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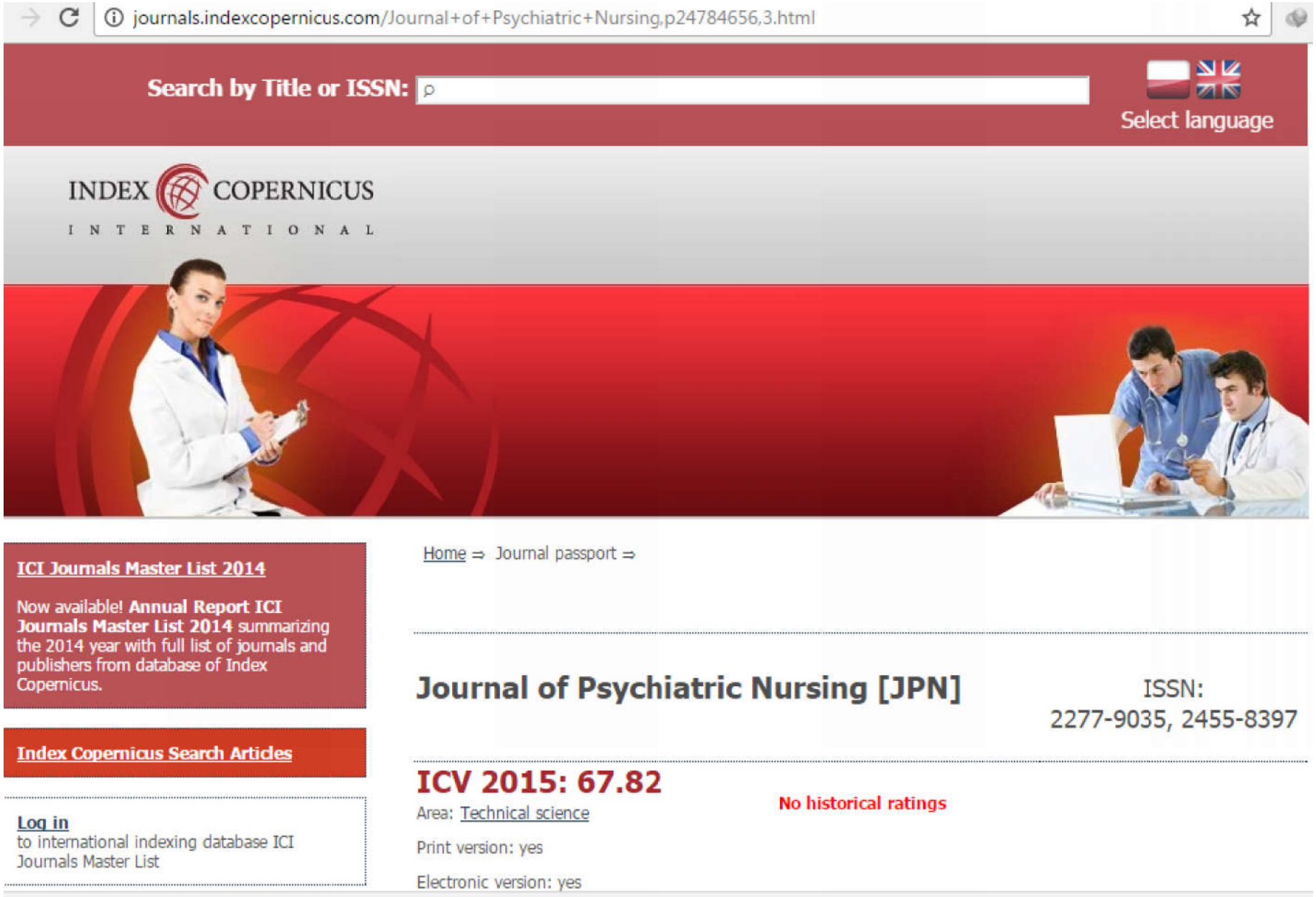
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Emotional Intelligence, Stress and Coping Styles of Nursing Staff in Corporate Hospitals

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Abstract

Introduction: The Nursing profession is a demanding profession and involves complex interaction of nurses with many people. Nurses differ in their emotional intelligence, perception of stress and in coping styles which are influenced by many variables. There can be multiple stressors leading to high stress and poor quality of work. Identification and appropriate intervention is definitely helpful. *Objectives:* Study was conducted to assess the occupational stress, coping styles of nurses, to examine the relationship between emotional intelligence and stress and to study the effect of intervention on stress and emotional intelligence in nurses. *Materials and Methods:* This was a prospective study done in the department of Psychology, Osmania University, Hyderabad. A total of 200 female nurses working in three Corporate hospitals, Hyderabad, were selected randomly. The Emotional intelligence, Stress and Coping styles were assessed through Emotional Intelligence Scale, Occupational Stress Index, and Coping Strategies Scale by way of questionnaires. Thirty nurses had high stress levels and intervention was given to them. All the three scores were again assessed after intervention. *Results:* Nurses differed in emotional intelligence. Nurses more than 50 years showed higher EI. Education also influenced the EI. The EI did not differ based on work area. Stress affected nurses equally irrespective of age and work area. There was a significant difference in Coping styles among nurses. Appropriate intervention given to nurses with high levels of stress improved the EI and Coping styles. *Conclusion:* Nursing profession is a demanding profession and nurses shoulder lot of responsibility and commitment inherent in it, which can give rise to high levels of stress among nurses. Intervention definitely helps to lower the stress levels and increase the emotional intelligence and coping styles.

Keywords: Nurses; Emotional Intelligence; Occupational Stress; Coping Styles; Relaxation Techniques.

Introduction

The primary task of nurses is to care for patients and aid in their recovery. This profession needs a lot of discipline, patience, responsibility, commitment and dedication. The duties of a nurse include many activities involving interactions with the patients, doctors, other health care providers, relatives of the patients, administrators, superiors and colleagues. In addition, many nurses have to work in shift duties and stay away from family events on many occasions. They have to constantly care for sick people and witness morbidity and mortality and there are many everyday stressful experiences packed into the profession.

The physical, mental and psychological well-being of nurses is very important so as to ensure better patient care. It is the responsibility of the hospital management to ensure a stress-free environment for their nurses in order to deliver better nursing care. The study was undertaken to assess the occupational stress of nurses working in different corporate hospitals; to examine the relationship between emotional intelligence and stress; to identify the efficiency of coping styles and to study the effectiveness of intervention on stress and emotional intelligence in nurses.

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Materials and Methods

The present study was a prospective study carried out in the department of Psychology, Osmania University, Hyderabad, over a period of five years. A total of 250 female nurses working in three different corporate hospitals, Hyderabad, were selected randomly for the study. The hospitals were 150 to 300 bedded. The academic qualifications of the subjects were ANM (Auxiliary Nursing and Midwife), GNM (General Nursing and Midwifery) and B.Sc.N (Bachelor of Science in Nursing). Informed consent was taken from all the participants.Only female nurses, who had completed studies between 18 to 55 years of age, working in Corporate hospitals in various wards with patients were selected. Three instruments were used for the study. Emotional Intelligence Scale (EIS)– (by Hyde [1] et al) had 34 items and measures EI through 10 factors – self-awareness, empathy, self-motivation, emotional stability, managing relation, integrity, self-development, value orientation, commitment and altruistic behaviour. Occupational Stress Index (OSIS)– (by Srivastava [2] et al) had 46 items and measures 12 different dimensions inherent in any occupation. Coping Strategies Scale (CSS)–(by Srivastava AK [3]) had 50 items to be rated on a five point scale.

In the present study, the nurses were contacted in the working hours with prior appointment from the concerned Nursing Superintendent of the hospitals. The objectives were clearly explained to the participants. After establishing sufficient rapport with them, their biodata sheets were filled. The nurses were requested to read the structured instructions carefully provided for answering each scale before giving their response. They were assured of complete confidentiality. The Emotional Intelligence Scale and Occupational Stress Index scale were given first. On submission of these two, the Coping Strategies Scale questionnaire was given. The questionnaires were given to 250 nurses out of which, 50 were incomplete and lacked demographic details and hence were discarded. Final sample size of the study comprised of 200 nurses. After obtaining the responses, scoring was done according to the test manual guideline. Out of 200 nurses, 30 were identified as having high levels of stress. They were given education and self-management skills and were counselled about coping strategies. The therapeutic programs were counseling on psycho-socio factors and relaxation techniques:

A. Jacobson [2]Progressive Muscle Relaxation Technique was adopted to help nurses develop more control over somatic symptoms of anxietyby by reducing muscle tension. The subjects were asked to sit in a comfortable chair. First, the therapist demonstrated how to tense and relax the different muscle groups. Then the nurses were guided through the tension and relaxation technique by the therapist. Tension was normally maintained for 5 seconds followed by 10-15 seconds relaxation of the muscles. The technique was carried out in two sessions. In the first session, relaxation of the hands, arms, face, neck and shoulders was practised. In the second session, the rest of the body was included. Clam and regular breathing was continued throughout the sessions. Daily homework assignment was asked to be practised by the nurses at home in a comfortable place and time. They were asked to keep a record of the time taken to relax and the amount of relaxation achieved during each practice.

B. Rapid Relaxation Technique–It helps to relax in natural and stressful situations and reduces the time to get relaxed. Each session takes 20 to 30 seconds and needs to be done for 15 to 20 times per day.

The steps were: Take 2-3 deep breaths with slow exhalation of each breath. "Relax" had to be thought before each exhalation. The body was to be scanned for tension and relaxation of the tensed muscle groups was to be tried.

Those found to have high stress were given intervention and required therapy for 2–3 weeks. After the intervention, emotional intelligence, stress and coping styles were assessed to understand the effect of intervention on these functions. The raw scores were collected from the response sheets of the nurses. The scoring was done according to the manuals. Three scores ie, coping strategies, stress and emotional intelligence of each subject were obtained. The trait coping strategies and occupational strategies were scored separately with all subareas. For analysis, measure of central tendency, measure of variability, 't' ratio to find the difference among the groups and multivariate analysis to observe the trends and factors relating to stress were used.

Results

The nurses aged 50 years and above showed significantly higher mean score for EI when compared to other age groups.

Nurses had significant difference in EI as related to the age. Nurses with B.Sc education had better EI than those with ANM or GNM education. Also the B.Sc. group had higher stress levels and also better coping styles.

Table 1: Characteristics of the subjects

Parameter	Variable	n = 200	Percentage
Experience	< 5 years	115	57.5
	5-10 years	65	32.5
	>11 years	20	10
Hospitals	Hospital – 1	60	30
	Hospital – 2	60	30
	Hospital - 3	80	40
Educational qualifications	ANM	19	9.5
	GNM	131	65.5
	B.Sc. (Nursing)	50	25
Marital status	Married	74	37
	Single	126	63
Age group	21 – 30 years	167	83.5
	31 – 40 years	25	12.5
	41 – 50 years	5	2.5
	>50 years	3	1.5
Family	Joint family	64	32
	Nuclear	136	68
Area of work	General ward	55	27.5
	Intensive ward	59	29.5
	Dialysis ward	5	2.5
	OPD (Out-patient)	27	13.5
	Post-operative ward	14	7
	Cath- lab	4	2
	Emergency/Casuality	14	7
	Cubical ward	22	11
Duties	Shift	107	53.5
	General	93	46.5

Table 2: ANOVA and Mean scores on Emotional intelligence, Stress and Coping styles related

n=200

Parameter	Age (years)	Number of subjects	Mean	F value	Significance
Emotional intelligence	20-30	181	130.14	3.21	0.042, S
	31-49	16	128.06		
	50 and above	3	148.66		
Stress	20-30	181	138.15	1.093	0.337,NS
	31-49	16	135.50		
	50 and above	3	144.00		
Coping styles	20-30	181	94.53	0.377	0.686, NS
	31-49	16	97.77		
	50 and above	3	103.00		

SD: standard deviation, S: significant, NS: not significant

Table 3: ANOVA and Mean scores on Emotional intelligence, Stress and Coping styles related to Educational Qualifications.

n=200

Area	Education	N	Mean	F value	Significance
Emotional intelligence	ANM	18	133.50	4.69	0.010, S
	GNM	109	127.68		
	B.Sc.	73	133.89		
	Total	200	130.25		
Stress	ANM	18	135.88	8.09	0.000, S
	GNM	109	135.99		
	B.Sc.	73	141.60		
	Total	200	138.03		
Coping styles	ANM	18	94.55	4.197	0.016, S
	GNM	109	91.22		
	B.Sc.	73	100.50		
	Total	200	94.91		

There is no significant difference in EI or Stress in nurses working in different areas. However, there is a difference in the coping styles and nurses working in ICU have better coping styles.

There was no significant difference between nurses of IP wards, OP wards and critical wards for EI. The stress factor for nurses was same in all the working areas irrespective of the type of wards. Nurses of ICU and OP ward adopted same coping styles. The IP ward nurses adopted coping styles depending on the situation.

There was a significant relation between emotional intelligence of nurses to cope with stress. The stress of nurses related well with better Coping styles and proved significant relation along with emotional intelligence of nurses. The areas of coping styles of nurses had significant relation with the stress at work place in different hospitals.

Table 4: ANOVA and Mean scores of Emotional intelligence, Stress and Coping styles related to Working Areas n=200

Factor	Work area	N	Mean	F value	Significance
Emotional intelligence	ICU	77	131.45	2.47	0.087, NS
	IP ward	82	127.85		
	OPD	41	132.80		
	Total	200	130.25		
Stress	ICU	77	139.06	1.271	0.283, NS
	IP ward	82	136.70		
	OPD	41	138.73		
	Total	200	138.03		
Coping styles	ICU	77	103.50	17.27	0.000, S
	IP ward	82	85.25		
	OPD	41	98.09		
	Total	200	94.91		

Table 5: Comparison for Emotional Intelligence, Stress and Coping styles for Nurses within the Area of Working Units. n=200

Dependent variable	Work area (I)	Work area (J)	Mean diff	Significance
Emotional intelligence	ICU	IP ward	3.60	0.085, NS
		OPD	-1.35	0.595, S
	IP ward	ICU	-3.60	0.085, NS
		OP ward	-4.95	0.050, S
	OP ward	ICU	1.35	0.595, NS
		IP ward	4.95	0.050, S
Stress	ICU	IP ward	2.35	0.133, NS
		OPD	0.33	0.283, S
	IP ward	ICU	-2.35	0.133, NS
		OP ward	-2.02	0.283, S
	OP ward	ICU	0.33	0.861, NS
		IP ward	2.02	0.283, S
Coping styles	ICU	IP ward	18.25	0.000, S
		OPD	5.40	0.162, NS
	IP ward	ICU	-18.25	0.000, S
		OP ward	-12.84	0.001, S
	OP ward	ICU	-5.40	0.162, NS
		IP ward	12.84	0.001, S

Table 6: Correlation between Emotional intelligence, Stress and Coping styles of Nurses n=200

		Emotional Intelligence	Stress	Coping Styles
Emotional intelligence	Pearson correlation	1	0.273**	0.091
	Sig (2- tailed)		0.000	0.199
	N	200	200	200
Stress	Pearson correlation	0.273**	1	0.185**
	Sig (2- tailed)	0.000		0.009
	N	200	200	200
Coping styles	Pearson correlation	0.091	0.185**	1
	Sig (2- tailed)	0.199	0.009	
	N	200	200	200

** Correlation is significant at the 0.001 level (2-tailed)

Table 7: Results of ANOVA, Mean scores of Emotional intelligence of Nurses. n=200

S. No	Ares	N	Mean	SD	DF	F	S
1	Emotional intelligence	200	130.60	13.93	199	4.819	0.009
2	Self- awareness	200	16.18	2.69	199	0.974	0.379
3	Empathy	200	18.20	2.34	199	2.883	0.58
4	Self- motivation	200	23.30	2.7	199	5.133	0.007
5	Emotional stability	200	15.12	3.42	199	2.746	0.007
6	Managing relations	200	15.38	2.36	199	8.045	0.000
7	Integrity	200	11.74	1.61	199	0.907	0.405
8	Self- development	200	9.77	1.39	199	9.90	0.000
9	Value orientation	200	7.13	1.49	199	6.46	0.002
10	Commitment	200	8.02	3.06	199	3.502	0.032
11	Aesthetic behaviour	200	7.76	1.18	199	5.926	0.003

The emotional intelligence of nurses working in hospitals was high but they did not differ in it. The mean score of the nurses was 130.60 which showed that nurses managed their problems using emotional intelligence more often. Nurses using their emotional intelligence at emergencies result in better coping styles such as Cognitive approach and Cognitive Behavioural approach. Nurses vary significantly among them.

Nurses with high level of stress were identified and underwent intervention programme which included relaxation techniques and counseling about their general problems. After one month they were re-evaluated. The mean sore of EI before and after intervention was 124.5 and 137 respectively. The F value was 0.798 and P value was 0.0001 which was significant. The stress level decreased and the stress score improved from 148.6 to 112.3 after intervention. The F value was 0.718 and the P value was 0.0001 which was significant.

Discussion

Occupational stress stands as one of the factors of stress in professional fields. Nursing care plays an important part in the treatment of a patient along with medication at appropriate time and it is a stressful job. Stress in turn is related to the emotional intelligence of a person and the pattern of coping styles adopted by them.

The three variables emotional intelligence, stress and coping styles of nurses were considered in this study. The nurses with high stress were identified and the effect of intervention on them was studied. The major variable of emotional intelligence and its relation with age group of 20-30 years compared with 31-40 years age group proved significant among them. Nurses with higher age group had higher emotional intelligence. Nurses differed significantly with B.Sc. to ANM education in relation to the area of emotional intelligence. Nurses' work area had no significance with emotional intelligence. Nurses with higher emotional intelligence resulted in the successful completion of work indicating that they exhibit more patience, commitment and empathy. Nurses reflected the same attitude in the area of self-awareness and integrity which are factors of emotional intelligence.

The nursing profession demands the nurse to constantly interact with the patients and health care providers and so the 'nurse-patient interaction' is the pulse of the nursing practice. It is a complex process involving perception, understanding of patient emotions and utilization of these perceptions to manage patient situations to achieve effective patient care. This involves emotional intelligence.

Quantitative research is a formal, objective, systematic process where numerical data is utilized to obtain information as suggested by Burns [5]et al. Bowling [6] also emphasized that quantitative research is ideal as it permits use of standardized data collection. In the present study, a cross-sectional survey design was used to provide a quantitative/ numeric description of the attitudes and opinions of the nurses. The main benefit of a cross-sectional survey is that data can be collected from the population of interest at one point in time. This is extremely advantageous considering the time constraint of the present study.

The term Emotional intelligence in the present study refers to the ability to identify, use, understand and manage emotions and emotional information. The term emotional intelligence became popular due to the American pscychologist Daniel Goleman [7]. It has been suggested by Mayer [8] et al that there are individual differences in our ability to utilize emotions and emotional information and hence, this has become a popular construct with researchers and practitioners alike. One of the rapidly growing areas of interest with regard to EI is its role in the workplace. Traditionally, the workplace has been considered a cold and rational environment with no room for emotions as proposed by Ashforth [9] et al. But at

present, it is understood that individuals bring their affective states, traits and emotions to the workplace. The role of EI in occupational stress process is underinvestigated. Locke [10] claims that the concept of EI is in itself a misinterpretation of the intelligence construct. He thought of EI as the ability to grasp abstractions and suggested that EI is a skill. In our study we observed improved EI in better educated group and also in higher age groups.

Stress is inherent in life and human behavior [11]. Workplace stress is not confined to the work place and it is frequently brought home as well as suggested by Doby at al [12].

Bhagat [13]et al observed that stress causes individuals to change their psychological or physiological condition and leads to deviation from normal functioning. Hendrix [14] et al 1995 defined stress as an uncontrollable cognitive state resulting from exposure to a stressor that can result in psychological and physiological strain. Hans Seyle [15]1946 described the 'General adaptation syndrome' theory in which he described three stages as a response to stress and these are the Alarm reaction, Resistance and Exhaustion. Stress is a recognized problem in health care workers and Nursing has been identified as an occupation with high levels of stress. Stress perception is highly subjective and complex. Marital status also affects stress levels. Being married is less stressful and more satisfying for men than for women as observed by Valdez [16] et al. Cooper [17] et al stated that occupational stress includes environmental factors such as work overload, role ambiguity, role conflict and poor working conditions. However, in our study, the nurses perceived more or less similar levels of stress irrespective of the working areas. Manshor [16] et al in their study on Malaysian managers found that workloads, working conditions and relationships at work led to stress at work place. They also observed that certain demographic variables influenced the stress levels. In the present study also we observed that the better educated nurses with B.Sc. Nursing qualification perceived more stress as compared to non-degree qualifications. This could be due to the pressure to perform better.

The stressors can be internal or external and also they can be short term acute stressors or long term chronic stressors. National Institute for Occupational Safety and Health (NIOSH) [19] has suggested ways to reduce stress such as balance between work and family life, creating support network of friends and co-workers, maintain positive attitude, have realistic expectations, balanced diet, practice relaxation and meditation techniques and have regular medical check-ups. Accordingly, in our study the nurses were given counselling and were taught relaxation techniques to overcome the stressors. The emotional intelligence can be improved to better cope with stress as stated by Watkin [20]. We agree with Watkin as our study also showed an improvement in the EI of the subjects after intervention.

Coping: Coping is defined as the cognitive and emotional efforts made to overcome stress of everyday living. Lazarus [21] et al suggested that coping consists of action-oriented and intra-psychic efforts to manage environmental and internal demands. Researchers like Lazarus and Folkman [22] et al have observed that Coping is a complex process and is influenced by personality characteristics and situational demands.Along with identification of work place strategies, it is important to devise coping strategies to deal with it. Mc Lean [23] suggested that a person's reaction to stress depends on their attitude and is perceived differently by different people. Similarly International Labour Office (ILO) [24] also suggested that the effectiveness of coping techniques depends on the individual. Potential predictors include gender, age, case mix, workload,practice type, speciality work, work control, isolation and support in balancing work and home.In our study also we observed that nurses having better EI had better coping styles. A study by Tyson [25] et al suggests thatnurses who have high levels of workload use more problem-solving strategies and nurses who are stressed due to patient demands or home/work conflicts use social support. We agree with Tyson et al as our study also showed that nurses working in more demanding areas like ICUs had better coping styles.

Conclusion

Nurses differ significantly with regard to age and emotional intelligence and most of them experience moderate levels of stress. Behavioral acceptance coping styles are adopted by nurses and these are not influenced by the age group. Nurses working in ICUs have better coping styles as compared to other area nurses. Self-motivation of nurses differssignificantly. Nurses with degree course like B.Sc. have higher emotional intelligence. Intervention definitely helps to lower the stress levels and increase the level of emotional intelligence.

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Subjective Burden among Caregivers of Patients with Mental Illness: A Cross-Sectional Study

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Abstract

Background and Objectives: Caregivers play a vital role in supporting family members who are sick, infirm or disabled. Patients with mental illness are dependent on their caregiver and their well being is directly related to the nature and quality of the care provided by the care giver. Caring for a mentally ill individual is burdensome due to the quantum of effort needed to satisfy both their physical and psychological needs. Hence, this study was undertaken with an objective to determine the level of subjective burden among the care givers of patients with mental illness. *Materials and Methods:* This study was conducted among the care givers of the patients with mental illness attending the psychiatric out patient department of a tertiary care hospital. A cross sectional descriptive study design was adopted. The sample size was 178 subjects. Caregivers of the mentally ill were chosen through non-probability convenient sampling method. The caregiver burden was assessed using the Zarit Burden Interview. *Results:* The result of this study revealed that, among the 178 subjects, a vast majority of subjects (82%) had subjective burden and only 17.9% had experienced no burden. Among the 146 subjects who reported to have care giver burden, about 66 (45.2%) subjects had mild burden; 63 (43.2%) had moderate burden and only 17 (11.6%) subjects had severe burden. *Conclusion:* It was evident form the present study that at any given point of time, a majority of caregivers of patients with mental illness experienced burden in some form. Hence it is imperative that alleviating the burden among caregivers should be given importance in order to achieve better clinical outcome. Interventional programs exclusively developed for care givers will help them to manage the burden effectively. Psychiatric nurses must give priority in addressing the burden of caregivers in their routine patient care.

Keywords: Caregiver; Patients with Mental Illness; Caregiver Burden.

Introduction

Successful management of mental illness relies significantly in on unformed or non-professional networks of caregivers. Caregiver's burden is a multi-dimensional phenomenon reflecting physical, psycho-emotional, social and financial consequences of caring for an impaired family member. Caregivers may experience financial burden, difficulty in handling the disruptive behavior and fluctuating emotions that cannot be controlled, a lack of time for personal enjoyment and social engagement, difficulty in handling the lack of motivation found in family members. Addition of the caregiving role to the already existing family role may become stressful, both psychologically and economically [1].

Research studies undertaken pertaining to this area reveal that caregiver burden is one of the most important issues that need to be tackled with utmost intricacy like that of the mental illness. The results of a community based study which was conducted in a rural area showed that the burden among caregivers in general was higher than expected and it became lower, due to the interventions given through a community based programme [2]. In another descriptive analytic study, which was conducted on family caregivers of patients with mental disorders using a 22-item Zarit Burden Interview, it was found that 73.6% of family care givers experienced moderate to severe level of burden. This study also concluded that professional interventions should be offered

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especially to those caregivers of patients with mental illness who experienced burden and stress [3].

The investigator from his clinical experience found that most of the times, the primary focus of attention of the mental health team members is only on the patients, while the caregivers remain unnoticed. This issue instigated the investigator to take up this study and it was firmly believed that the results of this study would pave way for formulating a referral system with nursing interventional program for caregivers with perceived burden.

Materials and Methods

This study was conducted among the care givers of the patients with mental illness, who were attending the psychiatric out patient department of a tertiary care hospital.

The objectives of this study were to assess the level of subjective burden among the caregivers and to find association of the over all subjective burden and severity of the burden with the socio-demographic and clinical variables. The quantitative research approach with a cross-sectional descriptive study design was adopted. The sample size for this study was 178 (caregivers of the patients with mental illness) and this sample size was estimated with an expected prevalence of perceived burden among caregivers as 49% at 5% level of significance and 15% relative precision. The subjects were chosen based on non-probability convenient sampling method. The sample selection criteria were: caregivers of both the sex, aged between 19 and 65 years and who had rendered care by staying with the patient for a minimum of 6 months. Face to face structured interview technique was used to collect the data, with the following instruments.

Part I: Guide for Collecting the Socio-Demographic and Clinical Variables

This included the caregiver's age, gender, educational status, occupation, locality, monthly income, marital status, relationship with the patient, type of mental illness and duration of stay

Part II: Zarit Burden Interview (ZBI) [4]

Zarit Burden Interview scale was developed to measure the subjective burden among caregivers of adults with mental illness. The ZBI is a standardized tool and reliability was assessed by excellent internal consistency. Items were generated based on studies resulting in a 22 items self-inventory that examines burden associated with functions or behavioral impairment and home care situation.

Each item was rated as follows:

0 – Never

1 – Rarely

2 – Sometimes

3 – Quite frequently

4 – Nearly always

The score were interpreted as follows:

0 – 21: Little or no burden

21 – 40: Mild to moderate burden

41 – 60: Moderate to severe burden

61 – 88: Severe burden

Results

The data were analyzed using the SPSS version 22. The descriptive (frequency, percentage) and inferential statistics (chi-square test) were computed. The results of the study were discussed as follows,

Table 1 denotes that 146 (82%) subjects reported that they had caregiver burden with different levels (mild to moderate burden – 67 (37.6%); moderate to severe burden – 62 (34.8%); severe burden – 17 (9.6%) and only 39 (18%) of the remaining subjects had little or no burden, as measured by the Zarit Burden Interview Scale.

Table 2 shows the association of the overall subjective burden with the socio-demographic and clinical variables. It was identified that, a 146 (82%) subjects experienced care giver burden, where as only 32 (17.9%) subjects had not experienced care giver burden. A statistically significant association was

Table 1: Distribution of the level of subjective burden among the caregivers of patients with mental illness (N = 178)

S. No.	Categories	Frequency	Percentage
1.	Little or no burden	32	18%
2.	Mild to moderate burden	67	37.6%
3.	Moderate to severe burden	62	34.8%
4.	Severe burden	17	9.6%

found between the age, gender, educational status and over all subjective burden among the care givers.

Table 3 indicates the association of the severity of subjective burden with the socio-demographic and clinical variables. Among the 146 subjects who reported to have care giver burden, a majority of about 66 (45.2%) subjects had mild burden 63 (43.2%) had moderate burden and only 17 (11.6%) subjects had severe burden. A statistically significant association found between the age, occupation, locality of the subjects and the severity of subjective burden.

Table 2: Association of the over-all subjective burden among care givers with the socio-demographic and clinical variables.

(N = 178)

Variables	Over-all subjective burden among care givers				χ^2	p Value
	No (Score: 0 – 20)		Yes (Score: 21 – 88)			
	f	%	f	%		
Age						
18 – 25	7	3.9	10	5.6	6.9	**0.032***
26 – 50	5	2.8	79	44.4		
51 – 65	10	5.6	57	57		
Gender						
Male	17	9.6	63	35.4	1.05	**0.03***
Female	15	8.4	83	46.6		
Educational status						
Primary	16	8.9	102	57.3	12.71	**0.002****
Secondary	7	3.9	34	19.1		
Graduate & above	9	5.1	10	5.6		
Occupation						
Employed (Govt./Private)	6	3.4	40	22.5	1.06	0.59
Self-employed	11	6.2	59	33.14		
Unemployed	15	8.4	47	26.4		
Locality						
Urban	16	8.9	50	28.1	2.8	0.09
Rural	16	8.9	96	53.9		
Monthly income						
≤5000	24	13.5	121	67.9	1.08	0.29
>5000	8	4.5	24	13.5		
Marital Status						
Single	6	3.4	15	8.2	2.01	0.36
Married	24	13.4	117	65.7		
Divorced / Separated	1	0.6	1	0.6		
Relationship with the patient						
Parent	11	6.2	48	26.9	6.56	0.16
Sibling	6	3.4	9	5.1		
Spouse	7	3.9	54	30.3		
Son / daughter	8	4.5	8	4.5		
Type of mental illness						
Organic disorder	0	0	19	10.6	9.94	0.08
Schizophrenia	4	2.2	21	11.7		
Mood disorder	25	14.04	77	43.3		
Psychoactive substance use disorder	2	1.1	12	6.7		
Mental retardation	1	0.6	6	3.4		
Other disorders	0	0	11	6.2		
Duration of stay with the patient						
6 months – 2 years	8	4.5	35	19.6	0.01	0.09
> 2 years	24	13.5	111	62.4		

*Significant at $p<0.05$; **Significant at $p<0.005$

Table 3: Association of the severity of subjective burden among care givers with the socio-demographic and clinical variables (N = 146)

Variables	Severity of subjective burden among care givers						χ^2	p Value
	Mild to moderate		Moderate to severe		Severe			
	f	%	f	%	f	%		
Age								
18 – 25	9	6.2	0	0	1	0.6	9.9	**0.04***
26 – 50	34	23.3	37	25.3	8	5.5		
51 – 65	23	15.7	26	17.8	8	5.5		
Gender								
Male	31	21.2	27	18.5	5	3.4	1.7	0.42
Female	35	23.9	36	24.6	12	8.2		
Educational status								
Primary	40	27.4	49	33.5	13	8.9	5.6	0.22
Secondary	19	13	12	8.2	3	2.1		
Graduate & above	7	4.7	2	1.4	1	0.6		
Occupation								
Employed (Govt./Private)	24	16.4	15	10.3	1	0.6	11.8	**0.02***
Self-employed	18	12.3	13	20.5	11	7.5		
Unemployed	24	16.4	18	2.3	5	3.4		
Locality								
Urban	31	21.2	16	10.9	3	2.1	9.02	**0.01***
Rural	35	23.9	47	32.2	14	9.5		
Monthly income								
≤5000	51	34.9	54	36.9	16	10.9	3.3	0.18
>5000	15	10.3	9	6.2	1	0.6		
Marital Status								
Single	11	7.5	2	1.4	2	1.4	8.2	0.08
Married	49	33.5	56	38.3	12	8.2		
Divorced / Separated	6	4.1	5	3.4	13	2.1		
Relationship with the patient								
Parent	21	14.3	21	14.3	6	4.1	3.6	0.09
Sibling	2	1.4	6	4.1	1	0.6		
Spouse	28	19.2	21	14.3	5	3.4		
Son / daughter	15	10.2	15	10.3	5	3.3		
Type of mental illness								
Organic disorder	8	5.5	9	6.2	2	1.4		
Schizophrenia	12	8.2	7	4.7	2	1.4	8.2	0.06
Mood disorder	36	24.6	34	23.3	7	4.7		
Psychoactive substance use disorder	3	2.1	6	4.1	3	2.1		
Mental retardation	2	0.1	2	1.4	2	1.4		
Other disorders	5	3.4	5	3.4	1	0.6		
Duration of stay with the patient								
6 months – 2 years	17	11.6	16	10.9	2	1.4	1.6	0.05
> 2 years	49	33.6	47	32.2	15	10.3		

*Significant at $p<0.05$

Discussion

The findings of the present study clearly revealed that caregiver burden is present among majority of the subjects and it is one of the important aspects that need to be taken into consideration. As far as the level of subjective burden among caregivers of patients with mental illness is concerned, this study demonstrated that majority of subjects (82%) reported that they had caregiver burden and only 18% of the remaining subjects had little or no burden. These findings are in relevance with a study done by Anjum et al [5], who had studied the burden of care and associated mental health problems in caregivers of patients with schizophrenia at Lahore. They had found that a majority of 55% of caregivers had higher level of burden and associated mental health problems.

Among the subjects who had reported to have subjective burden, the severity of the burden had been figured out in the current study as: mild to moderate

burden – 37.6%; moderate to severe burden – 34.8%; severe burden – 9.6%. These findings are supported by a study done by Chen et al [6] which showed that caregivers of patients with different psychiatric illnesses had moderate burden and higher burden scores were correlated with a lower quality of life. On the contrary, these findings were different from findings of a study done by Bello-Mojeed et al [7], who reported that 41.3% subjects had no or little burden, 33.5% of subjects had mild to moderate burden, 22% had moderate to severe burden and 3.2% had severe burden.

In the present study, it was found that there was a statistically significant association between the age, gender, occupation, educational status, locality of the subjects and the subjective burden of caregivers. These findings are consistent with studies done by Gandhi et al [8], and Srivastava [8] who stated that high burden level was present among female caregivers and among caregivers from rural locality.

Conclusion

This study had clearly indicated that burden among caregivers of patients with mental illness is inevitable. Addition of caregiving role to the already existing role may become burdensome and stressful both physically and psychologically [10]. Mental health team members must understand the fact that family caregivers form an integral part of holistic management of patient care and they often have to contend with the physical, emotional, social and financial strains of caregiving. Though caregiver burden has been considered as a neglected part of research in mental health care, these days studies are being undertaken to break the mystery in relation to this area. Hence, the current study would certainly throw light among the mental health professionals, especially nurses signifying the importance of paying attention to caregivers, while providing comprehensive care for the patients with mental illness.

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Knowledge, Attitude and Practice on Proper Disposal of Waste: A Survey

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Abstract

Background: Waste poses a threat to public health and the environment if it is not stored, collected, and disposed properly.The quantity of solid waste generated by society is increasing daily and at the same time many household do not recycle their waste, but instead, tend to dispose it outside their homes or on the streets. *Method:*Non-Experimental design and descriptive approach was used to assess the knowledge, attitude and practice among adults on proper disposal of waste. The population was adults residing in Bastwad at Belgaum Karnataka. Fifty adults were selected by employing non-probability convenient sampling technique. Self-administered structured questionnaire was used to assess the knowledge, attitude and practice regarding disposal of waste. The tool was highly reliable with 'r' value 0.8.The data were collected after getting consent from the adults. Survey technique was adopted and self-administered questionnaire was answered by each adult for the duration of 20-30 minutes. Data were compiled using descriptive and inferential statistics. *Result:* With regards to knowledge 5(10%) subjects were having inadequate knowledge, 24(48%) had moderately adequate knowledge and 21(42%) had adequate knowledge on proper disposal of waste. 31(62%) had moderately positive attitude, and 19(38%) had positive attitude.With respect to the practice on proper disposal of waste, 13(26%) reported moderately acceptable practice and 37(74%) reported acceptable practice. *Conclusion:* The people who have adequate knowledge on waste management technique are more likely to develop positive attitude and acceptable practice on disposal of waste.

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Keywords: Knowledge; Attitude; Practice; Adults; Disposal of Waste.

Introduction

Proper disposal of human waste is important to avoid pollution of water sources, minimize the possibility of spreading disease, and minimize the rate of decomposition. Waste is an unavoidable by-product of human activities. Economic development, urbanization and improved living standards in cities increase the quantity and complexity of generated solid waste. If accumulated, it leads to degradation of urban environment, stresses natural resources and leads to health problems [1]. Management of solid waste is the discipline associated with the control of generation, storage, collection, transfer and transport, processing and disposal of wastes in a manner that is in accordance with the best principles of public health, economics, engineering, aesthetics and other environmental considerations [2].

According to World Health Organization statistical information 2008, 62% of world's population has access to improved sanitation in 2008. Only slightly more than half of them or 31% of the world population living in houses is connected to sewer. Overall 2.5 billion people lack access to improved sanitation and thus most resort to open defecation or other unsanitary form of defecation, such as public latrines or open pit latrines. This includes 1.2 billion people who have access to no facilities at all [3].

Although average Indian only generates around half a kilo of solid waste per day, the volume is huge. Given the current developments, the generation of municipal solid waste in India in the year 2047 has been projected to exceed 260 million tons- a number more than five times the present levels. While the quantity of solid waste generated by society is increasing; the composition of solid waste is becoming

more and more diversified. At the same time many households do not recycle their waste, but instead, tend to dispose it outside their homes or on the streets [4,5].

Waste poses a threat to public health and the environment if it is not stored, collected, and disposed of properly. The perception of waste as an unwanted material with no intrinsic value has dominated attitudes towards disposal [6]. National and International organizations have been formulated and as well as amended policies across the years concerned to the collection, segregation, storage, transportation, processing and disposal of municipal solid waste. So, maintenance of healthy living environment can be possible through proper disposal of waste. However, it has been discovered that most households are struggling with how to manage their waste.

Management of non-hazardous residential and institutional waste in metropolitan areas is usually the responsibility of local government authorities, while management of non-hazardous commercial industrial waste is usually the responsibility of generator [2]. However, although it is the duty of local bodies (Urban and Local) to address the issue of Solid Waste Management, tight budget, inefficient organization, etcetera has rendered a situation that has little hope for alleviation in the near future [7].

In urban as well as in rural areas, especially in rapidly urbanizing cities, the problems and issues of solid waste management are of immediate importance. However, it has been discovered that most households are struggling with how to manage their waste.

Therefore, the above scenario motivated the investigator to assessthe knowledge, attitude and practice of adults on proper disposal of waste. And present study attempted to find the answers for following questions: Do adults have proper knowledge on disposal of waste?What kind of attitude the adults have towards disposal of waste?Whether the adults areproperly practicing disposal of waste? And is there a relationship between knowledge, attitude and practice of adults on proper disposal of waste?

Methods

Non-Experimental design and descriptive approach was used to assess the knowledge, attitude and practice among adults on proper disposal of waste. The population of research study was adults who resided in Bastwad at Belgaum, Karnataka. 50 adults were selected by employing non-probability convenient sampling technique.The data were collected using tool which consisted of four distinct parts. Part I consisted of demographic data that included 09 items, part II entailed15 items to assess the knowledge on proper disposal of waste, part III consisted of 10 items of attitude on proper disposal of waste, and part IV comprised10 items to assess practice on proper disposal of waste.The tool was found to be reliable (r =0.8). The data were collected through self-reporting questionnaire. Eachsubject took 25-30 minutes to answer the questions. Informed consent from each subject and permission from respective authority were warranted to evade ethical issues. Both descriptive and inferential statistics were used to analyze the data.

Results

Section I: Findings Related to Demographic Data

Regarding the age, 48% adults belonged to age groupof 20-25 years, 22% adults belonged tothe age groupof 26-30 years, 6% adults belonged to the age group 31-35 years and only 24% adults belonged to the age group of 36-40 years.

With regard to education, 24% subjects had primary education, 30% had secondary education, and 46% had education above degree.While considering the type of family, 48% were from nuclear family and 52% were from joint family.

More than half subjects, that is, 53% hadRs.10,001-15,000 income per month, 27% adults had 5,000-10,000 income per month and remaining 20% had more than Rs.15000 income per month. As far as information regarding proper disposal of waste is concerned, 61% adults hadsome sources of information and remaining adults did not have any sources of information.

Section II: Percentage Distribution of Subjects by their Knowledge, Attitude and Practice on Proper Disposal of Waste

Data in above figure describes that 5(10%) were having inadequate knowledge, 24(48%) had moderately adequate knowledge and 21(42%) had adequate knowledge on proper disposal of waste. The mean value of the knowledge on proper disposal of waste was 13.56 with standard deviation of 2.71 which fell in the moderately adequate level. The overall percentage distribution of knowledge of adults on proper disposal of waste was 67.8%.

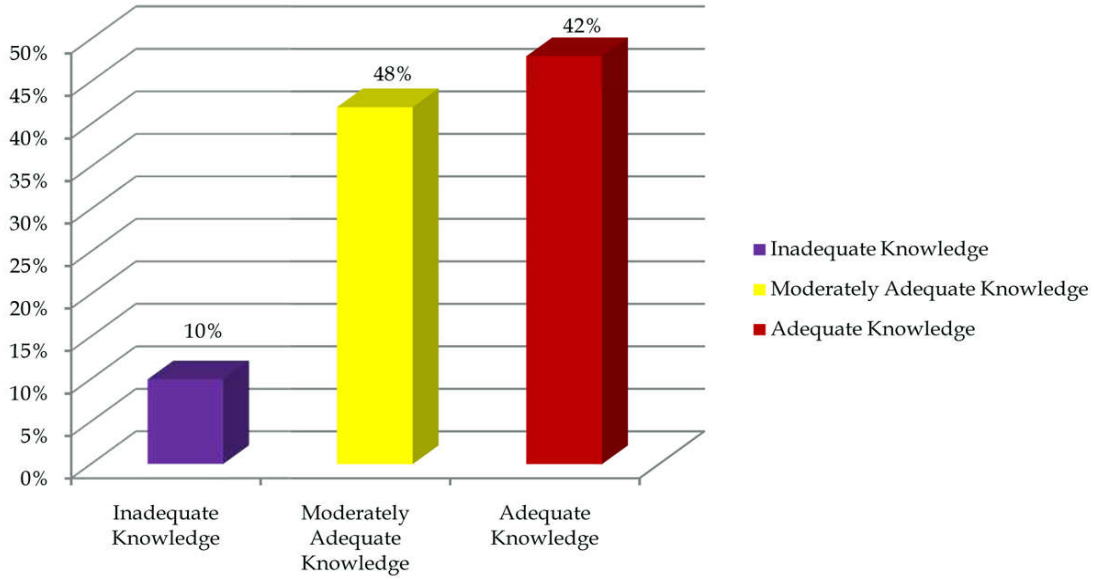

Fig. 1: Percentage distribution of subjects by their knowledge on proper disposal of waste.

Table 1: Percentage distribution of adults by their attitude on proper disposal of waste.

Attitude	Number	Percentage (%)
Negative Attitude (1-49%)	00	00
Moderately positive attitude (50-74%)	31	62
Positive attitude (75% and above)	19	38

Table 2: Percentage Distribution of respondents by their practice scores on proper disposal of waste.

Practice	Number	Percentage (%)
Unacceptable Practice (1-49%)	00	00
Moderately Acceptable Practice (50-74%)	13	26
Acceptable Practice (75% and above)	37	74

The above table illustrates that 31(62%) subjects had moderate positive attitude, and 19(38%) had positive attitude. The mean value attitude on proper disposal of waste was 36.58 with standard deviation of 4.72.

The above table shows that 13(26%) subjects reported moderately acceptable practice and 37(74%) reported acceptable practice. The mean value of practice on proper disposal of waste was 16.28 with standard deviation of 2.5.

Section III: Correlation between Knowledge, Attitude and Practice

The r value (0.07756) showed that there was apositive correlation between knowledge and attitude. Interestingly, a negative correlation was found between knowledge and practice (r =-0.00334). Also, a negative correlation between attitude and practice was found (r=-0.6210).

Section IV: Association between selected demographic variables and knowledge, attitude and practice on proper disposal of waste.

Statistically significant association was found between monthly family income and knowledge scores ofrespondents on disposal of waste at $p<0.05$ level.No statistically significant association was found between knowledge scores on disposal of waste and other demographic variables of adults. There was no significant association between any of the demographic variables and attitude as well as practice scores on disposal of waste among adults.

Discussion

The findings of the present study had shown that a vast majority of study subjects had moderately adequate to adequate knowledge on proper disposal of waste and this knowledge definitely influenced their attitude towards disposal of waste as shown by coefficient of correlation value. More than half of adults

were found to have moderately positive attitude towards proper disposal of waste. Almost three fourth of the adults were found to be practicing acceptable methods of proper disposal of waste. The demographic variable family monthly income was found to be significantly associated with the mean knowledge scores of respondents on disposal of waste, which may imply that economic status of people affects their knowledge on sanitation and proper waste disposal.

The findings of the present study havesomewhat contrasting correlation with thefindings of across-sectional study conducted by Ethrampoushand Baghianion knowledge, attitude, and practice about solid waste disposal and recycling among 237 adolescents. The instrument of research was a self-administered questionnaire. Knowledge level of 66% males was good while that of 34% was low. The knowledge of 51.4% females was low. The difference between the knowledge of males and females was significant ($p<0.016$). Pertaining to the method of segregation and separation of solid waste, 72.1% believed that the best method was segregation at home and 9.6% deemed that the segregation must be done in the place of disposal. More than 66% of them did not have any action in segregating and recycling of solid waste [8]. In the present study, comparison of knowledge of male and female sample on waste disposal was not done and a vast majority of the sample was found to possess moderately adequate to adequate knowledge on waste disposal.

Conclusion

India produces huge amount of waste and is facing a big problem of its safe disposal. Poor environmental sanitation is a problem in both rural as well as urban India. Poor environmental sanitation is a source of lots of communicable diseases. As we know thatmodification of human behavior could be possibleonly through proper education in any aspect. So, if people get adequate knowledge and motivation on waste management technique, they may be able to prevent most of the communicable diseases and maintain environmental sanitation which restores the individual's health. This study can be replicated with a larger sample sizefor wider generalization of findings. The systematic reviews of various studies can alsobe performed with a view to develop methods for proper disposal of waste. And, the short term training program on proper disposal of waste and its effectiveness can be analyzed through pre and post-test methods. The government and non-governmental organizations should create more awareness on environmental sanitation and proper disposal of waste, and work in collaboration with rural and urban people to achieve the predefined objectives of 'Swach Bharat Abhiyan'.

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Review Article

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Internet Addiction: The Underlying Causes and Effects A Perspective Study

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Abstract

Internet addiction is a current days burning issue and an emergency, which needs societal attention as a whole. This paper develops an overview about the underlying causes and effects of internet addiction. The indexed studies were reviewed for the findings. Finally the paper suggests that sensitising and increasing awareness among people about life style modification as the strategic management to prevent and manage internet addiction.

Keywords: Internet; Addiction; Cause; Effect; Perspective.

Introduction

With the growing digitalisation of the whole world, importance of internet is increasing in everyday life day by day. People are using various on-line resources each day which made it difficult to imagine life withoutinternet access. Internet is the greatest gift from technology which makes everything available only with few clicks anywhere, anytime and thus made life easy. Internet is a window opening to the whole world. In addition to communication as prime purpose, it also facilitate recreation by games, internet banking, finding locations, preparing presentations, text mailing, music and many more. One can get enormous amount of informations available online that can satisfy one's curiosity for wisdom and knowledge in all the areas.

However, apart from the uncountable benefits of internet use, it affects individual's life in a negative way too. Due to techno communication, less importance is given to personal contact thus personal and one-to-one interaction is slowly losing its eminence. Because of the easy and 24 x 7 accessibility, people spend maximum time online, which leads to difficulty in doing their daily activities in due time, poor fragmented sleep, late bed time and early wake up, all these seriously affects their mental health and quality of life. Internet has brought a great epidemiological transition in the whole world. All are so much absorbed in the gadgets that, enable to notice what's going in the surrounding. Alone in group, poor group interaction; even though when sitting together for dinner, we are enjoying neither food nor togetherness instead busy with online activities. People are lacking emotional pleasure, even though in groups but not connected.

According to various reports and researches, it is found that internet develops obsession among people to be continuously online, which is significantly altering brain's perception for the device. According to Chinese Ministry of Health, staying online more than six hours a day and having adverse reactions from not being able to go online, are symptoms of Internet addiction disorder (Williams, 2008) [1]. The terms normal Internet usage and addictive usage are still debatable because research in the area of Internet addiction is still very less. Holmes, defines normal Internet usage to mean any amount of usage that does not exceed 19 hours per week (Holmes 1997). This definition is derived from a survey conducted. Young, offers a more generous definition for "normal Internet usage." According to her, an addicted person is one who spends at least 38 hours per week or 8 hours per day on the Internet (Young 1998). Specialists in the field of pathology offer the most restrictive definition for classifying Internet usage. Pathological theory states that any person who reported 2 to 3 hours of Internet use per week is a normal user. Anyone who logged 8.5 hours or more per week is classified as a pathological user (Morahan; Schumaker 1997) [2].

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The concept of internet addiction refers to the use of internet which in turn causes various problems in individual, social and professional aspects (Greenfield, 2000). Goldberg defined "internet addiction" and tried to identify the diagnosis criteria for the first time. He jokingly adapted the substance addiction criteria to uncontrolled internet use e.g. fantasies and dreams about internet use as well as voluntary and involuntary finger movements (Goldberg 1995) [3].

In US, studies on internet addiction were originated by Dr. Kimberly Young, who presented the first research on internet addiction in 1996. She has given a very precise definition on internet addiction as "the presence of the three basic factors e.g. preoccupation, tolerance and withdrawal symptoms in any individual for internet use". The term preoccupation refers to individual's mind constantly thinking of what he / she will be going to do online later while he / she is still in other offline work, tolerance refers to spending considerably longer time online to feel the same level of satisfaction as before and withdrawal symptoms refers to exhibition of violent behaviors when the individual is not allowed to use internet and such behaviour is not normally seen in other circumstances [4].

The highest incidents of internet addiction were found in the Middle East (10.9%) and the lowest in North and West Europe (2.6%). North America had a prevalence rate of 8%, Asia had 7.1%, followed by South and East Europe on 6.1%, Oceania on 4.3% and no reports were found in South America [5].

Sub Types of Internet Addiction [6]

Internet addiction further can be classified according to its particular purpose of use because of obsession to that particular purpose.

- Social networking sites e.g. face book, twitter etc.
- Instant messaging e.g. whatsapp, Skype, viber, imo etc.
- Compulsive search for informations through Google
- Internet Gaming
- Compulsive online shopping
- Pornography

Impact on Life [7-12]

⊙ *Physical Problems*

- *Overweight* due to reduced physical activity, eating unhealthy food.
- *Pains and aches* e.g. stiffness, burning feeling and pain in hands due to continuous holding the mouse and moving the finger on the key board, headache, neck pain, back pain due to sitting in the same position for hours.
- *Eye problems* e.g. dryness andredness of eye and irritation etc. due to continuous stairing at the computer screen.
- *Sleep deficits* e.g. disturbed fragmented sleep patterns due to late night logins, day time drowsiness, lethargy etc.
- *Impairment of daily activities* e.g. Poor personal hygiene as showers, face washing, brushing hair and teeth, all get less priority.

⊙ *Psychosocial/Behavioural Problems*

- *Poor IPR/communications* – Poor Inter Personal Relationship, reduced communication, lack of cooperation and inability to build relationship, withdrawal from social activities, hiding feelings from family and friends, likes isolation, poor participation in group activities, and lack of interest in social gathering etc.
- *Poor eating habits* - Eating irregularities, skipping meal, eating unhealthy food because don't want to take time to eat properly, rather than eating healthy, balanced meals, eat food that is quick and usually unhealthy.
- *Low frustration tolerance level* - Temper tantrum, irritable, aggressive, abusive, getting irritated easily if anyone interfere in internet use.
- *Poor time management* - Facing time management problem as maximum time spending in online activities.
- *Poor work performance* – lose of job due to poor performance at job, incomplete assignment, difficulty in focussing in work, utilising office hour for other non-purposeful online search.

Possible Reasons [13-14]

The **'*P*'s** can lead to such addiction

⊙ *Psychological Factors*

- Having low mood, low confidence, nervousness, sad mood, feelings of loneliness, boredom
- Need for excitement and experimentation as staying online is very funny and engaging because internet facilitates gaming, chatting on social

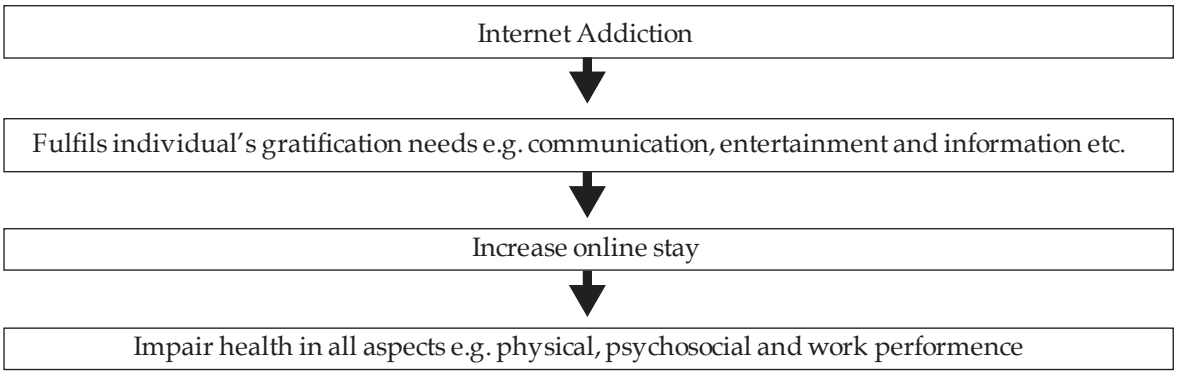
networking site, online shopping, internet gambling, pornography etc.

- Provides secure feelings because of anonymity.

⊙ *Personality Factors*

- Being shy and introvert/extrovert need for recognition and approval

Psychopathology



Gratifications Theory by LaRose, Mastro, & Eastin, 2001

Diagnostic Evaluation [15]

Young (1996) developed a eight-item questionnaire to screen internet addiction which is a modified criteria for pathological gambling:

1. Do you feel preoccupied with the Internet (think about previous on-line activity or anticipate next on-line session)?
2. Do you feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction?
3. Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?
4. Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?
5. Do you stay on-line longer than originally intended?
6. Have you experienced the loss of significant relationship, job, educational or career opportunity because of the Internet?
7. Have you lied to family members, therapist, or others to hide the extent of involvement with the Internet?
8. Do you use Internet as a way of escaping from problems or of relieving dysphoric mood, feelings of helplessness, guilt, anxiety, depression etc?

Individuals were Considered "Addicted" when Answering "yes" to Five (or more) of the Questions.

Strategic Management [15-19]

⊙ *Aims of Strategic Management*

- Management and cure of impairments due to internet addiction
- Reinforcement of preventive measures by increasing awareness about various aspects of internet addiction

Management and cure of impairments due to internet addiction

⊙ *Physical Problems*

- *Overweight*. Take nutritional supplements e.g. Green leafy vegetables, fresh fruits etc. Take food regularly and timely. Avoid sitting in front of the TV or, computer, drinking coke/Pepsi and munching potato chips, eating junk foods, e.g. pizza, burger, French fry, pastries, carbonated soft drinks etc., skipping meals.
- *Pains and aches*. Follow work station ergonomics. Take regular breaks. Adjust computer chair with arm rest and full back support. Keep back straight and upright. Table height must be 29 inch above the floor. Use keyboard, mouse by wearing wrist-guard. Place keyboard at elbow height. Keep wrist straight, while using mouse or key board. Pain and spasm in the wrist referred as carpal tunnel syndrome.
- *Eye problems also referred as computer vision syndrome*. Keep a distance of about 45cm from the monitor. Blink consciously while working on the computer. Follow 20/20/20 rule: take 20seconds

break in every 20 minutes interval, and see objects 20 feet away, e.g. sky, windows. Adjust font size and brightness and contrast to meet the visual needs of the user. In severe case consult a doctor.

- *Sleep deficits*. No late night logins, as the light inhibit sleep onset. Set some rules like, lights out, technology off, gathering phones in a central place at night. Avoid taking large meal, caffeine, excessive fluid intake, in evening and before bed, eating, reading or watching television in bed.Fix your sleep and wake time. It helps refreshing feelings throughout the day. Follow routine of activities in everyday life. To induce sleep, create comfortable cool dark sleep environment, establish relaxing habits at bedtime such as meditation, take warm bath before bed.
- *Impairment of Daily Activities*. Fix time slot for all the daily activities e.g. wake-up time, exercise, bath, meal and net surfing etc.

⊙ *Psychosocial/Behavioural Problems*

- *Poor IPR/communications*. Have family time, make all family members sit together - Attempt to take any two meals with your family or, do yoga, meditation together. Use this time to connect with each other. It will help in maintaining a loving relationship with the family members, brings all family members close to each other. Watch TV together. Play some indoor games together. Co-view and co-play digital media. Keep computer in common areas.
- *Learn stress management techniques* as follows, Awareness.
- The initial step in managing stress is awareness. If one becomes aware of stressors, he or she can avoid or accept them.

Relaxation

- Practice relaxation techniques e.g. sports, jogging, physical exercise, breathing exercise etc.

Meditation

- Practice meditation 20 minutes, once or, twice daily.
- Select a quiet place and assume a comfortable position e.g. Sitting in a chair with feet flat on the floor approximately 6 inches apart, arms resting comfortably in the lap/ cross – legged on the floor or on a cushion
- Focus and count breaths in and out.
- Select a word or mantra and repeat many times, prevent distracting thoughts.
- Practice the selected focus for 10 to 15 minutes a day.

Interpersonal Communication

- Talking the problem out to a empathetic individual e.g. family or, friend
- Writing about the feelings on a diary.

Problem Solving

- Assessing the facts of the situation
- Formulate goals for the resolution of the stressful situation
- Think for the alternatives for dealing with the situation
- Determine the risks and benefits of each alternative
- Select the best alternative, implement and evaluate the outcome
- If the first alternative is ineffective then select and implement the second option Pets.
- Many psychological studies uncovered the evidence that those, who care for pets, especially dogs and cats, are better able to cope with the stressors of life. The physical act of stroking or, petting a dog or, cat can be therapeutic. It gives the animal an intuitive sense of being cared for and at the same time gives the individual the calming feeling of warmth, affection and interdependency with a reliable, trusting being.

Music

- Listening music reduces depression, elevate mood and stimulate motivation.

Deep Breathing Exercises

- Sit, stand, or lie in a comfortable position, ensuring that the spine is straight.
- Place one hand on your abdomen and the other one on the chest.
- Inhale slowly and deeply through your nose. The abdomen should be expanding and pushing up on your hand. The chest should be moving only slightly.
- When you have breathed in as much as possible, hold your breath for a few seconds before exhaling.

- Begin exhaling slowly through the mouth, pursing your lips as if you were going to whistle. Pursing the lips helps to control how fast you exhale and keeps airways open as long as possible.
- Feel the abdomen deflate as the lungs are emptied of air.
- Begin the inhale – exhale cycle again. Focus on the sound and feeling of your breathing as you become more and more relaxed.
- Continue the deep breathing exercises for 5 to 10 minutes at a time.

Mental Imagery

- Sit and lie down in a comfortable position.
- Close eyes
- Imagine that you and someone you love are walking along the seashore. No other people are in sight in any direction. The sun is shining, the sky is blue, and a gentle breeze is blowing. You select a spot to stop and rest. You lie on the sand and close your eyes. You hear the sound of the waves as they splash against the shore. The sun feels warm on your face and body. The sand feels soft and warm against your back. An occasional wave splashes you with a cool mist that dries rapidly in the warm sun. The fragrance of your suntan lotion wafts gently and pleasantly in the air.
- You lie in this quiet place for what seems like a very long time, taking in the sounds of the waves, the warmth of the sun, and the cooling sensation of the mist and ocean breeze. It is very quiet. It is very warm. You feel very relaxed, very connected. This is your special place. You may come to this special place whenever you want to relax.

Conclusion

Technology is a tool, which on its own has no use. It becomes boon or bane depending upon the purpose of use, for example a doctor could use the CT scan to diagnose a person's illness and take the necessary action. The same doctor could also use the CT scan to determine whether the unborn child is a female, and if yes, get it aborted. In both cases the CT scan does the same function it is expected to. The difference is in the usage; here the culprit is not technology, but the person using it. One can use a knife to cut vegetables or cut a rope, and the same knife canbe used to murder someone. So who is at fault here, the knife or the owner?

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Review Article

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Welfare of Elderly in India

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Abstract

The size of elderly population in India is increasing over time. Long term care, elder abuse and retirement are some of the special concerns of old adults. Government of India has taken many initiatives for welfare of elderly.These initiatives envisage State support to ensure financial and food security, health care, shelter and other needs of older persons, and protection against abuse. Many social, economic and familial factors have triggered the need for old age home facilities for the older adults. Many states in India have provided for old age homes run by either government or non-governmental organisations. However, these are not adequate to cater to the large and growing population of elderly. There are now many retirement colonies, resorts coming up, which are a far cry from the old age homes synonymous with charitable institutions for the helpless elderly.

Keywords: Old Age Homes; Elderly; Old Adults; Retirement Township; Welfare.

Elderly People-India at a Glance

Elderly or old age consists of ages nearing or surpassing the average life span of human beings. The boundary of old age cannot be defined exactly because it does not have the same meaning in all societies.According to 'National Policy on Older Persons' (1999), 'senior citizen' or 'elderly' is a person who is of age 60 years or above [1].

According to Population Census 2011 there are nearly 104 million elderly persons (aged 60 years or above) in India; 53 million females and 51 million males. Both the share and size of elderly population is increasing over time. From 5.6%in 1961 the proportion has increased to 8.6% in 2011. For males it was marginally lower at 8.2%, while for females it was 9.0%.The life expectancy at birth during 2009-13 was 69.3 for females as against 65.8 years for males.The old-age dependency ratio climbed from 10.9% in 1961 to 14.2% in 2011 for India as a whole.Most common disability among the aged persons was locomotor disability and visual disability as per 2011 census [2].

Special Concerns of Elderly

- *Retirement:* Retirement has both social and economic implications for elderly individual. Because retirement is generally associated with reduction in personal income, the standard of living after retirement may be adversely affected [3].
- *Long-Term Care:* The concept of long-term care covers a broad spectrum of comprehensive health and wellness and support services to provide the physical, psychological, social, spiritual and economic needs of elderly people with chronic illness or disabilities. Older population is often viewed as an important long-term care target group.Women are at greater risk of being institutionalized than men are, not because they are less healthy but because they tend to live longer and thus, are usually older and more likely to be widowed [3].
- *Elder Abuse:* Abuse of elderly individual may be psychological, physical, financial, sexual and intentional or unintentional neglect. Another type of abuse involves abandoning elder individual at emergency departments, nursing homes or other facilities [3].

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Government of India's Initiatives for Welfare of Elderly

- ***Integrated Programme for Older Persons (Ipop)***

The Scheme launched in 1992, was revised with effect from 01.04.2008 and 01.04.2015. The objective was to improve the quality of life of elderly by providing food, shelter, medical care and entertainment opportunities. The following are some of the projects under this scheme:

- Maintenance of old age homes, respite homes
- Mobile medical care unit
- Day care centres, physiotherapy clinics
- Helplines and counselling for older persons [2]

- ***The National Policy on Older Persons (Npop)***

NPOP was announced in 1999 to ensure well-being of the elderly. The Policy envisages State support to ensure financial and food security, health care, shelter and other needs of older persons, equitable share in development, protection against abuse [2].

- ***The Maintenance and Welfare of Parents and Senior Citizens Act, 2007***

The act provides for:

- Maintenance of Parents/ senior citizens by children/ relatives made obligatory through tribunals
- Penal provision for abandonment of senior citizens
- Establishment of Old Age Homes for Indigent Senior Citizens[2]

Old Age Homes

Old age homes are meant for senior citizens who are unable to stay with their families or are destitute. States in India such as Delhi, Kerala, Maharashtra and West Bengal have developed good quality old age homes. These old age homes have special medical facilities for senior citizens such as mobile health care systems, ambulances, nurses and provision of well-balanced meals. Apart from food, shelter and medical amenities, old age homes also provide yoga classes to senior citizens. Old age homes also provide access to telephones and other forms of communication so that residents may keep in touch with their loved ones. Some old age homes have day care centres. These centres only take care of senior citizens during the day. For older people who have nowhere to go and no one to support them, old age homes provide a safe haven. These homes also create a family like atmosphere among the residents. Old age homes have two kinds of facilities:

- Independent living
- Assisted living

The need to have old age homes-some reasons

- Disintegration of joint family system in India
- Life expectancy is steadily increasing, thus increase in elderly population
- Cities are no longer safe
- Unfriendly neighbours
- High cost of living
- Scanty returns on savings
- Insecurity, loneliness, lack of companionship
- Abuse, neglect by children, grandchildren
- Children moving abroad or other states for education, career
- Elders have started moving out of their homes in search of peace, joy, celebration of life with a group of people who share the same concerns
- Financially independent senior citizens prefer to stay in retirement homes/resorts instead of languishing in the old fashioned old age homes [4]

National survey has indicated that nearly 5% of the senior citizens in the country have no one to look after them as they either do not have children or are neglected by them. Only 32% of the senior citizens get pensions, while 38% of the age group do not stay with their children [4].

Almost 15 million elderly Indians live all alone and close to three-fourths of them are women. In some states like Tamil Nadu the proportion of such 'single elders' is even higher with one in eleven of those aged above 60 living alone. One in every seven elderly persons in India lives in a household where there is nobody below the age of 60. In states like Andhra Pradesh and Tamil Nadu, a quarter of the elderly population lives in such all-elderly households [5].

There are more than 1000 old age homes in India (as per govt. of India). Detailed information of 547 homes is available. Out of these, 325 homes are free of cost, while 95 old age homes are on pay and stay basis and 11 homes have no information.A total of 278 old age homes all over the country are available for the sick and 101 homes are exclusively for women.Kerala has 124 old age homes, which is maximum in any

state [4]. However, as per daily newspaper, The Hindu (20th Sep, 2015), this number is not adequate to cater to the large and growing population of elderly in the state [6].

Retirement Townships/Colonies/Resorts

- Financially independent elderly want to live independently. From an era where old age homes were synonymous with charitable institutions for the helpless elderly, we have moved to far more refined paid homes like retirement townships.
- Three out of four senior people are open to move to an assisted senior living community [7].

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Role of Micronutrients in Psychiatric Disorders

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Abstract

Research evidences suggest about the association of deficiency of micronutrients with psychiatric disorders. The relation between micronutrient deficiency and psychiatric disorders are bidirectional. Identification of micronutrient deficiency in psychiatric disorder and psychiatric evaluation in patients with micronutrient deficiency are highly essential. Understanding this association will help the clinician for appropriate use of micronutrients in clinical practice.

Keywords: Micronutrients, Psychiatric disorder, Clinical Practice

Nutritional deficiency in psychiatric disorders can be the cause as well as the consequence. Deficiency of micronutrients and vitamins, which act as co-factors in cascade of steps of neurotransmitter synthesis may result in genesis of various psychopathology [1]. At the same time psychiatric illness may result in deficiency of micronutrients, which can be due to decreased intake or increased demand. Another potential reason may be mal-absorption. Patients using alcohol, nicotine, tea, coffee commonly interfere with the absorption of micronutrients like- iron and zinc [2]. Strict vegetarians are also vulnerable for deficiency of vitamins and micronutrients, which are abundantly found in animal sources. Patients taking antidepressants (selective serotonin reuptake inhibitors) and mood stabilizers (valproate, lithium and carbamazepine) frequently have gastric irritation and dyspepsia. Similarly, patients suffering from psychiatric disorders often experience drug induced gastritis for which they receive antacids for long time; it also alter the gastric p^H. The change in gastric as well as intestinal biochemical milieu may cause impairment of absorption of micronutrients. Many patients with psychiatric disorders are prescribed calcium supplementation for several reasons, which interferes with the absorption of iron. Supplementation of iron orally, may not improve the body store of iron, if it is supplemented with calcium. Hence, careful dosing is required for an effective outcome. Deficiency of several nutritional elements may have overt manifestation (skin lesions, ulcers in mouth, Bitot's spot in eye, alopecia, etc) or covert manifestation (pica, irritability, lethargy). Globally, iron deficiency is one of the common micronutrient deficiency [3], which can have both overt manifestation (pallor, Koilonychia) and covert manifestation (lethargy, pica, breathlessness, restless leg syndrome; etc) [4,5]. Deficiency of iron, increases the risk of mood disorders, neurodevelopmental disorders, anxiety disorders as well as ADHD [6]. Low serum folate and vitamin B12 is associated with depression. Biotin deficiency may cause alopecia. S-adenosyl- methionine (SAMe) is a donor of amino acid l-methionine, has an important role in treatment of depression. It has antidepressant properties and it also potentiates the effect of antidepressants [7]. Similarly patients with anorexia nervosa, need zinc supplementation for gaining weight [6].Evidences suggest about possible implication of vitamin C and E in obsessive compulsive disorder (OCD). In studies on patients with OCD, the plasma level of Vitamin C and E was found to be lower than healthy controls [8, 9]. Vitamin D is found to be a useful augmenting agent in treatment of depression. In a 8 week trial, patients with depression receiving fluoxetine along with 1500 IU/day of vitamin D3 had shown significantly better response than patients receiving fluoxetine alone[10].

Low vitamin D concentrations were found to be associated with poorer executive function, processing speed and visuo-perceptual skills. Vitamin D may

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attenuate amyloid-β (A β) accumulation by stimulating the phagocytosis of the Aβ peptide and by enhancing brain-to-blood Aβ efflux transport at the blood-brain barrier, resulting in a decreased number of amyloid plaques. Maintaining vitamin D concentration in body may be helpful in preventing development of executive dysfunction, hippocampal atrophy and progression of vascular brain injury [11]. Severe vitamin D3 deficiency might be responsible for lack of inflammatory response and low mood in patients with long-term eating disorders like anorexia nervosa and bulimia nervosa. So vitamin D3 may be used as anti-inflammatory molecule for novel therapies in the treatment of long standing eating disorders [12]. High homocysteine level due to vitamin B12 deficiency may leads to increased oxidative stress and development of Autism spectrum disorder. These deficiencies can either play a role in the etiology of Autism or it can occur as a consequence of the disease [13]. Vitamin D level is found to be lower than normal in the children with autism. However, there are two possibilities- either children with ASD are born with lower vitamin D levels, or develop low levels due to less sun exposure than typically developing children [14]. Pyridoxine and magnesium deficiency is associated with Autism. Studies revealed that high dose pyridoxine and magnesium is helpful in the management of autism [15]. Low Omega-3 fatty acid is associated with depression and bipolar disorder as evidenced by deficits in erythrocyte docosahexaenoic acid (DHA) composition [16]. Consuming 1.5 to 2 gram/ day of eicosapentaenoic acid (having omega-3 fatty acids) has been shown to stimulate mood elevation in depressed patients. However, doses higher than 3 gram/day omega-3 fatty acids do not present better effects and may not be suitable for some patients, such as those taking anti-clotting drugs [17]. Vanadium levels are found to be elevated in patients with bipolar disorder, which attributes to the symptoms of mania, depression, and melancholy. A double-blind, placebo controlled study revealed the effectiveness of single dose of 3 gram vitamin C in decreasing manic symptoms in comparison to placebo by preventing the toxic effect of vanadium[18]. Disturbances in amino acid metabolism like serotonin and glycine have been implicated in the pathophysiology of schizophrenia. The negative symptoms of schizophrenia (socially withdrawn behaviour, apathy and emotional blunting) that do not respond to the existing conventional medication, have been shown to improve by 30 gram of glycine per day [17]. Deficiency of amino acids - tyrosine and tryptophan, which are the precursor of neurotransmitters dopamine and serotonin leads to depression and aggression. So, diets rich in these amino acids are helpful in reducing depression and aggression. Low selenium intake is found to be associated with low mood and anxiety [8]. Vitamin B1 is a critical cofactor in glycolysis and the tricarboxylic acid cycle. Vitamin B1 (thiamine) deficiency have been reported in chronic alcoholics, protracted vomiting during pregnancy and chronic malnutrition. Vitamin B1 deficiency can result in Wernicke encephalopathy (Confusion, ataxia and nystagmus) and Wernicke-Korsakoff syndrome (confabulation and amnesia - both anterograde and retrograde) [19]. Vitamin B6 (pyridoxine) acts as co-enzyme for the synthesis of various neurotransmitter e.g. serotonin, dopamine and gamma aminobutyric acid (GABA). Deficiency of these neurotransmitters has been reported in the patients of depression. So vitamin B6 can be effective in the patients of depression. Vitamin B6 deficiency have been associated with seizure and mental retardation in infants [19]. Iodine deficiency can result in hypothyroidism which result in secondary depression [19]. Vitamin E (acting as antioxidants) deficiency have been associated with mild cognitive impairment, Alzhiemer's disease and tardive dyskinesia [20].

Deficiency of micronutrients may cause treatment resistance; may the deficiency be the cause or consequence of psychiatric disorder. The patient may require addition of deficient micronutrient to replenish the body's store in order to get the desired therapeutic response.

To establish the association of micronutrient deficiency with psychiatric disorder, there should be evidences of low level of specific micronutrient in body, which correlate with the onset and progress of psychiatric disorders. Correction of the deficits of micronutrients in body should also result in improvement of symptoms of psychiatric disorders. But, it is often difficult to estimate the levels of most micronutrients in the routine clinical settings as the facility is limited to few advanced centers. The estimation of all micronutrients in body is also a costly affair; hence the health professionals need to evaluate the patient clinically for signs and symptoms of deficiency of micronutrients along with associated psychiatric disorder. Supplementation may be started, based on the deficiency manifestations and evidences regarding the association of the micronutrient with the specific psychiatric disorder along with specific treatment strategy for the psychiatric disorder. A non-response to addition of micronutrient may be considered a cue to evaluate for other possibilities.

Micronutrients may augment the action of various psychotropic medications, reduce the drug induced side effects and can also be effective in reducing the symptom of various psychiatric disorders [21]. So, a wholesome and balanced diet is very much necessary

to combat the manifestations of their deficiency; be it in the field of mental health or otherwise. In regard to prescribing micronutrients in the field of psychiatry, there are only few molecules, who withstand the burden of various researches and still proved to be fruitful in clinical background. Future research also needs to focus on determining the appropriate doses of nutritional supplements in various mental illnesses. In the cases of certain nutrients, psychiatrists can recommend doses of dietary supplements based on previous and current efficacious studies.

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