



Original Article

The study of effective factors on some of the biologic rhythms from the view point of hospitalized patients.

Najafi Doulatabad SH², Najafi doulatabad A², Sadat SJ³, Mohebbsi Nobandegani Z⁴.

¹Nursing faculty, Yasuj University of Medical Science, Yasuj, IR-Iran, ²Behbahan Azad university, Behbahan, Iran, ³Nursing faculty, Yasuj University of Medical Science, Yasuj, IR-Iran, ⁴Nursing faculty, Shiraz University of Medical Science, Shiraz, IR-Iran.

Abstract:

Many human vital actions like sleep and waken, defecation, blood pressure, body temperature, etc. are being done as rhythmic. The factors on these rhythms among hospitalized patients in the hospitals can outshine the patients recovery and hospitalization period so, the present research has been performed with the aim to study of the effective factors on some biological rhythms from point of view of hospitalized patients at medical ward of the Emam Sajad hospital of Yasouj city 2008-2009.

This research is a descriptive sectional study, performed on hospitalized patients at medical wards of hospitals of Yasouj city during the years 2008-2009. Sampling method was as purposive accessible sampling and the numbers of samples were 100.0 persons. The data collection tool was questionnaire. Collected data were analyzed using SPSS software and descriptive statistical tests.

68.0% and 83.0% of samples were suffering from sleep reduction and anorexia respectively. 61.0% of samples also mentioned some change in their defecation. Among environmental factors, noise in the ward with 65.0%, among personal factors, anxiety regarding recovery and obtaining health with 60.0% and among caring factors, having serum and keep awake to receive medicine with 57.1% have been effective on the sleep reduction of patients with the rates of very much and much. Regarding the effective factors on appetite reduction of patients, smelly environment and undesirable food with 21.0% each, were among the most influential factors. Regarding the effective factors on defecation reduction also lack of activity with 25.5% had the maximum role.

Since the most important effective factors in biologic rhythms which are under studying are adjustable and it is possible to remove them therefore, it is necessary for the caring personnel to prepare the rest possibility and comfortability of patients in desirable manner by more accuracy and removing such factors and giving education to the patients,

Key Words: Sleep, Appetite, Defecation, Biologic rhythms, Patients.

Introduction

Many vital actions of human being are taking place as rhythmic. It means that, it starts, prolongs and ends at specified time. Available rhythms in human being are divided in to three

groups namely short (less than one day), during 24.0 hours and long rhythms (more than one day). Sleeping of waking up, blood pressure, body temperature, behaviours, etc. are among 24.0 hours rhythms and short rhythms are consisting of the cases like brain waves, inspiration and expiration, heartbeat, respiration, defecation, appetite, etc [1]. These rhythms are being regulated by centre or centres called as biologic rhythms which it's

exposure accurate mechanism is not known but, considering the carried out studies, it is believed that, this matter is concerned with complex phenomena that can be of molecular, cellular and neuroendocrine (endogenous or exogenous) type [2]. Several factors can create changing in biologic rhythm of the body among which is the environment change and hospitalization[1]. Studies have shown that, illness and hospitalization has close relation with sleep disorder in such a way that, most patients are complaint against sleep shortage and disturbance but, this disturbance and it's effective occurrence factors are different [3-4].

Sleep is one of the basic needs of human being and the biologic events is sleep stages cases the regeneration of physical, exciting, bodily and psychical powers[5]. About one third of human life pass in sleep and being deprived from it, cause the person health to become risky[6]. The results of researches indicated that, insomnia in patients will cause the fatigue, irritability, quarrelling and pain tolerance reduction [7]. In addition, interruption of sleeping and waking up cycle causes the change incidence in other physiological function specially appetite [8].

Appetite is also among biologic rhythms which it's existance causes the human permanence [3]. Defecation which is formed by defecation reflexes is also necessary for the exit of accumulated waste materials from the intestine and hospitalization can cause the defecation disorder which appears as constipation or diarrhea. If biologic rhythms encounter by disorder, cause the illness incidence in person. Therefore, we can say that, effective factors on these rhythms among hospitalized patients can surpassed their recovery and hospitalization period. Since among treatment personnel, nurses are spending most time with patients, the knowledge of nurses about these factors and disorders and their caused complication can have effective role in carrying out method of the nursing cases and minimizing the factors which influence on some of the biologic rhythms of human being. Therefore, this research has been done with the aim to study the effective factors an some of the biologic rhythms from the view point of hospitalized patients at internal ward of Emam Sajad Hospital of Yasouj city.

Methods

This is a descriptive- sectional research carried out on hospitalized patients at internal ward of Emam Sajad hospital of yasouj city during the year 2009.

The hospitalized patients of this ward who had the following criteria were selected as research samples:(1) age limit of

environmental 20.0-60.0 years (2) more than 24.0 hours passed from their hospitalization (3) being capable of speaking (4) not having hearing problem (5) non-existence of psychical and Alzheimer diseases and (6) not using tranquilizer and soporific medicines. Sampling method was as accessible sample based on objective. The number of research samples were 100.0 persons.

Two types of questionnaire were the data collecting tool. One of them were consisting of some demographic information like age, sex, marriage situation and education level and the other one contained some questions regarding the sleep rate and it's effective factors, the complication caused by insomnia, the appetite situation of patients and effective factors on their appetite rate, defecation situation and it's effective factors. To determine the tool validity, content validity method was used and internal stability (internal consistency) method was used to determine it's reliability.

The research data were collected from September 2008 to October 2009. The research object was explained to those patients who possessed the research criteria and those who were interested to take part in the research, after performing the satisfaction form, they completed the prepared questionnaires. For the patients who were illiterate, the completion of questionnaire was done by researcher by interviewing patients. The replying mean time to the questions were 25.0 minutes.

The data were entered in SPSS, version 13, under windows. To analyze the results of research, descriptive statistic tests consisting of mean, frequency, percentage and standard deviation and inferential tests like χ^2 were used.

Results

The results of the research showed that, 55.0 persons (55.0%) of samples were men and 45.0 persons (45.0%) were women. 73.0 individuals (73.0%) were married and 27.0 (27.0%) were single. 37.0 persons (37.0%) had diploma degree or above that, 29.0 (29.0%) were illiterate, 22.0 persons (22.0%) possessed primary school and 12.0 (12.0%) had high school degree. The mean age of samples were 15.47 ± 42.55 . 82.0% of samples reported some change in their sleeping rate and in 18.0% of them no change was happened. 68.0% and 32.0% of samples who suffered from change in their sleeping rate reported the reduction and increment of sleeping rate respectively. The effective factors in reduction of sleeping rate from the view point of patients have been presented in table 1.

Table I Relative and absolute frequency distribution of effective factors in reducing the sleep rate among hospitalized patients at internal wards from the view point of patients.

Variable	Too much	Much	Medium	Low	At all	
	Number (percent age)	Number (percent age)	Number (percent age)	Number (percent age)	Number (percent age)	
Environmental	New environment	16(28.5)	18(32.0)	6 (10.8)	9(16.0)	7(12.5)
	Noise at ward	14(25.0)	22(40.0)	11(19.2)	6(10.4)	3(5.4)
	Population crowd	6(10.4)	25(44.6)	15(26.7)	5(8.9)	5(8.9)
	Environment temperature	5(8.9)	9(16.0)	22(40.0)	16(28.4)	4(7.0)
	Presence of poor conditioned patient in the room	13(23.2)	11(19.6)	15(26.8)	3(5.4)	14(25.0)
	Light and lamps of the ward	3(5.4)	21(37.5)	14(25.0)	6(10.4)	12(21.4)
	Bad smell of the ward and room	9(16.0)	27(8.2)	12(21.4)	3(5.4)	5(8.9)
	Unsuitable bed	12(21.4)	10(17.9)	10(17.9)	12(21.4)	12(21.4)
	Dirty bed sheet and blankets	14(25.0)	7(12.5)	12(21.4)	13(23.2)	10(17.9)
Individual factors	Having pain	18(32.1)	10(17.9)	14(25.0)	11(19.6)	3(5.4)
	Lack possibility of sleeping at interested situations	3(5.4)	7(12.4)	19(34.0)	17(30.3)	10(17.9)
	Worrying about recovery and gaining health	9(16.0)	25(44.7)	13(23.3)	6(10.7)	3(5.4)
	Worrying about hospital expenses	20(35.7)	7(12.4)	13(23.2)	7(12.4)	9(16.0)
	Death fear	4(7.0)	6(10.7)	8(14.3)	6(10.7)	32(57.2)
Caring factors	Having serum and awaking to receive drug	12(21.4)	20 (35.8)	12(21.4)	8(14.4)	4(7.0)
	Traffic at ward	4(7.0)	15(26.8)	16(28.6)	9(16.1)	12(21.5)
	Awakening early morning for therapy measures	0	14(25.0)	8(14.2)	19(34.0)	15(26.8)

Also, in answering to the question that, whether they had any specified habit at home before sleeping or not, 34.0 persons (34.0%) said "yes" and 60.0 person (60.0%) said "no" and 6.0 of them (6.0%) did not respond to this question. Regarding that, whether they had possibility of doing the same habits in the hospital which they did at home, 28.0 individuals (82.3%) said "yes" of the remaining gave negative replay. The complication caused due to insomnia from the view point of patients has come in table 2.

Responding to the question that, whether hospitalization has influenced in their appetite, 71.0 samples (71.0%), 12 sample (12.0%) and 17.0 samples (17.0%) selected the item of "completely have influenced", "to some extent have influenced" and "no influenced" respectively.

Table II Absolute of relative frequency distribution of resulted complication from insomnia among hospitalized patients at internal wards from the view point of patients.

Resulted complication how insomnia	Number	Percentage
Impatience	38.0	31.0%
Headache	30.0	24.5%
Vertigo	29.0	23.9%
Nausea	12.0	9.9%
Anorexia	8.0	6.6%
Others	5.0	4.1%
Total	122.0	100.0%

The effective factors on reduction of appetite of patients from their view point have been presented in table 3.

Table III Relative of absolute frequency distribution of effective factors on appetite reduction of hospitalized patients of internal wards from the view point of patients

Effective factors on appetite reduction of patients	Number (persons)	Percentage
Unsuitable food	44.0	21.0
Bad smell of environment	44.0	21.0
Disinclination to eat food from hospital	30.0	14.2
Feeling pain	25.0	11.8
Presence of poor conditioned patients in the room	20.0	9.5
Unsuitable room environment	18.0	8.5
Dirty ward	15.0	7.0
Separation from family	15.0	7.0
Total	211.0	100.0

The Also, replying of the question that, whether hospitalization have influenced on their defecation or not, 61.0 persons (61.0%) gave positive and 39.0 persons (39.0%) gave negative answer and 56.0 samples (91.8%) mentioned this influence as the reduction of defecation times. The effective factors on reduction of defecation from the view point of patients have come in table 4.

Table IV Relative and absolute frequency distribution of effective factors on defecation reduction of hospitalized patients at internal wards from the view point of patients

Effective factors on defecation reduction	Number (persons)	Percentage
Inactivity	42	25.5
Unsuitable food	39	23.7
Having pain	35	21.2
unsuitable condition of toilet services	30	18.2
Drug usage	15	9.0
Lack of separate room	4	2.4
Total	165	100.0

In addition, x2 test did not show any statistical significant reaction between sleeping, appetite and defecation changes with sex, marriage situation and level of education.

Discussion:

Considering the results of the research, 68.0% of samples suffered from sleep reduction after hospitalization.

The results of the research of kazemi et al (2004) indicated that, 49.1% of hospitalized patients at Hazrat Ali had sleep quality reduction[9].

Results of a research in china in the years 2009 shown that, 45.6% of hospitalized patients suffered from sleep reduction[10].

Sleep is among the basic needs of human being and biological incidents in sleep stages cause the regeneration of physical, exciting, bodily, and psychical power [5] and since sleep forms one third of human life, deprivation from it causes the individual's health to become risky [6]. As it was mentioned in the results of the research, insomnia causes the occurrence of some complication in patients which their most important are consisting of impatience, headache and vertigo. Other studies also enumerated the occurrence of fatigue, irritability, quarreling, pain tolerance reduction, stress and delay in wound recovery as the complication of insomnia [7-8].

In addition, based on the present research among environmental factors, noise at ward, bad smell of the ward and room, new environment and population crowd have been the most important effective factors in occurrence of insomnia of samples respectively. Among individual factors also, worry about recovery and gaining health and among caring factors, having serum and awaking to receive drug are the most important influencing factors in sleep reduction of patients. The results of a research in the year 2003 indicated that, 75.8% of patients mentioned their sleep disorder in the hospital due to the noise, light, temperature and smell [12].

The results of another research in the year 2009 also have indicated that, anxiety regarding illness, lack of comfort caused by illness, awaking at night to go to the toilet and the noise made by shoes of nurses have been the most important factors in insomnia appearance of patients [10]. The results of another researches also shown that, bringing about a familiar environment can influence largely in improving the sleep of patients[13].

Regarding appetite, 83.0% of persons stated that, hospitalization had the role in their appetite rate and bad smell of environment and room and unsuitable food were the most important factors of the incidence of such problem.

Hospitalization disorders the biologic rhythms of individual[4-5] therefore, we can say that, even if no any foreign factor to create lack of appetite is available in the environment, hospitalization itself can outshines the individual's appetite to some extent

therefore, addition of any other foreign factor can influence the individual's appetite and reduce it. Since nutrition has the basic role in preserving people's health therefore, lack of appetite and using of unsuitable food material will prepare the way for the intensifying of diseases and prolongation of hospitalization period. The results of a research in the year 2005 have indicated that, appetite reduction in hemodialysis patients with increment the hospitalization times and mortality of such patients had statistical significant relation[14]. On the other hand, 61.0% of samples stated that, hospitalization have influenced on their defecation which in 91.8% of cases this influence were as the reduction of defecation times which itself can be one of the susceptible factors for the occurrence of lack of appetite. Also, creation of distension and abdominal pain are the complication of constipation [8] which any of these cases can itself prepare the way for creation of uncomfotability, lack of rest and insomnia of persons.

The fact is that, all the cases which have been mentioned as the effective factors in occurrence of insomnia, lack of appetite and defecation of persons are preventable and adjustable and they can be removed by more accuracy regarding the cases like cleanliness of the ward, cleanliness of patients, control of traffic at ward, trying to present cares at the same and minimum possible time and educating patients. For example, since anxiety regarding recovery and gaining health are among the most important individual factors in occurrence of insomnia, physicians and nurses can reduce the of anxieties of patients to a large extent and bring about their rest and comfortability by educating patients regarding the reason of illness occurrence, way of treatment and the illness forewarning. Also, considering that, the most important influencing factor on defecation of patients was lack of activity, giving education to patients and companions to persuade patients to walk when there is no any limitation for their move and activity can help to remove their problem.

Acknowledgement

We appreciate the research assistant of Yasouj university of medical sciences who provided the expenses of this proposal.

References

- Memarian R. application of nursing concepts of theories first edition. Bashari publication. Tehran. 2002.
- Sadeghi L.A. rhythms of biology and epiphysis. The journal of Tehran medical college. 1985:35; 29.
- Tranmer JE, Minard J, Fox LA, Rebelo L. The sleep experience of medical and surgical patients. Clin Nurs Res; 2003:12(2):159-73.
- Kuivalainen L, Ryhanen A, Isola A, Merilainen P. Sleep disturbances affecting hospital patients. Hoitotiede; 1998:10(3):134-43.
- Potter A & Pery A. Fundamental concept process and practice. 3th .ST Louis: Mosby Company 1993:1148.
- Carol T, Carol L, Priscilla L. Fundamental of Nursing. 4th ED. Philadelphia. Lippincott.2001.
- Snyder-Halpern R, Verran JA. Instrumentation to describe subjective sleep characteristics in healthy subjects. Res Nurs Health.1987;10(3):155-63.
- Alirmai N. the effective factors on sleep condition from the view point of hospitalized clients at Besat medical center of Sanandaj city in the year 2001. Journal of Boyeh nursing and midwifery college- Gorgan. Number 2. autumn and winter of 2005; 37-41.
- Kazemi M., Rafiee G., Ansari A., Factors Relevant to Sleeping Disturbances in Hospitalized Medical-Surgical Patients of Ail Ebne Abitaleb Teaching Hospital of Rafsanjan Journal of Rafsanjan University of Medical Sciences, 2005; 4 (4) :270-275.
- Lei Z, Qiongjing Y, Qiuli W, Sabrina K, Xiaojing L, Changli W. Sleep quality and sleep disturbing factors of inpatients in a Chinese general hospital. J Clin Nurs. 2009;18(17):2521-9.
- Raymond I, Nielsen TA, Lavigne G, Manzini C, Choiniere M. Quality of sleep and its daily relationship to pain intensity in hospitalized adult burn patients. Pain. 2001;92(3): 381-8.
- Cernes M. Nocturnal cortisol release related to sleep structure. Sleep. 2003;17(3):21-27.
- Black JM, Hawks JH, Keene AM. Medical- surgical nursing. Philadelphia: W.B. Saunders co:2001.
- Jerrilynn D. Burrowes, Brett Larive, Glenn M. Chertow, David B. Cockram, Johanna T. Dwyer, Tom Greene et al. Self-reported appetite, hospitalization and death in haemodialysis patients: findings from the Hemodialysis (HEMO) Study .Nephrology Dialysis Transplantation 2005 20(12):2765-2774; doi:10.1093/ndt/gfi132.