'ISP, parmi ceux qui cherchent de l'aide dans le centre de guérison religieux, où les croyances surnaturelles à propos de l'ISP sont encouragées.

### Introduction

Isolated sleep paralysis (ISP) is defined as a condition occurring either while waking from sleep or falling asleep, characterized

by feeling paralyzed for several seconds or minutes, and is often accompanied by hypnogenic hallucinations. The individual is aware of events during the episode. Once the episode of paralysis passes, the individual often sits up with a start and experiences symptoms of anxiety, only to realize that the perception of danger was false [1].

Preliminary studies of isolated sleep paralysis (ISP) among medical students [2] and student nurses [3] have shown that this phenomenon is quite as common in such selected populations in Nigeria as in developed countries [3-7]. The findings of these preliminary studies made us aware of the role which fears about the supernatural causation of ISP play in psychiatric symptomatology among our patients [8]. Inspired by these works, we have made personal contact with members of the general population on their experience of ISP. The impression we gathered was that the enigma surrounding the experience of ISP is distressing and many apparently healthy people either endure silently, or seek help from religious faith healers in the firm belief that ISP is caused by "spiritual" problems for which medical doctors have no answer.

Our impression that many people in the general population are troubled by ISP, and are either not receiving attention, or are having this problem attended to by faith healers, is given support by the following experiences. In the assessment interview with clients of a pentecostal faith healing clinic run by a general medical doctor in Ibadan, respondents were requested to give details about previous experiences of ISP, among other items. Also in our interview with the Reverend Father of another highly popular faith healing ministry in Ibadan, the phenomenon of ISP was described as "oppression" said to be consequent on visitation by "evil spirits"; and is usually treated by the religious practice loosely termed "deliverance".

It became clear to us that fairly well understood physiological phenomenon [9,10], which is amenable to psychological treatment [8], is being mystified in the general community; and in particular, given the power that these faith healers have on the behaviour of our people [11,12], there is need to throw scientific light on ISP.

Initial studies involved 164 medical students [2] and 95 student nurses [3], so we thought it useful to widen the base of these studies by studying another group in the general population, namely civil servants.

In addition, we sought to investigate the general impression that ISP is associated with ongoing stress [13], by studying undergraduates in the social sciences in the week of sessional examinations, compared with first year students who were not undergoing examinations.

### Method

Subjects completed a questionnaire consisting of items on ISP and the pattern of dream experiences, and the factors associated with these phenomena. The relationship of the experience of ISP with various factors was explored by including: items on socio-demographic variables (particularly religious and educational background); 7 items on life events experienced in the past 1 year (yes/no, responses); frequency of dreams in the past 3 months (no/once or twice/three to five times/ at least six times); experience of manifest dream content of food [14] (also popularly associated with supernatural

influences) [8,15]; beliefs about being persecuted by others (yes/no, responses); adequacy of sleep (yes/no), and Goldberg's 12-item General Health Questionnaire (GHQ) [16]. The domains of life events enquired into were as follows: loss of first degree relative; serious sickness or accident requiring hospitalization or continuing treatment; difficult home situation; threat to or loss of or continuing treatment; difficult home situation; threat to loss of income, or financial difficulty, other unexpected losses or serious disappointments; fear of enemies planning against one. The three items describing ISP were extracted from the questionnaire of our previous studies [2,3], which are similar to those of some studies in the USA [13]. Subjects were requested to approximate how frequently they had experienced ISP in recent times (i.e., in the past 1 year), thus: never; rarely (i.e., on occasion); sometimes (i.e., on two or four occasions); and frequently (on five occasions at least).

The questionnaire was tested for content and construct validity by being passed around for comments to lecturers in the University Departments of Psychology, Philosophy, and Psychiatry. The comments obtained from these specialists helped in fine tuning the wordings of the questionnaire. Details of this questionnaire have been presented elsewhere [17].

There were three categories of subjects. The first group consisted of all workers (187) present at the general offices of the Oyo State Ministry of Health, and the Engineering Workshops of the University College Hospital, Ibadan (UCH), on the days the research team called at these locations. Permission was obtained from the relevant authorities, and the respondents volunteered to complete the questionnaires after the aims of the study had been explained to them. The second group of subjects consisted of 183 final year and penultimate year students of Faculty of the Social Sciences at the University of Ibadan, who completed the questionnaires in the week to the commencement of sessional examinations. The third group consisted of 61 first year students of the same Faculty, who had no examinations for that semester. The students were approached while in class and were requested to complete the questionnaires immediately after lectures. The students were merely told that we were investigating dreams and ISP. The phenomenon of ISP was explained in each class. All the students in class on the days of the study consented to complete the questionnaire. In all the study locations, members of the research team stayed around unobtrusively while the questionnaires were being completed, in order to explain items that might not be clear to the respondents.

As earlier explained, the student groups were chosen so as to see whether there would be significant differences in ISP frequency between those exposed to stress [13]. The hypothesis here is that there would be no significant difference in frequency of ISP between the two groups of students as well as between them and the workers.

Data were analyzed by computer using frequency distributions, chi-square tests (with Yates' correction where necessary) and *t* tests (two tailed) at 5% levels of statistical significance. In view of the fact that questions on ISP experience requested categorical responses, chi-square tests of significant association with data, such as GHQ-12 scores were divided into three groups, because a previous study in our locality indicated that the best cut-off score was one [18] (thus, score of zero = category 1; score of 1 - 3 = category 2; score of 4 and above = category 3). The life events scores were also divided into two categories of zero or one and above.

## Results

The entire cohort had a mean age of 28.2 (sd 7.89, range 18-57) years, with the students being significantly younger (24.6, sd 3.9) than the workers (8.6 sd;  $P < 0.001$ ). There were

291 (67.7%) males and 133 (30.9%) females (7 subjects did not state their sex). All the workers had at least primary school education. Other demographic characteristics of the cohort have been presented elsewhere [17].

Table 1 shows prevalence of ISP among the groups. On the whole, 153 (35.5%) subjects admitted having experienced ISP in the past year at least twice (i.e., sometimes/frequently). The prevalence at the sometimes/frequently level among all the student groups (35.2%) was similar to that of the workers (35.8%). The prevalence among students in examination conditions (69 i.e. 37.7%) had a non-significant tendency to be higher than the rate for the students not doing examinations (27.8%;  $P > 0.05$ ). At the sometimes/frequently level, 104 (35.7%) and 47 (35.3%) of the males and females, respectively, had had the experience. Out of the nine subjects (2.1%) who admitted experiencing ISP frequently (i.e., at least five times in the year), four were students in examination condition, one was a first year student, and the remaining four were workers. The mean life events and GHQ-12 scores were similar across the groups (Table 1).

Table 1: Frequency of isolated sleep paralysis, mean GHQ and life events scores

Experienced ISP	No of subjects	%
Rarely (only in the year)		
Students in exam conditions (n = 183)	45	24.6
Students not in exam condition (n = 61)	14	23.0
Workers (n = 187)	38	20.3
Sometime/frequently (at least twice in the year)		
Students in exam condition	69	37.7
Students not in exam condition	17	27.8
Workers	67	35.8
All subjects (n = 431)	153	35.5
Males (n = 291)	169	58.1
Females (n = 133)	78	58.6
Mean GHQ - 12 scores		
Category of subjects	Mean	SD
Students in exam condition	1.3	2.2
Students not in exam condition	1.61	3.2
Workers	0.81	1.6
Mean life events scores		
Students not in exam condition	1.3	1.5
Workers	0.9	1.2
Students in exam condition	1.1	1.2

Table 2 shows the statistical relationships between experience of ISP and the various factors investigated. ISP was only significantly associated with life events score ( $P = 0.003$ ) and GHQ score ( $P = 0.001$ ). It is noteworthy that ISP was not significantly associated with fears of some persons planning against one's interest, while the association with experience of food dreams just failed to reach significance ( $P = 0.06$ ). Also, regardless of their levels of education, the majority (69.1%) attributed supernatural causation to ISP.

Table 2: Factors associated with isolated sleep paralysis

Variables	X <sup>2</sup>	df	P value
Isolated sleep paralysis			
vs Sex	2.9	1	NS
vs Age	1.4	2	NS
vs Religious denomination	2.8	3	NS
vs Life events	11.1	2	0.003
vs GHQ-12 Scores	14.0	2	0.0009
vs frequency of dreams in past 3 months	2.4	3	NS
vs frequency of food dreams	7.3	3	0.06
vs persecutory feelings	0.3	2	NS
vs level of education	1.7	1	NS

NS = not significant

## Discussion

A limitation of this study is the fact that, requesting subjects to approximate how frequently they had experienced ISP in recent times, could introduce a recall bias. However, clinical and research experience in the field shows that ISP is usually a dramatic, frightening experience, which the sufferer is not likely to forget in a 1-year period [8].

The findings are in line with those of our earlier studies of medical students [2] and student nurses [3], and support the impression from studies in developed countries about the commonness of ISP in the general population [4-7; 13]. In particular, our prevalence rate is much closer to that of African-Americans, and therefore, supports the contention of Bell and his colleagues [13] about ISP being more prevalent among blacks than whites. This raises the notion of a possible racial (negro) predisposition, combined with the social stress which African-Americans are exposed to, as the precipitating factor. Our data support the contribution of life events and psychic distress (GHQ-12 score) to the ISP experience. However, the finding that ISP rates are not significantly different between students in examination conditions and those not doing examinations, probably indicates that the type of stress that is associated with ISP is not the short-lived and well understood experience that academic examination entails.

On the other hand, despite the fact that a supernatural aetiology is predominantly attached to it, ISP was not significantly associated with persecutory feelings (either in terms of expressed ideation or as symbolized unconsciously by experience of food dreams) [14,15]. The implication of these findings is that the physiologic mechanisms mediating ISP [13] are probably related to psychosocial conditions in a complex way; such that psychic distress and distressing life circumstances could aggravate a natural predisposition to ISP.

Our clinical experience is that when distressing real life problems associated with ISP can be uncovered and dealt with psychotherapeutically, the frequency of ISP is significantly reduced [8]. It will be necessary to disseminate this type of information, not only amongst therapists in hospital settings, but also amongst faith healers, many of whose clients are simply those seeking relief from the life events that have been significantly associated with ISP [11,12]. The therapists at these faith healing centres could be encouraged to use the method of counselling, based on an understanding of psychosocial problems, to help people with ISP, instead of compounding their problems by resorting to unhelpful practices [12]. The usefulness of this approach is illustrated by one case of subject with frequent ISP who approached the author for help. In seeking to understand the background to the subject's most recent episode of ISP, he was asked to recount his daytime experience of the previous few days. The one significant event that was a source of psychic conflict was that he (a muslim, married, and in the Ramadan fasting period, which also involves sexual abstinence), met his old girl friend and they agreed to start their affair once again. Later on, he became worried that as a muslim he had so easily fallen prey to his sexual instinct at a time when he should be in a devotion mood. When he had the ISP experience on the night preceding the appointment with his girl friend, the worry over it (ISP) prevented him from the guilt of going against an important religious injunction. This explanation was satisfactory to him; and coupled with reassurance [8], the frequency of ISP has been significantly reduced. It is noteworthy that this case

supports the psychoanalytic theory of ISP as a manifestation of an inhibition that serves to ward off forbidden impulses [20].

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