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Editorial

Second wave of Covid-19 pandemic had been at its peak during the months of April and May, 2021 in India. Spread of infection was reported to be not only by catching it by direct droplet and close contact but also by aerosol, the corona virus remaining in the air in closed spaces where an infected person was present. Severity of infection with increased fatality among young as well as old created panic in people. We lost many more health care workers and our known and near and dear ones. Alas ! An unreparable loss. Besides many lessons this second wave of pandemic taught us is that "Wearing of mask(double), maintaining social distance and hand hygiene became an automatic habit (thank goodness) in most people." Vaccination against Covid-19 which initially was made available for front line health care and other workers only, can now be taken by almost all age groups except children less than 18 years. Trial for vaccination for children has started in India and we expect the children too will get protected against Corona in near future. As the spead and severity of second wave of Covid is slowly trailing down, the fear of the expected third wave ,which, it is said may affect children more than adults, has put the policy makers, health care personnel and parents on an high alert. We only hope, if this third wave comes up and before it starts, all our people including children are protected well through vaccination.

However, it is important that all of us, 'young and old' must pay utmost attention to our health. It is high time we adopt a 'healthy life style'. Yoga, pranayam, exercise, healthy eating, spending time in nature and getting adequate rest and sleep would definitely keep us fit and enhance our immunity. Such balanced health will keep us prepared well, at all times for any calamity like Covid-19 third wave or similar other future biological threats.

Coming to this issue of IJNS, Vol.12, No1, we have some research based articles and short communication. A new column 'COMMENTARY' has been started. Readers are requested to send their articles for publication in this column too.

Happy Reading!

Dr. Usha Mullick Ukande

Guest Editorial

BREAK-UP WITH TRADITIONAL LEARNING: ENHANCING CLINICAL COMPETENCY IN NURSING EDUCATION

*** Jaideep Herbert**

The one thing most people hate is “Change or Transition or Transformation”. Yet, it's the only thing that is going to work for any developing society and that only would lead to its progress. The world is changing at a rapid pace and the education industry and the healthcare systems are also undergoing change with equal speed in the world including India. In the nursing profession, to keep pace with this rapid change and attract the interested learners, we need leading-edge transformational solution that allows us to exceed the expectations of today's society and prepare ourselves and our students for a more demanding population tomorrow.

This fact cannot be denied that the COVID-19 pandemic has changed the landscape for nursing educators as well as students. Teaching Faculty of nursing schools and colleges all over the world are facing the challenge of transition from face-to-face teaching and learning to virtual or screen-based learning especially it poses a challenge for the clinical skills training.

This is the right time to adapt to the change and transformation in nursing education with open mind and thoughtful preparedness. Already a significant gap exists between today's nursing practice and the education. Simply requiring more education will not be sufficient; the quality of nursing education and ways of training must be uniformly brought to a higher state by **“Transforming Teaching into Training”.**

The health care systems and the dynamics of patient population have undergone dramatic changes in the last half-century, but the nurse educators have been seen to teach their students in the same old way (Mostly through lecture method) that they were taught years ago. They are following the curriculum which is designed decades back. Barriers to change remain in place, not least of which is the pressure to meet education and regulatory requirements set by statutary bodies, academic institutions and

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professional organizations. But, why can't nurse educators and administrators overcome such barriers? Surely they can by **"Transforming Content based learning into Competency based learning".** This is possible if they have the desire to do so.

Ever since Covid-19 pandemic broke out in 2020, the alarming rise in morbidity and mortality among hospitalized patients throughout the country heightens concerns about professional competency. Nurses and other health care professionals are under increased scrutiny to provide safe, sensitive and effective care. Likewise, nursing education institutes must take pressure to produce graduates who are capable of providing quality patient care. It is said that situation teaches us, and keeping the current situation in mind where the world requires thousands of nurses, it is our responsibility to prepare them continually with the clinical competency and skills as per the global standards to meet the requirement and enhance patient outcome.

The institutes of nursing education develop curricula, hire qualified faculty, and select learning experiences for students in an effort to train and graduate competent,efficient and effective nurses. Instructional strategies utilized in both didactic and clinical components of nursing education courses are highly influential and these need to be focused. For this, we must leave the old patterns of teaching and training and innovate new and effective strategies. We all know that Healthcare is one of the highest growing industries in the entire world and nurses are the backbone of this industry. Everyday industry is developing new technology and medical procedures to enhance health, therefore, along with the advancement of healthcare industry there is a need for transformation of nursing education system also.

This is the right time for nursing teaching institutions to break-up with traditional learning and enhancing 'Clinical Competency' in Nursing Education by implementing new innovations in education and training delivery pattern such as:

- Increasing use of new technology
- Go for Simulation Based Training
- Make Nursing Curricula More Socially Conscious
- Paper- less teaching-learning by use of technology
- Table top simulation
- Developing 'Concept and Context Based Curriculum'
- Competency based training delivery
- Meaningful Clinical Placements
- Follow International & National

standards-NABH & JCI

- Implement research into practice
- STOP Clinical Training by Non-Practitioner teaching faculty

We, the nursing academics and administrators need to have a fresh look at our curricular strategies and be more focused on our new roles and responsibilities in the light of transformational changes needed in preparing future nurses.

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RELATIONSHIP OF BRAIN DOMINANCE ON LEARNING STYLES AND ACADEMIC PERFORMANCE AMONG NURSING STUDENTS

*** Dr. Supriya, ** Gloria, *** Akshata, **** Sahane, ***** Shrisunder, ******Sandesha, ******* Balu**

Abstract

Students of present generation are stressed due to academic burden and parental pressures. Less consideration is given for students' preference in selecting the learning style, the students are forced to do tasks on college/teacher/university preference and decisions which create problem in performance. The aim of this study was to determine the relationship of brain dominance on learning styles and academic performance among nursing students. Non Experimental Survey Design was used to collect data from 100 nursing students. Modified Brain Dominance Self Test and Study Habit Assessment questionnaire were used as data collection tools in the study. The analysis revealed that majority of the participants were found with left brain dominance and were using left brain study habits. On assessing correlation between brain dominance with academic performance it shows a positive correlation and correlation between study habits and academic performance also shows a positive correlation.

Key words: - Brain Dominance, Learning Styles, Academic Performance, Nursing Students.

Introduction

Two different hemispheres or sides of the brain in an individual are responsible for the manner of thinking. Research also suggest that we prefer one side or the other side of brain for thinking, some people consider themselves as right brained, left brained or whole/balanced brained. To a great degree individual's personality is shaped by the brain type. The dominant type of brain may control individual's study habits, learning styles and even academic grades.

Background

Academic performance is assessed differently in various courses. In Nursing Colleges, assessment of clinical competence is divided into assessment of cognition and assessment of behaviour in practice as proposed by Miller's hierarchical model in 1990 [1]. Cognition or knowledge is assessed most commonly by the

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written method such as Multiple Choice Questions (MCQs), Short Answer Questions (SAQs) and Essay Questions [2-6]. Assessment of clinical practice is done by Objective Structured Clinical Examination (OSCE), short cases/ long cases/ case studies, case presentations/clinical evaluations [7-10]. Many studies have been carried out to associate various factors that may influence one's academic performance [11-13]. Different brain dominance amongst individuals is a widely known fact [14]. As each hemisphere of the brain contributes to certain different functionalities of our body, different persons tend to have their own unique ways of perceiving given information and strategize thereafter in order to respond [15-18]. Different brain dominance affects the way in which one studies the best [18-21]. There is no definite answer to which brain dominance belongs to the more successful individuals as each hemisphere of the brain is not superior to the other, instead have different specialized functions [15,16,20]. However, few researches have proved that left brain dominant students perform better academically [22,23]. Factors affecting academic performance include student's study habit, race, ethnicity, genetic and brain dominance [11,13,24].

Students of present generation are stressed due to academic burden and parental pressures. Less consideration is given for students' preference in selecting the learning style, the students are forced to do tasks on college/teacher/university preference and decisions which create problem in performance. We can draw a conclusion that university, college, teachers and parents need to understand student's brain dominance with the intention of helping them to choose an appropriate learning style based on brain dominance. Students are found to differ from each other and among themselves in varieties of ways and dimensions. These individual differences are influenced by physical, mental, achievement, emotions, interest, aptitude, attitude, beliefs, learning and so on. Notable factor is Brain processing which can influence the academic achievement of the students. Therefore the need is felt to find out the Level and relationship between Brain Dominance and Academic Achievement.

Need of the study:

Brain is a miraculous organ, and each hemisphere of the brain contributes to certain different functionalities of our body. Different persons tend to have their own unique ways of perceiving given information. Different brain dominance affects the way in which one studies the best.

The cerebral dominance of an individual is described as the retaining and processing of information with different modes in his own style of learning and thinking. Researchers have shown that the human left cerebral hemisphere is to be specialized for primarily in verbal, analytical, abstract, temporal and

digital operations (Bogen 1969, Gazzaniga 1970, Ornstien 1972). The same investigation revealed that the right cerebral hemisphere is to be specialized for primarily non-verbal, holistic, concrete, creative, analogical and aesthetic functions

Brain hemispheric dominance is the use of the different sides of the brain in learning and listening patterns that is to mean, the consistence of using one side of the brain over the other.

Characteristics of left brain dominance includes Intellectual, remembers names, verbal response to instructions and explanations, experiments systematically and with control, makes objective judgements, planned and structured, prefers established certain information, analytic reader, reliance on language in thinking and remembering, prefers talking and writing, prefers multiple choice tests, control feelings, not good at interpreting body language, rarely uses metaphors and favors logical problems solving.

Characteristics of right brain dominance includes Intuitive, remember faces, responds to demonstrated, illustrated or symbolic instructions, experiment randomly and less restraint, make subjective judgements, fluid and spontaneous, prefers elusive, uncertain information, synthesizing reader, reliance on imaging in thinking and remembering, prefers drawing and manipulating objects, prefers open-ended questions, more free with feelings, good at interpreting body language, frequently uses metaphors, and favors intuitive problem solving.

Academic achievement in the present socio-economic and cultural context is of paramount importance. Nursing study requires special capabilities because of the diversity and complexity of nursing practice make it necessary to prepare nurses who can think critically and creatively, and who have a sound education in nursing, science, and the humanities , so the teacher of nursing should find a teaching style which will suit all students with their diversity of hemispherical brain dominance to ensure that the processes of teaching and learning will correctly takes place and will reflect on the student's outcome .

Review of Literature:

The related literature is classified under following headings:

1. Literature related to brain dominance.
2. Literature related to study habit and academic performance.
3. Literature related to co-relation among brain dominance and academic performance

Lozgen K, Tatar B, Alkan O, conducted an exploratory survey on "An examination of brain dominance and learning styles of pre-service mathematics teachers" and aim was to establish the relationships between them. Sample was 273 pre-service mathematics teachers. "Brain Dominance Analysis" and "Learning Style Inventory" were used as data collection tools in the study. As a result of the analysis of data, it was determined that pre-service mathematics teachers usually preferred "converge" and "assimilator" learning styles.

Oflaz M, conducted a study on, "The effect of right and left brain dominance in language learning". Sample consisted of 43 students from private school and was divided in two groups. Group A with 21 students and Group B with 22 students which consisted of mixed ability with lower, middle and upper English levels. The tool consisted of quiz which had 20 questions with a 'Yes' or 'No' answer. Same tool was given to teacher also with an aim to help him / her to be aware of his / her teaching style so he / she can complete the missing parts of his / her teaching style. According to the results, 12 of the students are right brained, 5 of the students are left brained and 4 of the students are whole brained in Class A. In Class B, 14 students are right brained, 6 students are left brained and 2 students are whole brained also teacher of Class A had 16 "Yes" answers so she is right brained whereas the teacher of Class B had 7 "Yes" answers so she is left brained according to the results of Learning Styles Inventory (Morris, 2006).Hence, Right brained students showed a good performance in the Vocabulary part while Left brained students did well in the Use of English and Reading parts.

Mubarak N conducted a study on, "Study Habits and Academic Performance of Students". Sample of 270 students were taken from two colleges Govt. Allama Iqbal College for Women, Sialkot and Govt. Technical College for boys, Sialkot. The association between study habits and academic performance was checked by using chi-square test. The results showed that there is significant relationship between study habits and academic performance of the students.

Josepz H. Conducted a study on**,** "Relationships between Learning Styles and Academic Achievement and Brain Hemispheric Dominance and Academic Performance in Business and Accounting Courses." Findings suggest that post-secondary business and accounting instructors should consider testing their students to determine students' learning styles and brain hemispheric dominance so that the instructors may suggest study approaches and methods that may increase academic achievement.

Hailat S, Conducted a study on**,** "Exploring the

Relationship between Brain Dominance and Academic Achievement among a Sample of University Social Studies Students in Jordan". The sample of the study consisted of 123 students who were selected from the social studies courses offered by the Faculty of Educational Sciences. The questionnaire of the study was used to identify those students with left brain and right brain preferences. The results of the study revealed that the majority of students under study have left brain dominance and that their academic achievement was higher than their colleagues who have right brain dominance.

Problem Statement

"A study to assess relationship of brain dominance on learning styles and academic performance among nursing students of selected nursing college in Aurangabad."

Objectives

- To assess brain dominance among nursing students.
- To identify learning styles based on brain dominance among nursing students.
- To correlate brain dominance with learning styles among nursing students.
- To correlate brain dominance with academic performance among nursing students.

Assumption

The study assumes that:

- Brain dominance can affect learning style.
- Learning style can affect academic performance.
- Brain dominance can have correlation with learning style.
- Brain dominance can have correlation with academic performance.

Conceptual Framework: LUDWIG VON BERTALANFFY

General System Model

Research Methodology

Research Approach: Quantitative

Research Design: Non - experimental survey

Sampling Technique: Non - Probability Purposive Sampling

Sampling Criteria:

Inclusion criteria:- The study involves all the nursing students.

Exclusion criteria:- Students who will not be available at the time of data collection.

Description of Tool:-*The tool was based on the review of literature and opinion of expert.

*The tool used for research study consists of demographic variable, brain dominance self

test, study habit assessment tool.

Questionnaire was used for the data collection. Structured questions were prepared based on brain dominance and study habits among students.

Section A (Demographic Variable): It consist of demographic information of the students.

Section B (Brain Dominance Self test): The structured questionnaires consist of statement that describes information related to brain dominance. Tool consist of 18 questions and each question had option A & option B with descriptive statements.

Scoring: Maximum Scores in A Indicates Left Brain Dominance

Maximum Scores in B Indicates Right Brain Dominance

Neutral scores Indicates Balanced Brain

Section C (Study Habit Assessment Tool): The structured questionnaire consists of statement that describes information related to study habit. Tool consisted of 20 questions and had scoring as always and never.

Scoring: Maximum Scores for always indicates Lt Brain.

Maximum Scores for never indicates Rt Brain.

Equal scores indicate balanced brain.

Pilot Study: 'Pilot study is a small scale version of or trial run design to test the methods to be used in large more rigorous study'

The pilot study was conducted in selected nursing college of Aurangabad after achieving validity and reliability of tool. 10 samples were selected by non-probability convenient sampling technique based on the inclusion criteria to assess the feasibility of the study and to decide the statistical analysis and practicability of the research prior administrative permission of the above institute was taken. The researcher approach the subject, informed regarding the objective of the study and obtain consent after assuring the subjects about confidentiality of the data. The finding of pilot study was analyzed.

Data Collection Procedure: Formal administrative permission was obtained from the ethical committee of the institution for conducting the final study. Then investigator approached the concerned authorities of selected nursing college for obtaining the necessary permission and cooperation. Subjects who met inclusion criteria were determined from the selected nursing college. The nature of the study was briefly explained and it was ensured by the investigator that the normal routine of the nursing college is maintained. Written Consent was taken from the participants, explained about the questionnaire, time duration needed; scoring system was explained to the subjects. They were also given assurance regarding confidentiality of their scores.

Findings

Section I (Demographic Variable):- It consists of demographic information of the students that revealed majority i.e. 67% of participants were females, where as 33 % of participants were male. Maximum 60% were in the age group of 18-20 years and rest 40% were between 21-23 years.

Section II: Frequency and percentage of learning styles based on brain dominance among nursing students.

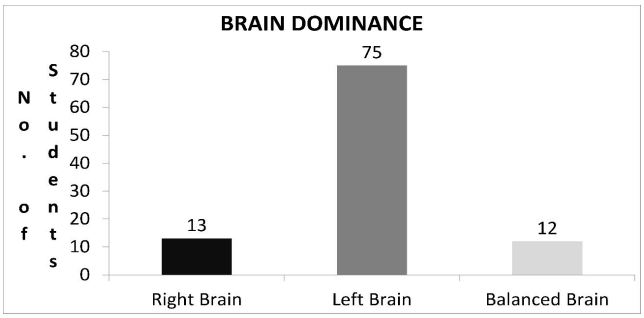

Fig.I Brain Dominance

Fig.I shows that the majority i.e. 75% of participants were found with left brain dominance, where as 13 % of participants were found with right brain dominance & 12% of participants were with balanced brain dominance.

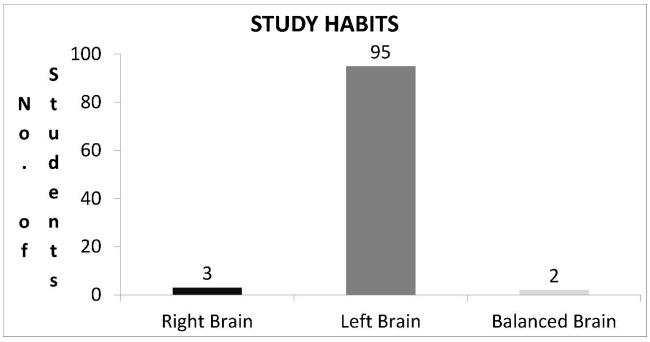

Fig. II Study habits

Fig II : The majority i.e. 95% of participants were using left brain study habits, where as 3% of participants were using right brain study habits and 2% participants were found with use of balanced brain study habits.

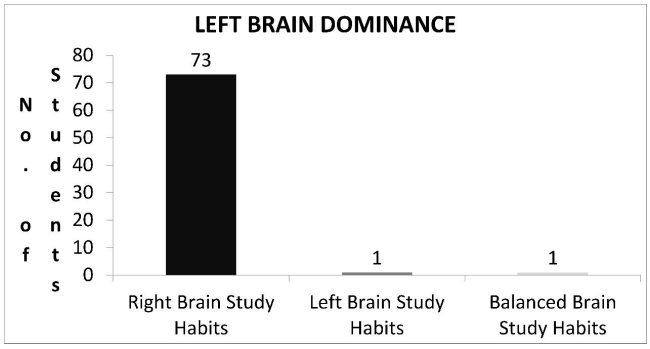

Fig III Left Brain Dominance

Fig III: Out of 75% left brain dominant participants majority of the participants i.e. 73% were using left brain study habits, whereas 1% of participant with left brain dominance was using right brain study habits and 1% of participant with left brain dominance was using balanced brain study habits.

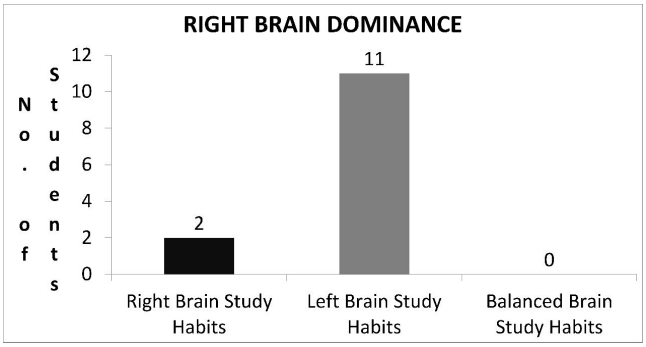

Fig IV Right brain dominance

Fig IV : Out of 13% right brain dominant participants majority of the participants i.e. 11% were using left brain study habits, whereas 2% of participant with right brain

dominance were using right brain study habits and none of them were using balanced brain study habits.

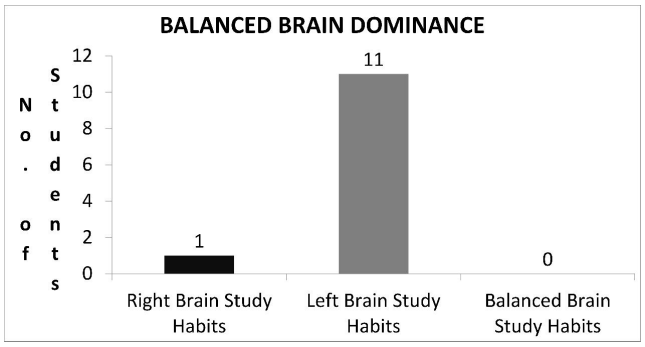

Fig V Balanced brain

Fig V : Out of 12% balanced brain dominant participants majority of the participants i.e. 11% were using left brain study habits, whereas 1% of participant with right brain dominance were using right brain study habits and none of them were using balanced brain study habits.

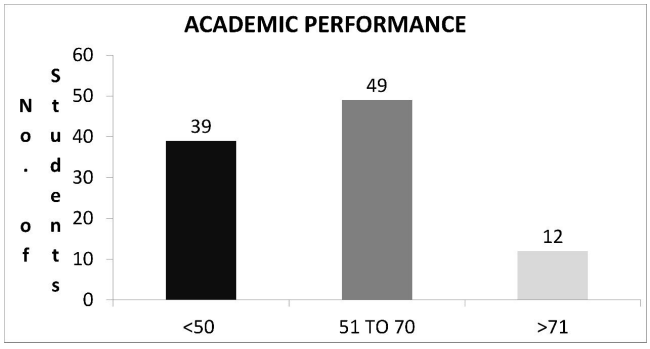

Fig VI Academic Performance

Fig VI: The participants based on Academic Performance majority i.e. 49% of participants have scores in between 51 to 70, 39% of participants have scores below 50 and 12% of participants have scored more than 70.

Section III: Correlation of brain dominance with learning styles among nursing students

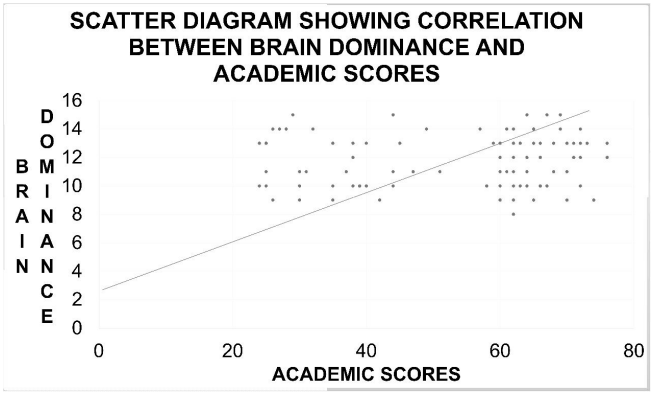

Fig VII Correlation between brain dominance and learning style

Fig VII: The correlation between brain dominance and academic performance which implies although technically a positive correlation, but the relationship between your variables is weak. Thus we can say that relation exist between brain dominance and academic performance.

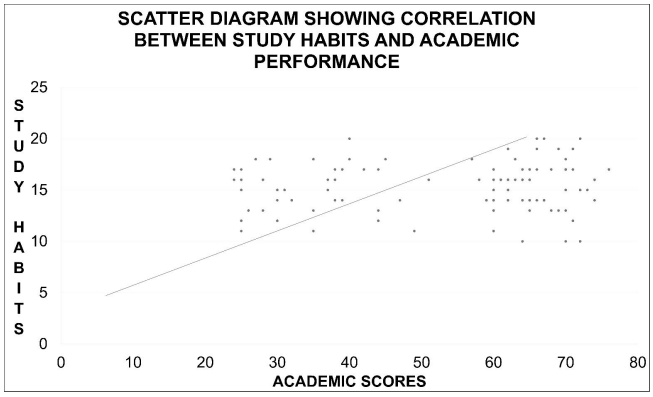

Fig VIII Correlation between Study Habits and Academic Performance

Fig VIII: The correlation between study habits and academic performance which implies

although technically a positive correlation, the relationship between the variables is weak.

A relation is seen, it can be justified by the fact that students have unique brain dominance and use study habits pertaining to it which will definitely help in improving academic scores.

A positive correlation exist means appropriate use of study habits for specified brain dominance will improve academic performance whereas inappropriate use of study habits for brain dominance will decrease the academic performance.

Discussion

The finding of the study has provided an insight information on significant influence of brain dominance on students achievement and outcomes.

Present study findings can be used in academic setting, teachers should categorize the students according to brain dominance to ensure that learning is made easy and effective by using appropriate learning styles. Findings of the study should be useful for the teacher to improve the results by identifying weak students and helping them use appropriate learning habits.

Most of the studies shown earlier in the review of literature support the findings of present study.

Nursing as a profession is very diverse and complex practice and needs special capabilities to render services. The teacher should be able to identify learning styles which will help students to have sound education in nursing, science, psychology and humanities through which multi tasks of critical thinking, creativity and cognitive abilities will be acquired and will be reflected on the students outcome.

The current educational system is designed to prepare students as per work requirement I.e. they are trained to follow instructions and then perform. However in today's rapidly changing world, use of both hemisphere ie right & left is needed, future society and jobs will require more proportion of creative & intuitive thinking and ability to execute.

Thus to prepare nurses during their education period we should be able to identify their brain dominance, help them with appropriate study habits to improve their academic performance as well make them competent enough to use a balanced brain I.e. develop and integrate both sides of the brain and use it as a whole in personal and professional life.

Conclusion: The findings highlight that student with particular brain dominance if uses appropriate study habits enhances the academic performance. And thus can recommend that all schools and colleges can identify the brain dominance of students and accordingly promote students learning styles

for better academic achievements.

Acknowledgement: I am thankful to the management of Kamalnayan Bajaj Nursing College, students and participants in the study. Also I am thankful to Dr. Usha Ukande for her guidance, inspiration and successful publication of this study.

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Conflict of Interest: None

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What does the study convey?

This study conveys there is a need to change our traditional system of teaching and learning and should introduce such methods which will enable nursing students to become competent to face this changing world and its needs through identification of brain dominance.

Who will use the findings?

Findings of the study can be utilized by educational system, academicians, universities, colleges, teachers and students for a better outcome.

How can findings be put into practice?

As nursing education is undergoing reformation in terms of focusing on skill based learning, educational system understanding the pattern of brain dominance should influence the teaching and learning style. Every college should screen the students on admission for brain dominance and further, teachers during their mentor-mentee sessions should guide students as per their capability for use of appropriate study habits to achieve better outcomes.

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"LEVEL OF DISTRESS & DISTRESS TOLERANCE AMONG NURSING STUDENTS"

***Prof. Dr. Blessy Antony ** Dr. Usha Ukande ***Mr. M.K. Acharya**

Abstract

India is considered a young country. The youth that is considered to be the strength of the country also comes across as the most vulnerable to psychological disorders. Beck et al., (1997) reported that nursing students experience higher levels of stress than other professional students. Therefore, a descriptive study to assess the level of distress & distress tolerance among nursing students was done. A quantitative research approach with descriptive cross sectional study design was adopted in the study to test the main objective of the study. This study was conducted in five nursing colleges of Indore. Multi stage sampling was adopted to select samples in the study. 120 nursing students were enrolled in the study. The tools used in this study were K10 and Distress Tolerance Scale. Results revealed that 50% students had mild psychological distress, 33.33% students had moderate psychological stress and as many as 16.67% students had severe psychological stress, whereas nobody came in the category of wellness. Findings also showed the DTS mean score was 41.45 with SD of 10.44. This indicates that nearly half of the nursing students need to work on increasing their tolerance level. The results suggested that the rates of university students that experience psychological stress are substantially higher and also they lack distress tolerance skills. The study concluded the requirement of stress /self-management programs to be included in nursing curriculum, so that students can develop stress management skills.

Key Words: Distress, Distress Tolerance, Nursing Students

Background

Stress pertains to a dynamic interaction between an individual and the environment. An interaction where demands, limitations and opportunities related to work may be perceived as threatening to surpass the individual's resources and skills[1]. Whenever there is a condition, where the individual is left incapacitated to deal with the situation or whenever there arises a state of disequilibrium, this interaction may lead to

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cognitive, emotional and behavioral alterations. India is considered a young country. With a sizeable population, 70% to be specific, falling under the age of 35 years.[2]

Regehr C, Glancy D, Pitts A (2013)[3] revealed in a systematic review that there were concerning rates of anxiety and depression among university students. It was also found that only a small proportion of these students opted for health services intervention from university.

2017 State of Mental Health in America - Youth Data indicated that youth have higher prevalence of mental illness and lower rates of access to care. 11.01% of youth (age 12-17) report suffering from at least one major depressive episode (MDE) in the past year. 7.4% of youth (or 1.8 million youth) experienced severe depression. These youth experienced very serious interference in school, home and in relationships.[4]

Stress is common in medical and nursing students. Pursuing higher education, especially medical education, is considered stressful as it is highly extensive and demanding in nature. [5].

Therefore, there is a need to find out the stress level and address these issues right in the initial years of a student's career. The first year of college when students just move into a new sphere of life makes them prone to stress, anxiety & depression. They are faced with academic compulsions, adjustment issues, and an altogether new setting which they find hard to handle.

Need of the study & Review of Literature:

Students are subject to different kinds of stressors, the most being, pressure of academics with an obligation to succeed, an uncertain future and difficulties of integrating into the system.

It has been observed that nursing schools are known to have a stressful environment that often exerts a negative impact on academic performance and psychological well-being of students. Studies from United Kingdom and India have reported increasing levels of stress among nursing students. [6]

Beck et al., (1997)[6] also reported that nursing students experience higher levels of stress than other professional students. Nursing students face not only academic stress but stress at work during their training period.

It is a known fact that students are subjected to different kinds of stressors, such as the pressure of academics with an obligation to succeed, an uncertain future, and difficulties of getting integrated into the system.[2].

Nursing practice comes with its fair share of distress and contentment. For the period of their clinical training, nursing undergraduates

come across stressful situations. These situations can be as diverse as death of a patient, conflict with physicians, inadequate preparation for actual clinical demand, lack of support from mentors and heavy work-load[7].

Pulido-Martos M, Augusto-Landa J.M. & Lopez-Zafrae. 2012[8]reported that **m**ost common sources of stress among nursing students were related to academics and clinical sources. Reviews also threw light on the fact that distress tolerance was also less among the youngsters. Therefore, the researcher felt a need of exploring the level of distress and distress tolerance of nursing students.

Problem Statement

A descriptive cross-sectional study to assess the level of distress & distress tolerance among baccalaureate nursing students at selected nursing colleges of Indore, M.P, India.

Objectives

- To assess the level of distress among nursing students.
- To find out the distress tolerance among nursing students.
- To associate level of distress with selected demographic variables.

Hypothesis

$H0_1$: There is no statistically significant association between level of distress and selected demographic variables at the significant level of $p \leq 0.05$.

H_1: There is statistically significant association between level of distress and selected demographic variables.

Methodology

Research Approach: A quantitative research approach was adopted in the study to test the main objective of the study.

Research Design: The researcher adopted descriptive cross sectional study design.

Setting: The present study was conducted in five nursing colleges of Indore M.P. All of these colleges come under the Madhya Pradesh Medical Health Science University (MPMSU), Jabalpur.

Population: In the present study, accessible population consisted of nursing students pursuing graduation from five nursing colleges of Indore city (M.P.).

Sampling Technique: The sample was selected through probability sampling. Multi stage sampling was adopted to select samples in the study.

We had initially taken 9 colleges for the study. Randomly of these 9 colleges, 5 colleges were selected for the study using computer generated numbers.

Sample: There were 120 participants from 5

different colleges who were enrolled in the study.

Tools: The tools used in the study consisted of three sections:

A. Socio-demographic variable

B. Kessler Psychological Distress Scale (K10)

C. Distress Tolerance Scale (DTS)

Section A: Socio Demographic Variables

This section consisted of a questionnaire to collect baseline data which consisted of 13 items for obtaining information about age, gender, monthly income of family, type of family, number of siblings, ordinal position among siblings, medium of language in 12th Std., hosteller or day scholar, presence of home sickness, personal problems and academic load.

Section B: Kessler Psychological Distress Scale (K10)

This instrument was developed by Kessler R. professor of health care policy, Harvard Medical School, Boston, USA.

This is a 10-item questionnaire proposed to yield a global measure of distress based on questions about anxiety and depressive symptoms that a person has experienced in the most recent 4 week time.

Scoring instructions: Each item is scored from one 'none of the time' to five 'all of the time'. Scores of the 10 items are then summed, yielding a minimum score of 10 and a maximum score of 50. Low scores indicate low levels of psychological distress and high scores indicate high levels of psychological distress. [9]

K10 Score: Likelihood of having a psychological distress

- score under 20 are likely to be well
- score 20-24 are likely to have a mild psychological distress
- score 25-29 are likely to have moderate psychological distress
- score 30 and over are likely to have a severe psychological distress

Section C: Distress Tolerance Scale

Distress Tolerance reflects the Perceived or Actual Ability to withstand negative affect or other aversive psychological and/or physical states.[10]

To index distress tolerance, **Simons and Gaher (2005)**[11] developed a promising self-report measure entitled the Distress Tolerance Scale (DTS). The DTS is specifically aimed at measuring the perceived capacity to tolerate distress from a multidimensional framework. Items are rated on a 5-point Likert scale (5=Strongly disagree to 1=Strongly agree), with higher scores corresponding to greater

levels of distress tolerance. To date, factor analytic work on the DTS has been conducted exclusively on college student samples.

Scoring: The scale is continuous measure of tolerance for emotional distress. There are not any cut-off scores and the scale doesn't categorize people.

Validation of the Tool: Both the standardized tools Kessler Psychological Distress Scale (K10) and Distress Tolerance Scale (DTS), were formatted and made user friendly. Tools were translated into Hindi by language expert and reverse translator. Face validity & content Validity was also established by 13 experts from various fields i.e. mental health nursing experts, psychologist, psychiatric social worker and psychiatrist who regarded the tools as apt. Their valuable suggestions were also incorporated.

Reliability of the Tools: The tools were administered on 12 samples to see the degree of consistency and accuracy with which the instruments measure the attribute for which it is designated to measure. Before the final initiation of the study, all the translated tools (in Hindi language) were tested for reliability using test-retest method. Retest was done after 2 weeks interval. The reliability of the translated version of K10 was 0.876 and DTS was 0.939.

Tests of Normality: The tools were applied to 35 nursing students to test the normalcy. Shapiro Wilk test of normality was applied to know the normality of the tools. Both the tools were normally distributed.

Ethical & Legal Consideration: The researcher obtained approval from the Institutional Research/ Ethics Committee.Written permission was also obtained from concerned authorities of the selected nursing colleges. Permission to use the tools was obtained from authors themselves.

Pilot Study: Post legal approval from concerned authorities the pilot study was conducted. The investigator completed the data collection process. The collected data was analyzed and meaningful information was gathered by the researcher.

Data Collection Procedure for the main study: Permission from the Concerned Authority**:**

The legal and ethical safeguard was made before commencing the research work. The formal administrative permission was sought from the college authorities. The written consent was obtained from the students to get their participation and cooperation during the study.

Period of Data Collection: Following approval from the institutional research committee, the study proceeded. The data collection period was one month. This period

included the administration of the tool i.e. K10, after which identification of students with distress. The Distress Tolerance scale (DTS) was administered on the students identified with distress.

Five colleges of nursing were included on the basis of permission granted by administrative authority and randomization. Students undergoing nursing study were selected as per the sampling inclusion criteria. Full-time first year undergraduate nursing students were eligible for participation in the study. In all the nursing colleges the investigator approached students after the formal introduction given by the respective class coordinators. The nature and scope of the study was explained to them and informed consent for participation in the study was obtained. The students were made comfortable so as to prepare physically and mentally for the assessment. Demographic proforma was administered along with K10. It took 10-15 minutes to fill the tool. After screening of students in distress by K10, DTS, scale was applied. Thus, the investigator completed the data collection process.

Findings

The analysis of data is organized and presented as follows:

Section I: Distribution of participants according to demographic variables

Section II: Assessment of level of distress observed by K10 among nursing students.

Section III: Evaluation of Distress Tolerance of nursing students.

Section IV: Association between the level of distress and selected demographic variables of nursing students.

Section I: Distribution of participants according to demographic variables:

Study results revealed that most of the participants 110 (91.6%) were from the age group of 18-20 years, and only 4 (3.33%) participants were in the age group 24-26 years. Majority of the students were females i.e. out of 120, 109 (90.8 %) were females and only 11 (9.16%) boys were enrolled in the study. There was a female preponderance in the groups. Majority of the 45 (37.5%) participants were having a monthly family income of less than Rs. 10000 and majority 88 (73.3%) of them were from nuclear families. While looking into the number of the siblings, 56 (46.6%) participants were having 3-5 siblings. Nearly 87.5% i.e. 105 students were having an ordinal position between 1 to 3.

51 (42.5%) participants had English as a medium of instruction in 12th standard, while rest 69 (57.5%) participants had Hindi as a medium of instruction in 12thstandard. Study also found out that 92 (76.6%) students experienced home sickness, while 18 (15%) were comfortable and did not feel any home

sickness. Study also revealed that 92 (76.6%) students were hostellers whereas 0nly 28 i.e. 23.3% were day scholars. 76 (63.3%) students expressed having stress due to clinical posting, however 44 i.e. 36.6% of nursing students expressed no stress during their clinical posting. Regarding stress due to faculty, 32 (26.6%) students gave affirmative response in comparison to 88 (73.3%) students disagreed to have stress due to faculty. On viewing to their personal problems 14 (11.6%) students were problems in their personal life, however 106 (88.3%) had no issues in their personal life. 66 (55%) students had academic load while 54 (45%) had no such issues.

Section II: Assessment of level of distress observed by K10 in nursing students

Table No 1: Frequency and percentage distribution of samples according to level of distress N=120

Level of Distress	Frequency	%
Well (<20)	00	00%
Mild (20-24)	60	50.00%
Moderate (25-29)	40	33.33%
Severe (>30)	20	16.67%
Total	**120**	**100%**

Table No 1 shows that out of 120 students, 60 (50.00%) students had mild psychological distress, 40 (33.33%) students had moderate psychological distress and 20 (16.67%) students had severe psychological distress, whereas nobody came in the category of well.

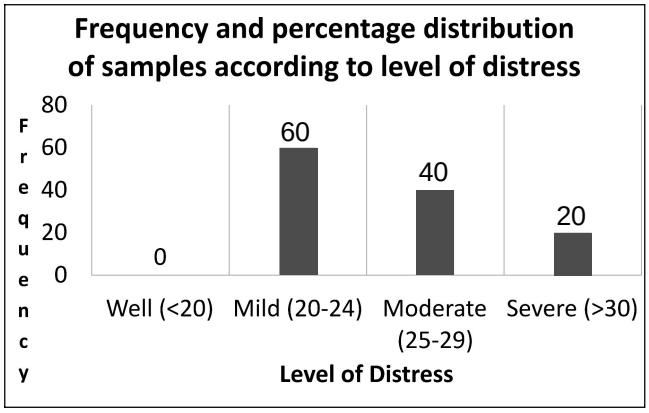

Figure No 1: Bar Diagram showing the Frequency and percentage distribution of samples according to level of distress

Section III: Evaluation of Distress Tolerance Scores (DTS) of nursing students

This section deals with the Distress Tolerance Scores of the nursing students

Table No. 2: Frequency, Percentage, Mean and SD of DTS Score. N=120

DTS Scores	Frequency	%	DTS Mean Score	SD
1 to 40	57	47.50%	41.45	10.44
41 to 75	63	52.50%		
Total	**120**	**100%**		

Table 2 reveals the DTS Scores of Nursing students. The DTS measures the perceived

capacity to tolerate distress from a multidimensional framework. Items are rated on a 5-point Likert scale (5=Strongly disagree to 1=Strongly agree), with higher scores corresponding to greater levels of distress tolerance. There are not any cut-off scores and the scale doesn't categorize people. On the basis of individual scores, results revealed that out of 120 students, 57 students obtained the score of 1- 40 thereby signifying the lower distress tolerance level, whereas, 63 students scored in between 41- 75 in DTS scale. The DTS mean score was 41.45 with SD of 10.44. This indicates that the nearly half of the nursing students need to work on increasing the tolerance level.

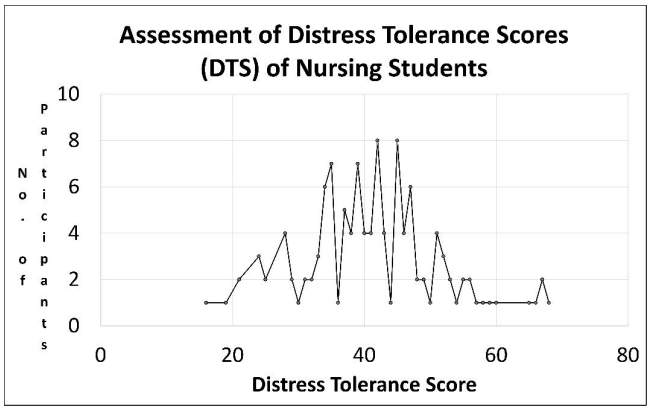

Figure no.2: Line Diagram showing DTS Score of Nursing Students.

Section IV: Association between the level of distress and selected demographic variables

No significant association was found between level of distress and selected demographic variables like age, gender, monthly income of family, type of family, number of siblings, ordinal position among siblings, medium of education in 12th Std., hosteller or day scholar, presence of home sickness, stress from faculty, personal problems and academic load at the level $p \leq 0.05$.

Discussion

Discussion on description of socio demographic data of nursing students:

Study revealed that 91.6% of nursing students fell between 18-21 years of age. This revealed that most of the students enter this profession at above mentioned age and it is here that they have their first brace with professionally induced stressors.

This finding was upheld by **Mahadeo B Shinde, Prabhuswami Hiremath (2014)**[12] that 44.6% of B.Sc. nursing students were in between the age group of 20-21years and **Singh A, Chopra M, Adiba S, Mithra P, Bhardwaj A, Arya R, et al (2013)** [13]also revealed that mean age of undergraduate student nurses was 19.12 years who also had increased level of distress.

Study found out that majority of the students were females i.e. 109 (90.8 %). In the present study all 120 students enrolled, had mild to severe level of distress including 109 female and 11 male students.

It was consistent with **Singh A, Chopra M, Adiba S, Mithra P, Bhardwaj A, Arya R, et al**

(2013)[13] findings, who also observed that female students outnumbered the perceived stress score (31.33) than male students (26.01)

Majority of the study samples belonged to nuclear families i.e. 80%. In the same manner, the finding was documented by **Mahadeo B Shinde, Prabhuswami Hiremath (2014)**[12] who reported that 83.9% of students nurses were from nuclear families.

Study also revealed that 92 (76.6%) students were hostellers whereas 0nly 28 i.e. 23.3% were day scholars. It interprets that most of the nursing students are hostellers and as they are staying away from home this may act as a stressor. In the same manner **Mahadeo B Shinde, Prabhuswami Hiremath (2014)**[12] also assessed that 72.8% of undergraduate students were hostellers who had stress.

Most of the students expressed having stress due to clinical posting, this may be due to first exposure to the clinical setting and dealing with the direct patient care. **Anna Majda (2018)**[14]reported similar findings that during the first practical training, the nursing students encountered stressful situations.

On viewing to their personal problems 14 (11.6%) students were problems in their personal life, however 106 (88.3%) had no issues in their personal life. 66 (55%) students had academic load while 54 (45%) had no such issues. On the contrary **Fatma Rushdy Mohamed, Nora Abdelhamied Zaki, Zamzam Ahamed, AsmaaKamal Hassan and Attyiat Hassan Hussein, et al (2016)**[15] revealed that first year students reported higher distress related to personal problems (2.9+1.38). Similarly, **Abraham, Zulkifli EMB, Soh E, Lim G (2018)** [16] also suggested that students experience severe levels of stress. Significantly, higher Personal stressors, followed by Academic stressors and finally Social stressors were also revealed.

Discussion on level of distress in nursing students:

Findings revealed that out of 120 students, 60 (50.00%) students had mild psychological distress, 40 (33.33%) students had moderate psychological distress and 20 (16.67%) students had severe psychological distress, whereas nobody came in the category of being well.

A number of studies have shown that nursing students experience stress during their initial years of career formation and it is worth noting that in the present study also most of the student nurses experienced distress during their preliminary year of professional education.

In line with our findings, **Mahadeo B Shinde,**

Prabhuswami Hiremath (2014)[12] also demonstrated that majority of the students i.e. 65.6% encountered moderate stress and 18.6% students had mild, whereas 15.8% students revealed severe stress.

Discussion on Distress Tolerance Scores (DTS) of nursing students

Some amount of stress is a part and parcel of life. It has been observed from the literature that now a day's students have a reduced stress tolerance level. In order to manage their academic vocational and personal responsibilities well, students need to develop effective tolerance skills. The current study reveals that mean DTS score was 41.45 with SD of 10.44. This indicates that the nearly half of the nursing students need to work on increasing the tolerance level.

Similarly**, Muhombaa M et al (2017)** [17] conducted a pilot investigation of distress tolerance skills for college students. Findings emphasized that a short intervention program on mindfulness and distress tolerance skills can create a constructive effect among university students.

Discussion on association between level of distress and selected demographic variables:

There was no significant association found between level of distress and selected demographic variables like age, gender, monthly income of family, type of family, number of siblings, ordinal position among siblings, medium of education in 12th Std., hosteller or day scholar, presence of home sickness, stress from faculty, personal problems and academic load at the level $p \leq 0.05$. Therefore, the null hypothesis H03 i.e. there is no statistically significant association between level of distress and selected demographic variables at the level $p \leq 0.05$ was accepted and H1 i.e. there is statistically significant association between level of distress and selected demographic variables at the level $p \leq 0.05$ was rejected.

Researcher didn't find any supporting study to discuss this section of the results.

Conclusion

Nurses are pillars of the health care delivery system. Physical and psychological health are key components of good health. It has been proven by numerous researches that nurses including student nurses are burdened with stress. Student nurses in particular were found to be unaware of the challenges in nursing while opting for the profession. Keeping this issue unaddressed will only add to surging incompetence in the field. In addition to this, a few students were also found to undergo emotional turmoil because of family problems including financial burden, family health

issues, language issues etc. It was also found that distress tolerance is lacking among nursing students. Absence of proper skills to deal with situations like these only added to their woes. Hence distress tolerance (skills) was considered very essential at this point of time. Therefore, a need to inculcate strategies for coping mechanism among nursing students early on in their career should be kept in mind for long term management of the problem.

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Conflict of Interest: None

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What does the study convey?

This study conveys the higher prevalence of psychological stress among nursing students.

Who will use these findings?

Findings of the study can be utilized by nursing administrators, nursing teachers/ educators and nursing students so that, they motivate and assist individuals in making health behavior changes through assisting in improving behaviors and providing self-management tools.

How can the findings be put into practice?

Results revealed that the distress level is high among nursing students. Hence the study emphasized a need for developing coping abilities of nursing students. Lack of skills to manage stress may be taken into consideration by all nurse leaders so that they can create competent nurses.

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ADHERENCE TO THERAPEUTIC REGIMEN AND ITS RELATIONSHIP WITH HEALTH STATUS IN POST LIVER TRANSPLANT PATIENTS

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Abstract

Liver Transplant patients suffer a wide range of physical, mental and psychosocial difficulties and other risks like graft rejection and Death. Adherence to a multi factorial, complex and lifelong Therapeutic Regimen helps patients to achieve a better Health Status and increases survival rates. This study aimed to assess the Adherence to Therapeutic Regimen and its relationship with Health status of Post Liver Transplant Patients. A Cross- sectional Descriptive Correlational Study design was adopted to select Patients who were followedup in Transplant OPD between four weeks after liver transplantation till one year at ILBS hospital. Convenient Sampling was used to enroll 63 Post Liver Transplant Patients in the study during the Data collection period. Morisky Green Levine Medication Adherence Scale and a Structured Questionnaire on Non- Pharmacologic Regimen were used to measure Adherence to Therapeutic Regimen. Health Status was assessed by Short Form 36-item Survey (SF-36). Together the scales took 25 minutes for completion. The data obtained were analyzed using Descriptive and Inferential Statistics. Most of the Post Liver Transplant Patients showed High Adherence to Pharmacologic Regimen. In Non- Pharmacologic Regimen, Physical activity and exercise (73.73%) was the only component that showed relatively Low adherence. With regard to Health Status, none of the patient reported poor Health Status in General. A significant near perfect positive correlation (0.819) was found between the Physical and Mental Components of health status of the Post Liver Transplant Patients. Adherence to Pharmacologic Regimen and 'Type of Liver Transplant' (0.026) showed a significant relationship. The relationship of Health Status with Type of Liver Transplant was also found significant (0.017). The Study indicated that patients who underwent LDLT(Live Donor Liver Transplant) were motivated to adhere to their Therapeutic regimen and this translated to a better Health Status among Live Donor Liver Transplant Patients.

Keywords: Adherence, Therapeutic Regimen, Health Status, Liver Transplant Patients.

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Background

Chronic liver disease is a major health concern and accounts for a higher mortality rate (844 million, 2 million deaths) in comparison to other major public health problems such as diabetes (422 million, 1.6 million deaths), pulmonary (650 million, 6.17 million deaths) and cardiovascular diseases (540 million, 17.7 million deaths). However, unlike other chronic diseases, majority of the CLDs are curable (Chronic Hepatitis C- CHC), preventable or treatable (Chronic Hepatitis B- CHB).[1]

Liver transplantation (LT) is a standard treatment modality for the gradually expanding variety of Liver Diseases.[2]

LT patients need to adhere to a multi-factorial, complex and lifelong Therapeutic Regimen.[3] Adherence to the Therapeutic Regimen is an essential element for Patient and Graft survival.[4]

Adherence to the treatment plan is the extent to which a person's behaviour taking medication, following a diet and implementing lifestyle modifications, corresponds with agreed recommendations from a healthcare provider.[5] Adherence to immune-suppressive medicines also plays an important role in obtaining and maintaining a good clinical outcome.

Poor adherence is an issue for nearly 1 of every 2 liver transplant patients and this substantially increases the rates of Late Acute Rejection (LAR), graft loss, and death.[6]

Adherence to Therapeutic regimen helps patients in achieving a Health Status that is comparable to that of before LT. Liver transplantation offers patients the Health they enjoyed prior to the illness, achieving a good balance between the functional efficacy of the Graft and the Patient's physical, mental, and social well-being.[7]

Thus, it is important for the patients to understand the transplantation process so as to change their living experience for better life after Liver Transplantation.

Review of Literature

Hartono et al., (2017)[8] did a study to determine the level of adherence to Immune-suppressive therapy in liver transplant (LT) recipients, to elucidate its associated factors and patient preferences on the dosing schedule. The study concluded that early identification of at-risk patients was needed to allow implementation of measures in order to improve adherence. Hence, there was a need to simplify medication regimens to once daily for improvement in level of adherence among the LT recipients.

According to Promraj (2016)[9], consistent assessment of patient's immune-suppressive medication adherence was important to improve the results of liver transplantation.

Burra and his team (2011)[4] concluded that poor adherence to medical instructions and to regimen were common among liver transplant patients and had harmful impact on graft function, patient survival and lead to increased costs. Education of organ transplant patients could increase adherence rates and would achieve a better desired quality of life (Burra et al., 2011)[4]

Telles-Correia, Barbosa, Mega, Mateus and Monteiro (2009)[10] conducted a prospective longitudinal study on When Does Quality of Life Improve after Liver Transplant?. Knowledge about how and when quality of life improves after liver transplantation might be useful for future interventions to optimize the quality of life of these patients.

A Potential study was undertaken by De Oliveira et al., (2016)[3] with an aim to determine factors that affect liver transplant candidates adherence to treatment; investigate the association between adherence, socioeconomic demographic factors, clinical characteristics and patient understanding about the disease and liver Transplantation. The study concluded that application of an educational program might help in increasing adherence pattern in the pre- transplantation phase, as it was observed to be lower in patients who reported little or no knowledge of the disease or the procedure.

The quantitative study performed in a national reference centre for liver transplants in the city of Fortaleza, state of Ceará (CE) found a significant influence of socio-demographic variable on quality of life domains. (De Aguiar et al., (2016))[11]

Need for the Study

Nurses in Liver Transplant centers play an important role in providing specific information about the procedure and answer questions being raised by the clients and their families (Sasso, Silveira & Galvão, 2009 and Baldoni, 2008).[12]

Usually the information required by the clients is concerned with their disease and related care, side effects, complications, health-related problems and lifestyle practices (Mendes et al, 2013)[13]. Client's knowledge of symptoms, severity, monitoring, and treatment options are essential for appropriate self-care, adherence to follow up, early recognition of health problems and seeking timely treatment (Wager, Johnson & Kidd, 2006; Myers & Pellino, 2009 and Berman & Syders, 2012).[14]

Nurses assess client's knowledge related to disease care, compliance to medication, early identification of health problems, preventive services, anticipatory guidance, health education and provide an opportunity to assess environmental and social factors impacting on the client's health (Karen &

Carol, 2006)[15].

Thus, it is essential for a nurse to have a scientific basis and provide the implementation of effective strategies to promote changes in behavior, attitudes and lifestyles of the Liver Transplant patients (Mendes et al, 2013) [13]. Successful long-term outcomes in transplant are only possible by practicing continuous diligence and attention to the patient's needs.

Also, there is a lack of nursing research in the area of Liver Transplantation and very little attention has been given to this area of research in Nursing. However, promotion of Adherence to therapeutic Regimen and Health Status of Post Liver Transplant Patients has been emphasized in the present study. Therefore, the researcher found a need to assess Adherence to Therapeutic Regimen and its relationship with Health Status of Post Liver Transplant Patients with a view to develop a Post Liver Transplant Care Guide , an information booklet on self- care of LT patients based on the evidence.

Objectives

1. To determine Adherence to Therapeutic Regimen and its relationship with the Health Status of Post Liver Transplant Patients.

2. To identify the relationship of Adherence to Therapeutic Regimen of Post Liver Transplant Patients with Selected Variables.

3. To identify the relationship of Health Status of Post Liver Transplant Patients with Selected Variables.

Hypotheses

The following Hypotheses in the study were tested at 0.05 level of significance

H1: There is a significant relationship between Adherence to Pharmacologic Regimen and Health Status of Post Liver Transplant Patients.

H2: There is a significant relationship between Adherence to Non- Pharmacologic and Health Status of Post Liver Transplant Patients.

H3: There is a significant relationship of Adherence to Pharmacologic Regimen with Selected Variables.

H4: There is significant association of Adherence to Non- Pharmacologic Regimen with Selected Variables.

H5: There is significant relationship of Health Status with Selected Variables.

Methodology

Study design: A Cross- sectional Descriptive Correlational Study design was adopted for this study**.**

Sample size: A total of 63 Post Liver Transplant Patients were enrolled during the Data collection period

Sample population: Post liver transplant patients who were followedup in Transplant OPD between four weeks after liver transplantation till one year at ILBS hospital were selected.

Setting: The study was conducted in the Transplant OPD of Institute of Liver and Biliary Sciences (ILBS), Vasant Kunj, New Delhi. ILBS is a super-specialty hospital which caters to the health needs of people suffering with Liver and Biliary disorders

Sampling technique: Convenient Sampling was used to involve Post Liver Transplant Patients in the study

Data collection time-period: The scales altogether took 25-30 minutes for each patient for completion of the data.

Tools used for data collection: Morisky Green Levine Medication Adherence Scale and a Structured Questionnaire on Non-Pharmacologic Regimen were used to measure Adherence to Therapeutic Regimen. Health Status was assessed by Short Form 36-item Survey (SF-36).

Ethical issues: Written permission and Approval for conducting the study was obtained from the Administrative Authorities. The clearance was obtained from Scientific Review Committee and Ethical Committee. Patient's consent was obtained and confidentiality assured.

Findings

Section 1.1 Demographic characteristics like Age, Gender, Marital Status and Socio-economic Status (N-63)

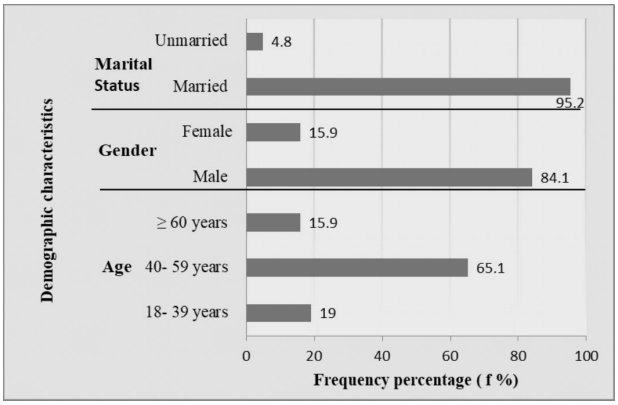

Figure 1: A Horizontal bar diagram showing frequency and percentage of the Post Liver Transplant Patients according to Age, Gender and Marital Status

Of the 63 patients, the percentage of the patients having educational qualification as graduate or Post-graduation was 54 percent. More than thirty percent of patients (34.9%) were Professionals and 25.4 per cent were clerks and shop-owners; and 9.5 percent of patients were skilled worker. More than fifty percent of patients (55.6%) had a monthly family income of more than Rupees 41430/- . The percentage of patients who belonged to Upper Socio-Economic Class was 32.2 percent. Other details are given in Fig.1.

Section 1.2 Clinical Profile of the Post-Liver Transplant Patients

Of the 63 patients, most of the patients (42.9

%) suffered with Alcoholic Liver disease and 92.1% underwent LDLT. Greater proportions of patients (88.9%) were taking both Prograft and Celcept as Immunosuppressant medications. In the aspect of time since Liver transplant, 36.5 percent of patients were between 9-12 months after Transplant. In the case of Employment Status, less than fifty percent of patients (46%) were employed full-time and 39.7 percent had been working part-time after Liver Transplant. The percentage of patients reporting absence of complications after discharge was 81 percent and remaining (19%) showed presence of surgical complications. Out of 19 percent who had complications, patients were categorized on the basis of Clavin- dindo classification of surgical complications. This percentage of patients who reported deviation from the normal postoperative course without the need for pharmacologic treatment or surgical, endoscopic, and radiological interventions were 58.3 percent and 41.67 percent had to undergo Intervention in absence of General anesthesia to treat complications.

Among patients with existing comorbidities, the percentage of patients suffering from Diabetes mellitus was 30.2 percent, followed by 9.5 percent patients reporting Hypertension.

Section 2.1 Adherence to Pharmacologic Regimen in Post Liver Transplant Patients

Most of the Post Liver Transplant Patients had High Adherence to Pharmacologic Regimen. Majority of the patients (85.7%) did not forget to take their medications and 80.9% patients were not careless regarding taking medication. The percentage of patients who did not stop taking medications when felt better were 95.2% and 96.8% patients did not stop taking medications when they felt worse.

2.2 Adherence to Non- Pharmacologic Regimen in Post Liver Transplant

Patients In Non- Pharmacologic Regimen, physical activity and exercise (73.73%) was the only component that showed relatively Low Adherence.

3.1 Health Status of Post Liver Transplant Patients in General

With regard to Health Status, the study found good to excellent (87.4%), response to Health Status of patients in General.

3.2 Dimensions of Health Status of Post Liver Transplant Patients

The present study showed an overall Health Status ranged from excellent to Poor. Majority of patients resulted in improved Health Status and had excellent response in all the Dimensions of Health Status with Bodily pain having the highest mean score (85.55±19.27).The lowest Rank was observed in Role Limitation due to emotional problems (61.24±47.49) dimension

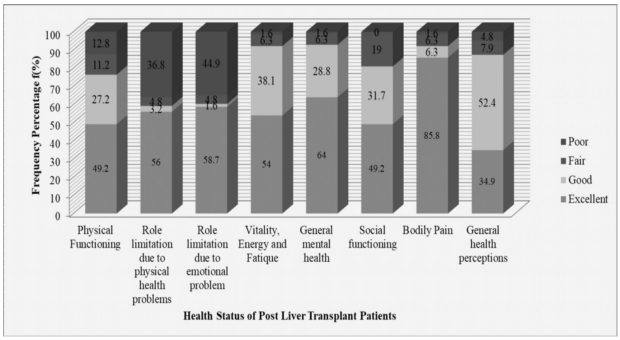

Figure 2: A stacked bar diagram showing Frequency percentage of Overall Health Status of Post Liver Transplant patients

A significant correlation (p=0.819) was elicited between the Physical and Mental Components of health status of the Post Liver Transplant Patients.

4.1 Relationship between Adherence to Pharmacologic Regimen and Health Status of Post Liver Transplant Patients

No significant relationship was observed between Adherence to Pharmacologic Regimen with any of eight dimensions of Health Status of Post Liver Transplant Patients.

4.2 Relationship between Adherence to Non- Pharmacologic Regimen and Health Status of Post Liver Transplant Patients

'Personal and Environmental Hygiene' was significantly correlated with Vitality, energy and fatigue (p=0.007), General mental Health (p=0.006), Social functioning (p=0.006) and General health perceptions (p=0.010) dimensions of Health Status.

5.1 Relationship between Adherence to Pharmacologic Regimen of Post Liver Transplant Patients with Selected Variables

including Live Donor Liver Transplant (LDLT) and Dead Donor Liver Transplant(DDLT)

Table 1: Relationship between Adherence to Pharmacologic Regimen with Selected Variables N=63

Sample Variables	Adherence to Pharmacologic Regimen		χ^2	df	p value
	Adherent f(%)	Non-Adherent f(%)			
Age					
18- 39 years	9(20.5)	3(15.8)	0.627	2	0.731
40- 59 years	29(65.9)	12(63.2)			
≥60 years	6(13.6)	4(21.1)			
Gender					
Male	37(84.1)	16(84.2)	<0.001	1	0.990
Female	7(15.9)	3(15.8)			
Socio- economic Class					
Upper	12(27.3)	7(36.8)	0.774	2	0.679
Upper middle	26(59.1)	9(47.4)			
Lower middle	6(13.6)	3(15.8)			
Type of Liver Transplant					
DDLT	1(2.3)	4(21.1)	6.405	1	0.026 *
LDLT	43(97.7)	15(78.9)			
Time since Liver Transplant					
4 wks- 3mnths	12(27.3)	2(10.5)	2.760	3	0.430
3 - 6 months	5(11.4)	4(21.1)			
6 - 9 months	11(25.0)	6(31.6)			
9 - 12 months	16(36.4)	7(36.8)			
Episode of complication					
Yes	9(20.5)	3(15.8)	0.187	1	0.665
No	35(79.5)	16(84.2)			
Existing Comorbidities					
Yes	17(40.3)	10(49.0)	0.417	1	0.355
No	27(62)	9(47.4)			

* $p<0.05$

Table 1: Adherence to Pharmacologic Regimen and 'Type of Liver Transplant' (χ 2= 6.405, p= 0.026) showed a significant relationship as LDLT Patients were motivated to adhere to their Therapeutic Regimen.

5.2 Relationship between Adherence to Non- Pharmacologic Regimen of Post Liver Transplant Patients with Selected Variables

There was a significant relationship found with Selected Variables like Time since Liver Transplant (F=3.787, p= 0.015). Further analysis showed significant relationship between Time since Liver Transplant of 4weeks 3 months with 3 6 months (p=0.023), 6 - 9 months (p=0.009) and 9 - 12 months (p=0.003), respectively.

5.3 Relationship between Health Status of Post Liver Transplant Patients with Selected Variables

Table 2- Relationship between Health Status with Selected Variables. N=63

Selected Variables	Health Status (Mean±S.D)	t/F value	df	p value
Age				
18- 39 years	73.49±19.21	F=0.627	1	0.538
40- 59 years	70.00±19.89			
60 years or above	63.87±23.20			
Gender				
Male	70.95± 20.66	t=1.140	1	0.257
Female	63.02± 16.61			
Socio-Economic class				
Upper	71.90±22.80	t=0.291	2	0.749
Upper middle	67.94±20.50			
Type of Liver Transplant				
DDLT	49.25±18.44	t=0.45	1	0.017*
LDLT	71.46±19.45			
Time since Liver Transplant				
4weeks-3 months	60.29±21.84	F=1.640	3	0.190
3 - 6 months	73.39±06.66			
6 - 9 months	68.77±18.17			
9 - 12 months	765±22.78			
Episode of complication				
Yes	68.85±23.70	t=0.161	1	0.874
No	69.89±19.50			
Existing Comorbidities				
Yes	68.85±19.01	t=0.884	1	0.783
No	70.29±21.17			

* p<0.05

Table 2: The relationship of Health Status with Type of Liver Transplant was found to be significant (t=0.45, p=0.017). Since, LDLT patients were adherent to their Therapeutic Regimen, it got translated to a better Health Status.

Discussion

Of the 63, most of the patients (65.1%) were aged between 40- 59 years, 84.1 percent were Males and 95.2 percent were married. Similar results were found in a review reported by Ratcliffe, Longsworth, Young, Bryan, Burroughs and Buxton, (2002)[16] which revealed that more than half (51%) of the

patients were aged between 46 and 60 years and were men. Tovikkai, Charman, Praseedom, Gimson and Meulen, (2015)[17] discovered that the Median and IQR of age were 53 (4660) years. The results related to most prevalent gender and marital status of Post Liver Transplant Patients of the present study were consistent with Chen et al., (2012)[7] and Morales et al., (2012), Albeikary et al., (2010)[18] where most of the Post Liver Transplant Patients were males and were married. Burkhalter et al., (2017)[19]and Tovikkai et al., (2015)[17] also revealed that more than 60 percent of the recipients were males.

The most common indication for Liver Transplant among the selected LT patients was found to be Alcoholic Liver Disease (42.9 %). The findings were in agreement with the study conducted by Tovikkai et al (2015) [17] Telles- Correia et al.,(2009)[10], Ratcliffe et al.,(2002) [16] and De Aguiar, (2016)[11] who also discovered that largest group of patients had Alcoholic Liver disease as an indication to Liver Transplant.

Majority of patients (92.1%) underwent LDLT in the present study. A study conducted in Japan by Soyama, Eguchi and Egawa (2016) also revealed similar results with majority of patient being LDLT in comparison to DDLT.

Around 70 percent of the Post Liver Transplant Patients had high Adherence and rest of the 30 percent had medium to low Adherence. Albeikary et al., (2016)[18] had consistent results with a high level of Adherence of around 60 percent among the Post Liver Transplant patient.

The results of the present study were also consistent with previous research conducted by Morales et al., (2011)[6], who reported a high Adherence of 88.5 percent in LT Patients. The 30 percent of Post Liver transplant Patients were further considered as being Non-adherent to the Pharmacologic Regimen in the present study. A recent review of the prevalence of non-adherence among adolescent transplant recipients revealed that non-adherence ranged from 17 percent to 53 percent (Dobbels, Van Damme-Lombaert, Vanhaecke & De Geest, 2005).[20] In the present study, Adherence to Non- Pharmacologic Regimen in terms of Infection Prevention (84.7%), Personal and Environmental hygiene (87.77%), Diet and Nutrition (90.85%) and Appointment and Investigations (95.81%) was found to be high. Majority of patients were regularly following up their Appointment schedule. Chen et al., (2008) and Fredricks et al., (2008)[22] elicited similar findings with 98.4 percent patients being consistent with regular follow-up and around 85 percent patients attending their scheduled clinical visits.

A very small proportion of patients (3.9%) were not attending outpatient appointments regularly and 2.9% were not turning up for the prescribed blood tests (Burra et al., 2011).

This study was in agreement with the findings of the present study where majority of patients were found to be attending outpatient appointments regularly and getting prescribed blood tests done.

A major proportion of LT patients (86.4%) had a good to excellent Health Status of patients in General. None of the patients reported a Poor Health Status.

Duffy et al., (2010)[23] and Mabrouk et al., (2012)[24] supported the finding of the present study with Health Related Quality of Life (HRQoL) significantly being improved after Liver Transplantation.

Majority of patients resulted in improved Health Status and had excellent response in all the Dimensions of Health Status with Bodily pain having the highest mean score (85.55±19.27).The lowest Rank was observed in Role Limitation due to emotional problems (61.24±47.49) dimension. Studies by Ruppert et al., (2010)[21] and Fredricks et al., (2008) were in contradiction with the present study and discovered a marked decline in General health perception.

There were no significant relationship found between Adherence to Pharmacologic Regimen and Health Status of Post Liver Transplant Patients. Fredricks et al., (2008) showed inconsistent results showing a significant relationship between Adherence to medication and HRQoL of the recipients. Similarly the inconsistent findings as revealed by Morales, Varo and Lazzaro (2011) can be explained where good health-related QOL was significant with low intensity medication regimen and the LT patients perceived that modification of DDs for better adaptation and life after LT.

The relationship of each of the component of Adherence to Non- Pharmacological Regimen with eight dimensions of Health Status was assessed. Personal and environment hygiene component of Non-Pharmacologic Regimen showed significant relationship with Vitality, energy or fatigue (p=0.007), General Mental Health (p=0.006), social functioning (p=0.006) and General health Perceptions (p=0.010). It can be interpreted that maintaining Personal and environmental hygiene leads to a better Health Status in terms of Improved Vitality, energy vs fatigue, General Mental Health, Social functioning and General Health perceptions related dimensions.

There was no significant relationship found between the other Component of Non-Pharmacologic Regimen with dimensions of the Health.

A significant relationship was found between Adherence to Pharmacologic Regimen and Variable 'Type of Liver transplant'. It was found that LDLT recipients were more adherent to the Pharmacologic Regimen as compared to the DDLT recipients. Better adherent behaviour among LDLT recipients can be

explained in terms of their higher motivation levels to adhere to their therapeutic regimen due to the favour done by their family members (Father, mother, brother or sister) by being a live donor to them. Since the study was performed in an Indian setting, it can also be related to the culture, values and respect of the LDLT patients for their loved ones towards the favour done to them by putting their lives at risk. Hence there could be some emotional factor involved which affected the adherence of the LDLT towards Pharmacological Regimen.

De Oliveirra et al., (2016)[3] also conducted a consistent study to determine factors that affect liver transplant candidates. The results were in agreement with the present study with significant relationship with factors like work situation (p= 0.038), understanding of the disease (p = 0.002), understanding of transplantation (*p* = 0.033) and use of laxatives (*p* = 0.045). Even though the factors were different in this study, it showed a significant relationship.

There was a significant relationship found between Adherence to Non- Pharmacologic Regimen and Selected Variable 'Time since Liver transplant (p=0.015). Time since Liver transplant was further analyzed and showed a significant relationship between Time since Liver Transplant of 4weeks 3 months with 3 6 months (p=0.023), 6 9 months (p=0.009) and 9 12 months (p=0.003), respectively. Hence, it is evident that Post Liver Transplant Patients had high Adherence immediately after LT in the initial time period of 4 weeks to 3 months and gradually decreased in 3- 6 months , 6- 9 months and 9- 12 months.

The present study found relationship between Health Status and selected variables Type of Liver Transplant. The relationship of Health Status with Type of Liver Transplant (0.017) was found significant. The previous section of the study showed that patients were adherent to the Pharmacologic regimen, so it is predicted that Adherence to Pharmacologic Regimen translated to a better Health Status in Post Liver Transplant Patients

Conclusion

Post Liver Transplant Patients were found to be highly adherent to Therapeutic Regimen. Patients were adherent to Non-Pharmacologic Regimen immediately after the LT, which gradually declined afterwards. The study concluded that patients who underwent LDLT were motivated to adhere to their Therapeutic Regimen and this translated to a better Health Status among Post Liver Transplant Patients.

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Conflict of interest: The authors declare no conflict of interest.

Source of funding: Self

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What does the study convey

The study conveys that post liver transplant patients were found to be highly adherent to their therapeutic regimens. The patients were adherent to non- pharmacological regimen immediately after the liver transplant, which gradually decline afterwards. Also the patients who underwent LDLT were motivated to adhere to their therapeutic regimen and this translated to a better health status among post liver transplant patients.

Who will use these findings

The nurses can develop an education program on the adherence to therapeutic regimen practices and also emphasize upon identification of critical areas to improve the same among the post liver transplant patients.
Nurses can help in

a) providing regular counselling sessions and influence patient health outcome
b) developing preventive and promote of health behaviour as a part of non - pharmacological regiment which eventually helps in achieving better health status
c) implement the findings of the study and provide health education to these patients
d) target high risk patients and help in identification of non-adherence behaviour

Inservice education programs and regular counselling can be provided to sensitised patients and their families towards the need for adherence to therapeutic regimen during follow up visits
Nurses and transplant coordinator should plan strategies to motivate and counsel patients for more and more DDLT donors

How can the findings be put into practice?

According to the results elicited in the present study, it was found that there is a need to develop a booklet on post liver transplant patient care guide to enhance adherence to therapeutic regimens and thereby improve their health status the booklet consists of all the relevant information required by patients , patients family and relatives

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EFFECTIVENESS OF SPECIFIC ANTENATAL INTERVENTION ON MATERNAL OUTCOME OF HYPERTENSIVE PREGNANT WOMEN - A QUASI-EXPERIMENTAL STUDY

***Prof (Dr) Munira Kachroo**

Abstract

Hypertension is the commonest disorder associated with pregnancy. It could antedate pregnancy or be identified for the first time during pregnancy. It has serious, long term consequences for both baby and mother. Early detection and intervention can greatly improve their outcome. The present study was conducted on 110 hypertensive pregnant women at maternity department, SKIMS, Srinagar; with 55 subjects each in experimental and control group, to determine the effectiveness of specific antenatal intervention on their maternal outcome by using a quasi experimental research approach with time series non-equivalent pre-test-posttest-control group design. There is significant change in the maternal parameters and overall outcome of experimental group after implementation of intervention as compared to control group. The findings revealed significant association of gain in weight in subjects with good nutritional status and who belonged to middle socio economic status. Thus information both written and verbal and regular monitoring during pregnancy is essential aspect to improve maternal outcome.

Key words: Pregnant women; Hypertension; Specific antenatal intervention; Maternal parameters; Maternal outcome.

Background

Hypertensive disorders of pregnancy greatly contribute to maternal and perinatal morbidity and mortality. It is estimated that hypertension complicates approximately 7% to 10% of all pregnancies and contributes significantly to intra-uterine fetal growth retardation and death due to placental insufficiency and abruptio placentae[1]. Women with hypertensive disorders were found to have higher ratio of complications such as antepartum haemorrhage, eclampsia, premature labour and caesarean delivery.[2]

Sushila (2007)[3] studied effectiveness of self-

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care strategies on pregnancy induced hypertension, maternal and perinatal outcome among primigravidae at Chennai. In study group 8.7% mothers had PIH but in control group 15.3% had PIH with associated complications. The comparison in the occurrence of PIH between the groups showed significant difference at the level of $p<0.05$. Maternal complications were higher in control group and overall maternal outcome showed a significant difference between the groups at the level of $p<0.001$.

Vigil (2004)[4] studied perinatal outcome in 154 women with severe chronic hypertension at Veitnam and reported that 78 % women developed severe preeclampsia. The average birth weight was 2329$\pm$10.11gm, 4 mothers had still birth, and there were 6 neonatal deaths which resulted in perinatal mortality of 11.4%, 38 babies were admitted in NICU. The study revealed that preterm deliveries and caesarean sections were common.

Magnussen etal (2009)[5] studied hypertensive disorders in pregnancy and subsequent cardio- vascular risk in Europe. They reported that hypertension in pregnancy was a grave factor to lead to maternal complications and found pre-eclampsia in 41.2%, bleeding disorders in 12% and eclampsia in 6.2%, perinatal deaths 23.71% and these women were 25% at more risk to have cardiovascular disorders in subsequent period of life.

Bateman etal (2012)[6] studied a nationwide sample of delivery admissions for 14 years using large discharge data of chronic hypertension in pregnancy. Prevalence was high in women who were hypertensive in past pregnancy with recurrent abortions and who had family history of hypertension. Perinatal outcome was found poor and associated with fetal distress, birth asphyxia, still birth ($p<0.01$). They also revealed adverse maternal outcome with increase in weight, increased rate of hospitalization, renal failure in 21%, pre eclampsia in 11%, pulmonary edema in 21% and 10% hospital mortality.

Need for the study and literature review

Maternal hypertension during pregnancy is well known to result in low birth weight due to reduced placental function and it can result in increased incidence of hypoxia, intra-uterine death, preterm birth etc. Traditional therapies which include bed rest, low calorie and low salt diet and sedation should be adopted for hypertension which had revealed improved maternal and fetal outcome by 80%.[7] Thus the identification of this clinical entity and effective management play a significant role in the outcome of pregnancy, both for the mother and the baby.

Greater numbers of pregnant women are at risk

for poor pregnancy outcome. The prenatal period is a preparatory one, both physically in terms of fetal growth and maternal adaptations and psychologically in terms of anticipation of parenthood. Regular prenatal visits ideally beginning soon after the missed menstrual period offer opportunities to ensure the positive health of the expectant mother and her infant. Prenatal health supervision permits diagnosis and treatment of maternal disorders that may have pre-existed or may develop during the pregnancy.[8]

Al Muhim etal (2003)[9] studied the perinatal outcome in Baghdad among 685 women with preeclampsia. They reported 30.2% premature delivery, 22.8% induced delivery, 14.9% caesarean deliveries and 69.2% spontaneous delivery. Regarding maternal outcome placental abruption was found among 12.6%, oliguria in 7.9% of women and coagulopathy among % 6.01 of women.

Agarwal, Goswami and Temp (2004)[10] conducted a retrospective study in New Delhi to find out maternal and perinatal outcome in women with antepartum eclampsia. The mother and baby were followed until discharge or death. They reported that out of 51 eligible women, majority (82%) did not receive antenatal care and 80% were primigravida. At admission systolic and diastolic blood pressure was156$\pm$22 and 104$\pm$18mmHg respectively. 22% mothers delivered by caesarean and 18% by forcep or vacuum and reason for assisted delivery was failed induction, decreased maternal efforts and fetal distress.

Coelho etal (2004)[11] conducted a study in Brazil to identify maternal and perinatal outcome among hypertensive syndrome of 131 singleton pregnant women and to assess rate of proteinuria. The presence of proteinuria predicted adverse maternal outcome with increase of complications proportional to its elevation. HELLP syndrome was present among 30.5%, eclampsia among 3.8%, renal insufficiency with 0.7% and one maternal death occurred in women with elevated proteinuria. The perinatal outcome observed in comparison with women without proteinuria indicated prematurity (62.2% vs 3.5%), birth weight of less than 2500g (6.5% vs 5%), 5 minute Apgar score <7 (30.4% vs 3.5%), IUGR (41.9% vs 6.5%), still birth was same in both 1.41%.

Barton etal (2006)[12] evaluated cost savings of outpatient management services for women with pregnancy-related hypertensive conditions in Philippines. The outpatient management program included verbal and written patient education related to the hypertensive disease process during pregnancy as well as self-care procedures. Biometric data (i.e. automated blood pressure measurement, qualitative urinary proteins) were collected daily by the patient and transmitted telephonically to the nursing call

centre, which also included subjective symptoms. Electronic records were maintained and reports provided to the prescribing physician and case manager. The mean gestational age at the starting of program was 32.6 weeks. Antenatal hospital admission was required by 24.8% of patients. Progression to severe preeclampsia occurred in 14.3% of patient. Mean gestational age at delivery was 37 weeks. Antepartum charges were saved by 2.50 US dollars by this program. Thus it was concluded that utilizing outpatient management services for women with pregnancy-related hypertensive conditions reduces the need for in-patient care and is cost effective.

Various intervention programmes on hypertensive pregnant mothers during the antenatal period have resulted in improvement of maternal and neonatal outcome. Studies have revealed that midwives care is important in prevention of complications and keeping blood pressure under control in hypertensive pregnant women.[6] Thus the identification of this clinical entity and effective management play a significant role in the outcome of pregnancy, both for the mother and the baby**.**

Objectives

- To compare physical and physiological parameters of experimental group with that of control group of hypertensive pregnant women.
- To compare the maternal outcome of experimental group with that of control group of hypertensive pregnant women.
- To associate maternal outcome of hypertensive pregnant women with their demographic variables.

Hypotheses

H_1. Experimental group of hypertensive pregnant women have significantly better physical and physiological parameters as compared to control group of hypertensive pregnant women at 0.05 level of significance.

H_2. Experimental group of hypertensive pregnant women have significantly better maternal outcome as compared to control group of hypertensive pregnant women at 0.05 level of significance,

H_3. There is significant association between maternal outcome and selected demographic variables of hypertensive pregnant women at 0.05 level of significance.

Methodology

Research approach and design: Quasi experimental research approach with time series non-equivalent pre-test-posttest-control group design.

Setting: Maternity OPD and post natal wards, SKIMS, Srinagar which is a referral and tertiary care Hospital. The antenatal services

of this hospital are available to many districts of the valley. This hospital is also utilized by medical and nursing students of various medical and nursing colleges of Srinagar for their clinical experience. The setting was selected for the study because it was familiar to the researcher and easily accessible. The antenatal clinic was on the ground floor and had various rooms. The health teaching room was convenient for the researcher to utilize for assessment and implementing the intervention. The postnatal ward was situated on the ground floor of adjacent building. The yearly attendance of patients in Maternity OPD was 41,227, out of which the hypertensive cases were about 8,000 approximately. The daily antenatal attendance was 150 cases approximately.[13]

Population and sample: 110 hypertensive pregnant women (BP≥130/90mmHg) irrespective of their gravidity and with gestational age of 16 weeks. Subjects with co-morbid condition other than hypertension were excluded from the study.

Sampling technique: Subjects were selected randomly by simple random sampling. Every day the investigator prepared a list of the hypertensive pregnant women with number name i.e. Hypertension (H_1, H_2…). These number names were written on a chit of paper and placed in a bowl. Then out of total chits, 60% of chits were drawn. Same technique was followed on subsequent days till required number of sample subjects was achieved. The first 55 sample subjects were assigned to experimental group and next 55 sample subjects were assigned to control group. Everyday 6-8 subjects were selected.

Description of the tool and intervention: Three types of tools were used to collect data.

I. The interview-schedule to collect data about demographic variables such as, socioeconomic status ,nutritional status and gravidity.

II. Assessment proforma to assess physical and physiological parameters such as weight haemoglobin, blood pressure and fetal heart rate at 16th, 24th, 28th, 32nd and 36 weeks of gestation.

III. Observation checklist to assess maternal outcome such as gain in weight/haemoglobin control over blood pressure, fetal distress, need for blood transfusion, any emergency hospitalization, mode of delivery and gestational age.

Antenatal intervention included following components:

1) Home care package (information booklet) which included meaning, risk factors, dangers of hypertension on mother and fetus, preventive measures and home

care, warning symptoms and daily diet menu

2) Antenatal and dietary advises given with the help of pictorial flip chart. In addition to antenatal care, it included help of husband, care of associated problems, telephone calls, extra visits, seeking professional assistance, weight gain patterns, effect of nutrition on fetal growth, sources of nutrients, consultation with nutritionist.

3) Demonstrations about testing and monitoring of weight, blood pressure, fetal movement, checking for edema.

4) Self-Care Compliance Checklist having items related to various activities like rest, sleep, diet, antenatal checkups, personal hygiene, monitoring and recording of blood pressure, weight, fetal movement, daily observation for edema, report in emergency.

Validity and reliability: The content validity was established from various experts in the field of nursing and obstetrics. The tool and intervention was modified as per their suggestion. Reliability was ascertained by split half and inter-consistency (r=0.96; 0.97; 0.94 respectively).

Ethical clearance was obtained from SKIMS Ethical Committee

Try-out of the tool and pilot study was done prior to final data collection to check the items for clarity, relevance and ambiguity and to determine the time taken for collecting the data.

Data collection procedure: An administrative approval was obtained from Medical Superintendent, and Head of the Department Obstetrics and Gynaecology, SKIMS. The antenatal staff including obstetricians, nurses, technicians, and medical record staff were contacted and informed about the purpose of the study to gain their cooperation. At 16th week of gestation, hypertensive pregnant women were identified keeping in view inclusion criteria. They were explained about the purpose of the study and consent was obtained. Ample of time was provided to the study subjects to understand and to accept the participation in the study. Once the completion of signing the consent form was over, the data on demographic variables was obtained. Then baseline assessment was done for both experimental group and control group. Recording was done then and there to maintain accuracy. A minimum number of six and maximum number of eight were studied per day. Intervention was administered systematically only on experimental group during 20th weeks of gestation. Maternal outcome was assessed and scored on the basis of measurement of physical and physiological parameters during 24th, 28th, 32nd and 36th weeks of gestation and during intra

partum period. During pregnancy, it was assessed in terms of gain in weight, gain in haemoglobin control over blood pressure, fetal distress, need for blood transfusion, any emergency hospitalization, and during intra-partum period it was assessed in terms of mode of delivery and gestational age.

Findings

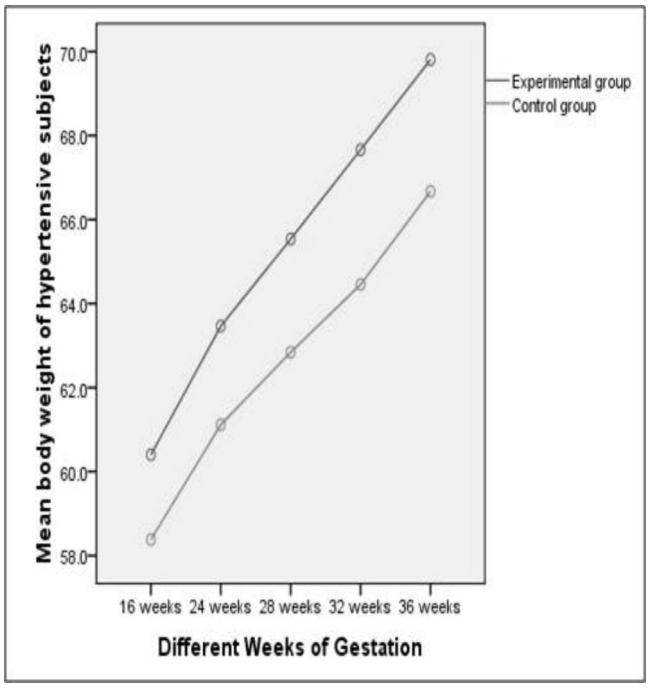
Section I: Demographic variables of subjects included age, socio-economic status, nutritional status and gravidity.

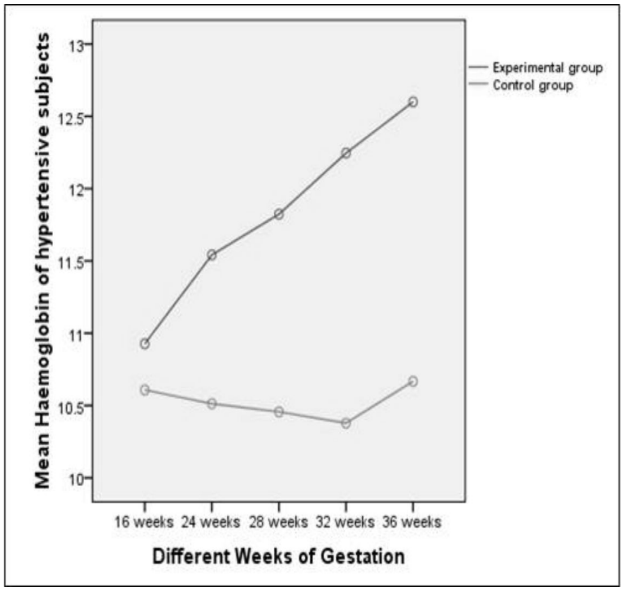
Table 1 Distribution of subjects among Experimental Group and Control Group according to Demographic Variables N=110

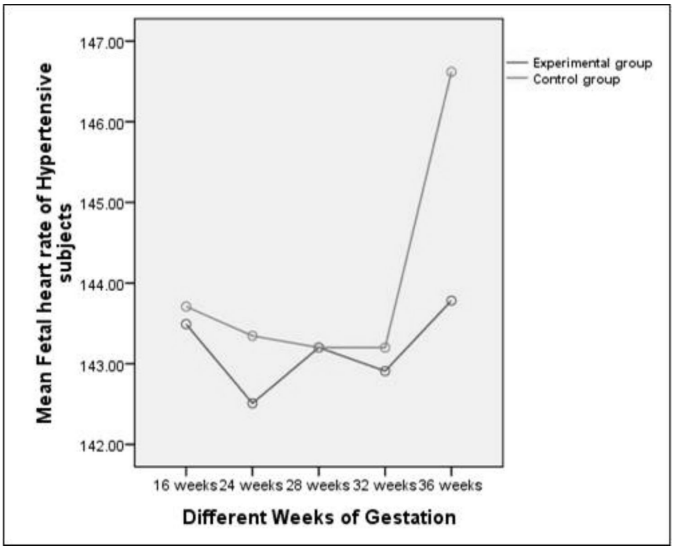
Demographic Variables	Experimental Group N=55	Control Group N=55	p-Value
Age (mean ± SD)	24.02 ±3.12	25.36 ±4.18	0.124
Less than 20 years	4 (7.27%)3	(5.45%)	
20-30 years	28 (50.90%)	27 (49.09%)	
More than 30 years	23 (41.81%)	25 (45.45%)	
Socio Economic Status			
High	3 (5.45%)	4 (7.27%)	0.332
Middle	32(58.18%)	30 (54.54%)	
Low	20(36.36%)	21 (38.18%)	
Nutritional Status			
Good	10(18.18%)	13(23.63%)	0.201
Average	30(54.54%)	32(58.18%)	
Fair	15(27.27%)	10 (18.18%)	
Gravidity			
Primigravida	39(70.90%)	40(72.72%)	0.312
Second gravida	14(25.45%)	10(18.18%)	
Multigravida	02(3.63%)	05(9.09%)	

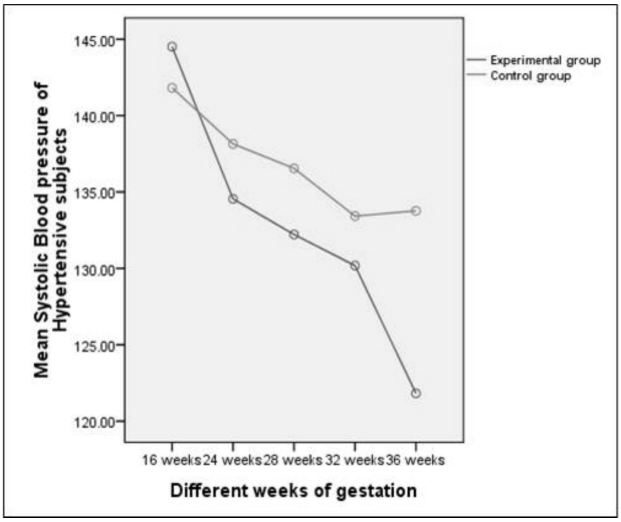
Data presented in **table 1** shows that the experimental group and control group were similar in all the demographic characteristics. The mean age of subjects was 24.02±3.12 years in experimental group and 25.36 ±4.18 years in control group. Maximum number of subjects from both groups belonged to middle socio economic class, had average nutritional status, and were primigravidae.

Section II: Comparison of physical and physiological parameters between experimental and control group of subjects at various weeks of gestation. (Figure1).These parameters included body weight, haemoglobin, blood pressure and fetal heart rate.









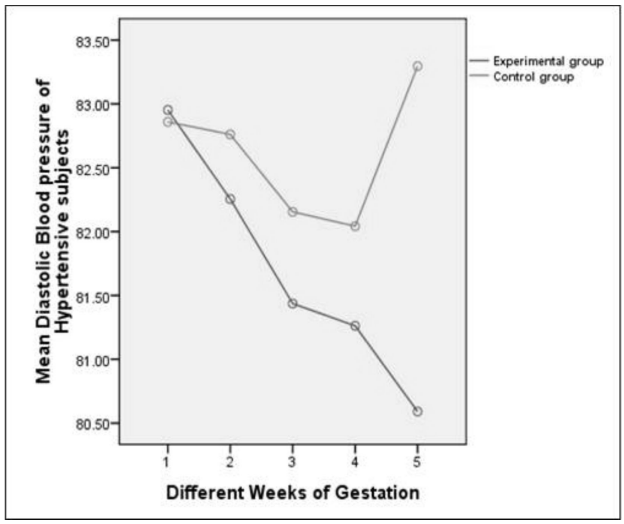


Figure1: Comparison between Experimental Group and Control Group in Terms of Mean body weight, haemoglobin, systolic Blood Pressure, diastolic blood pressure and fetal heart rate at Various Weeks of Gestation.

Figure 1 indicates that the mean weight at 20 weeks of gestation did not show any significant difference in between the experimental and control group. The mean weight and mean haemoglobin from 24-36 weeks of gestation was more in experimental group i.e., ($\bar{X}$ wt=63.46 ± 8.65 to 69.80 ± 9.30,$\bar{X}$ Hb=11.54±0.59 to12.6 ± 0.72) as compared to the control group i.e., ($\bar{X}$ wt=61.11 ± 7.38 to 66.67 ± 7.51; $\bar{X}$ Hb=10.51 ± 0.70 to 10.66 ± 1.04; P<0.05).The mean systolic blood pressure at 20 weeks of gestation did not show any significant difference in between the experimental and control group , at 24-36 weeks of gestation it started returning to normal in experimental group i.e., ($\bar{X}$=134.55 ±6.79 to 121.82 ±3.73) as compared to the control group ($\bar{X}$=138.15 ±6.27 to 133.76 ± 22.12); the mean

diastolic blood pressure level at 20 and 24 weeks of gestation did not show any significant difference in between two groups, at 28-36 weeks of gestation it was comparatively less in experimental group. The mean fetal heart rate in both groups was within normal limits.

Section III: Comparison of maternal outcome between experimental group and control group of subjects

Maternal outcome was assessed and scored on the basis of measurement of physical and physiological parameters during 24th, 28th, 32nd and 36th weeks of gestation and during intra partum period. The variables were categorized in three subcategories and were then compared between experimental group and control group of subjects (Table 2).

Table 2 Comparison of maternal outcome between Experimental and Control Group of subjects. N=110

Maternal outcome Variables	Categories	Experimental Group N=55	Control Group N=55	Odds Ratio (OR)	p Value
Gain in weight	Normal	52 (94.54%)	36 (65.45%)	35.95	
	Average	0	12 (21.82%)	3.37	0.001**
	Below Normal	3 (5.45%)	7 (12.73%)		
Gain in haemoglobin	Normal	44 (80%)	35 (63.64%)	6.84	
	Average	11 (20%)	20 (36.36%)		0.086
	Below Normal	0	0		
Control over Blood Pressure	Good	32 (58.18%)	14 (25.46%)	2.58	
	Average	23 (41.82%)	26 (47.27%)	69.48	0.001**
	Fair	0	15 (27.27)		
Fetal Distress	Absent	51 (92.73%)	36 (65.45%)	3.98	
	Mild Distress	4 (7.27%)	17 (30.91%)	22.32	0.006**
	Severe Distress	0	2 (3.64%)		
Emergency Hospitalization	No	47(85.45%)	28 (50.91%)	2.72	
	Once/Twice	8 (14.55%)	13 (23.64%)	48.33	0.001**
	>Twice	0	14 (25.45%)		
Mode of delivery	Normal vaginal	43 (78.19%)	28 (50.91%)		
	Assisted/instrumental	0	0	3.45	0.003**
	Caesarean	12 (21.81%)	27 (49.09%)		
Gestational age	Full term	47 (85.45%)	32 (58.18%)		
	Preterm	8 (14.55%)	23 (41.82%)	4.2	0.03*
	Very preterm	0	0		

** Significant at 0.01 level * significant at 0.05 level

Table 2 indicates that normal weight gain was more among experimental group subjects (OR= 35.95, 3.37) than their control subjects (p<0.05). Gain in haemoglobin was normal in maximum number of experimental group subjects. Maximum experimental group subjects (58.18%) had good control over blood pressure than control group subjects (25.46). There was significant difference in need for emergency hospitalization and absence of fetal distress between the groups. Majority of subjects in experimental group delivered babies by normal vaginal delivery (78.19%) and were full term (85.45%) as compared to subjects in control group (50.91%, 58.18% respectively), whereas 49.09% of control group subjects delivered by caesarean section (p<0.01).

Section IV: Association of maternal outcome with demographic variables of subjects.

Multivariate Logistic Regression was done to associate maternal outcome with demographic variables of hypertensive pregnant women i.e.; age, socio-economic Status (SES), nutritional status and gravidity.

Table 3 Logistic Regression for association of maternal outcome with demographic variable **N=110**

Maternal outcome variables	Demographic variables							
	Age		SE status		Nutritional status		Gravidity	
	OR	P value	OR	P value	OR	P value	OR	P value
Gain in weight	0.320	0.170	1.262	0.631	2.725	0.064	1.967	0.269
	0.308	0.013*	2.337	0.998	5.480	0.023*	1.701	0.334
Gain in haemoglobin	3.064	0.126	1.654	0.698	1.032	0.546	1.689	0.625
	0.574	0.324	1.984	0.652	4.630	0.871	1.369	0.632
Control over BP	0.000	0.998	0.448	0.129	0.691	0.523	2.053	0.274
	0.687	0.687	1.587	0.454	0.551	0.356	1.648	0.428
Absence of Fetal Distress	0.592	0.423	1.667	0.164	0.710	0.415	1.129	0.775
	0.869	0.869	3.105	0.015	0.469	0.154	0.948	0.878
Need for blood transfusion	1.333	0.765	1.025	0.965	0.612	0.374	1.216	0.743
	0.752	0.540	2.681	0.413	2.659	0.301	1.103	0.850
Emergency hospitalization	3.696	0.126	1.888	0.080	0.651	0.293	1.127	0.771
	0.825	0.533	2.348	0.127	0.962	0.937	1.248	0.565
Mode of delivery	0.370	0.110	0.920	0.815	0.577	0.570	1.620	0.227
	0.812	0.495	4.712	0.025*	0.234	0.234	1.669	0.159
Gestational age	1.544	0.573	2.699	0.010*	0.724	0.470	1.881	0.156
	1.305	0.435	2.552	0.110	0.575	0.294	2.296	0.042*

* significant at 0.05 level

In associating maternal outcome with demographic variables of subjects (table 4) findings have indicated significant association ($p<0.05$) of:

- Gain in weight with age group of 20-30 years (0.013*) and good nutritional status (0.023*).
- Mode of delivery with high socio-economic status (0.025*).
- Gestational age with middle socio-economic status (0.010*) and primigravida (0.042*).

Discussion

A pregnancy which may be complicated by any medical or behavioural disorder, profoundly affect the health of a woman and her growing fetus. Hypertension is one of the most common disorders of pregnancy and contributes significantly to adverse outcome, therefore it is imperative to implement and evaluate specific antenatal intervention program in hypertensive pregnant women to improve maternal outcome.

In distribution of demographic variables (table 1) maximum numbers of subjects from both groups belonged to middle socio economic class, average nutritional status, and were primigravidae. Amin and Ali (2001)[14] studied correlation of maternal factors like age, literacy, income, type of family, Hb level and antenatal care on the nutritional status of pregnant women and found that majority of women had average nutritional status .

In comparing physical and physiological parameters between the groups at various weeks of gestation (Figure 1), the mean weight and mean haemoglobin from 24-36 weeks of gestation was more in experimental group as compared to the control group. The mean systolic and diastolic blood pressure at 24-36 weeks of gestation started returning to normal in experimental group as compared to the control group where it continued to remain high. The mean fetal heart rate among both groups varied at various weeks but was within normal limits. **Gupta and Gupta (2007)**[15] made comprehensive review of heart diseases in pregnancy and found reduce in the high blood pressure levels and normal fetal heart among a group of 212 pregnant women on whom midwives and obstetricians focused on recognition of risk factors, early diagnosis, prompt identification and treatment of complications, collaborative and coordinated care of women, education regarding rest, diet, proper sleep etc.

In comparing maternal outcome between experimental group and control group of subjects with hypertension (Table 2), normal weight gain was more among experimental group subjects (OR= 35.95, 3.97) than their control subjects ($p<0.05$). The findings are

consistent with the study of **Thangaratinam, et al (2012)**[16] who studied the effect of dietary and lifestyle interventions in pregnancy on maternal and fetal weight.

Gain in haemoglobin was normal in maximum number of experimental group subjects. Similar observations were reported in the findings of a study on weight gain patterns during pregnancy conducted at Srinagar.[17] They reported that increase in weight and haemoglobin was highest in mothers who had adequate intake of calories and proteins. The study conducted by **Claesson et al (2007)**[18] on weight gain restriction for 504 obese pregnant women in San Francisco indicated a significant and desired weight gain in intervention group as compared to the non-intervention group.

In the present study, majority of subjects in experimental group (58.18%) had good control over blood pressure as compared to subjects in control group (25.46%). The findings indicate that there is significant difference ($p<0.05$) in control over blood pressure, need for emergency hospitalization and absence of fetal distress between the groups ($p<0.05$). These findings are supported by **Fretts (2003)**[19] who in his study on 824 preeclamptic pregnant women, found that blood pressure was under control, incidence of preeclampsia decreased from 13.1 to 1.2/1000 live births, operative interventions decreased to 16.3% by regular prenatal visits.

Majority of subjects in experimental group of present study delivered babies by normal vaginal delivery (78.19%) and full term (85.45%) as compared to subjects in control group (50.91%, 58.18% respectively), whereas 49.05% of control group subjects also delivered by caesarean section. Al Muhim et al[9] studied the perinatal outcome in Baghdad among 685 women with preeclampsia. They reported 30.2% premature delivery, 22.8% induced delivery, 14.9% caesarean deliveries and 69.2% spontaneous delivery. Agarwal, Goswami and Temp[10] in a study to find out maternal and perinatal outcome in women with antepartum eclampsia, found that at admission systolic and diastolic blood pressure was 156 ± 22 and 104 ± 18mmHg respectively. 22% mothers delivered by caesarean and 18% by forcep or vacuum and reason for assisted delivery was failed induction, decreased maternal efforts and fetal distress. Blood pressure was persistently high in 33% cases, mean birth weight was 2077 ± 718 and low birth weight was found in 33.12%, asphyxia (Apgar score < 4 at one minute) in 14% and neonatal mortality was 143/1000 live births.

Findings of present study have indicated significant association ($p<0.05$-table 3) of gain in weight with age group of 20-30 years and good nutritional status; mode of delivery with socio-

economic status; gestational age with socio-economic status and gravidity. Ali and Kousar[17] reported that only maternal age and dietary calorie intake were found to have significant effect on weight gain ($p<0.001$). **It** was reported that 26% mothers belonged to <20 years of age and had the lowest weight gain of 7.08 ± 1.85Kg. As the age advanced the weight gain also increased being 7.83 ± 2.01Kg in the 21-25 years age group and 9.16 ± 2.05Kg in the 26-30 years age group. With regard to socio economic class, maximum weight gain has been seen in mothers belonging to SES class I i.e.; 10.6 ± 2.6Kg; and the least weight gain in mothers who belonged to SES class IV i.e;7.09 ± 0.18Kg. It was reported that weight gain and control over BP level was significantly associated with the age and social class of pregnant women.

Conclusion

It is evident that the mean weight and haemoglobin of experimental group was more, the mean blood pressure was less as compared to the control group. It was found that subjects with high socio economic status delivered babies more by caesarean section which may be related to their sedentary life style. Subjects with middle socio-economic status delivered live and full-term babies more which may be probably due to good nutritional status in middle class. Primigravida subjects delivered more full-term babies than multigravida subjects which indicate that high parity leads to delivery of preterm baby. Thus home care package and regular monitoring during pregnancy is essential aspect to improve maternal outcome.

In our health care settings, there is no protocol for antenatal education programmes, only women are provided incidental teaching during their follow up visits. Therefore, it is imperative to impart antenatal education in antenatal high risk clinics to curb the maternal and neonatal mortality rates associated with these risks and have optimum birth outcomes

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Conflict of Interest: None

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What does the study convey?

The antenatal intervention administered to hypertensive pregnant women had beneficial impact on their maternal outcome and improved their self care ability. There is need to have a separate room in antenatal clinic where nurse can practice as midwifery practitioner and conduct counseling sessions, use various teaching aids and make it a routine activity.

Who will use the findings?

Nurse scholars' midwifery practitioners and nursing students

How can findings be put into practice?

- Learning and practising self care strategies by hypertensive pregnant women.
- Conduct counselling sessions by nursing students and officers at maternity departments while using various teaching strategies.
- Written material in the form of booklet can be made available in maternity units.

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ASSESSMENT OF KNOWLEDGE REGARDING DOG BITE AMONG ADULTS RESIDING IN SELECTED RURAL AREA OF TURKABAD KHARADI, AURANGABAD

***Pradnya Waghmare ** Dr. Supriya C, ***Sumed Poghe, ****Sunaina Patawde**

Abstract

Rabies is a viral zoonosis, an animal disease transmissible to humans, caused by Rhabdo viruses of the genus Lyssa virus. It is almost invariably fatal in humans. More than 99.9% of human deaths from rabies reported worldwide result from the bite of a rabid dog due to non-administration of immunoglobulin in cases of severe exposure. The study was conducted with the objective to assess the knowledge regarding dog bite among adults and to associate the knowledge with the selected demographic variables. Survey Approach with descriptive research design was used in this study. 500 adults were selected by using random sampling technique for the study. Structured knowledge questionnaire were used to collect the data. Distribution of adult's knowledge regarding dog bite, the overall percentage shows that (4%) had poor level of knowledge, (38%) had average level of knowledge, (51.2%) possessed good knowledge, and (6.8%) were having very good knowledge score. Results revealed gender, education, occupation, information of dog bite, vaccination status of adults, information regarding dog bite had significant association with knowledge. However, People in Rural India need to have more awareness and basic knowledge regarding the appropriate management of dog bite wound and vaccine administration.

Key words: knowledge; dog bite, adults.

Introduction

"Bite us once, shame on the dog; bite us repeatedly, shame on us for allowing it."

Phyllisschlafly

Rabies is primarily a disease of animals. All warm blooded animals can be infected with rabies virus. It is an acute, highly fatal viral disease which affects the central nervous system. Rabies is also known as hydrophobia. Rabies is caused by the virus Lyssavirus[1].

Rabies an infectious fatal disease is caused and transmitted to a human being by the bite of an infected, warm-blooded animals like dogs, jackals, wolves, cats, monkeys etc.

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More than 95% of the cases are bitten by dogs. It has the highest case fatality rate of any known human infection; almost 100%.It is the only communicable disease of man which is always fatal.[2]

Background

National Multicentric Rabies Survey, conducted in 2004 by the Association for Prevention and Control of Rabies in India in collaboration with the World Health Organization, showed 20 565 deaths from rabies per year. Most animal bites in India (91.5%) are by dogs, of which about 60% are by strays and 40% by pets. The incidence of animal bites is 17.4 per 1000 population. A person is bitten every 2 seconds, and someone dies from rabies every 30 minutes. The annual number of person-days lost because of animal bites is 38 million, and the cost of post-bite treatment is about $25 million[3.]

Public health educational programs are needed to create awareness both in the medical community and in the public regarding the dangers of inadequately managed animal bites. The importance of proper wound care, post exposure vaccination with modern tissue-culture, vaccine and the administration of human rabies immune globulin, The World Health Organization (WHO) in 2003 says that death due to rabid dog bites in India is increasing every year. About 17,000 people die of rabies in India every year[4].

Review of Litrature and Need of the Study

The Association for Prevention and Control of Rabies in India (APCRI) Conducted a national multi-center survey with the help of 21 medical schools. This community-based survey covered a representative population of 10.8 million in mainland India. Hospital-based data were also obtained from the 22 infectious diseases hospitals. A separate survey of the islands of Andaman, Nicobar, and Lakshadweep, reported to be free from rabies, was also undertaken. The annual incidence of human rabies was estimated to be 17,137. Based on expert group advice, an additional 20% was added to this to include paralytic/atypical forms of rabies, providing an estimate of 20,565 or about 2 per 100000 population. The majority of the victims were male, adult, from rural areas, and unvaccinated. The main animals responsible for bites were dogs (96.2%), most of which were stray dogs. The disease incubation period ranged from two weeks to six months. Hydrophobia was the predominant clinical feature. Many of the victims had resorted to indigenous forms of treatment following animal bite, and only about half of them had sought hospital attention and the islands of Andaman, Nicobar and Lakshadweep where found to be free of rabies.[5]

(W.H.O, 2003) Performed survey on dog bite, WHO statistics shows that three out of every five persons died of rabies are Indian and 90% of them are due to dog bite and belong to poor and low socio economic group. India alone reports 30,000 human deaths annually; accounting for about 80% of the global deaths. The actual number is not known since rabies is not a notifiable disease. Higher incidence of rabies due to dog bite is seen in Karnataka state in the country. According to this study the annual number of death worldwide caused by rabies is estimated to be 55,000, mostly in rural areas of Africa and Asia. The most frequent way that humans become infected with rabies is through bite of infected dogs.[6]

Rabies typically affects the most vulnerable members of society, children and lower socio-economic classes. This is likely due to poor knowledge and uptake of preventive measures. Studies have shown only around 70% of the population of India have heard of rabies, only around 30% knew to wash wounds after animal bites and a large proportion were not compliant with treatment. Furthermore, rabies is not a notifiable disease in India, which makes it probable that the true burden has been underestimated. Although there have been reviews focusing on rabies burden in India, the majority were published prior to 2000. They all pointed to large discrepancy between estimates of rabies burden in India, which makes it difficult for policy makers to understand the scale of the problem and plan how to tackle it. As rabies is an acute condition and its control is centered on preventive measures, incidence is the most appropriate measure of its burden in the context of improving health policy.[7]

Problem Statement

Assessment of knowledge regarding dog bite among adults residing in selected rural area of Turkabad Kharadi, Aurangabad.

Objective

1. To assess the knowledge regarding dog bite among adults.
2. To associate the knowledge with the selected demographic variables.

Materials and Method

Research Approach: Survey approach

Research Design: Descriptive research design.

Population & Sample: Adults in Turkabad kharadi, Aurangabad

Sample Size: 500 adults

Setting: The study was conducted in Turkabad kharadi, Aurangabad

Sampling Technique: Non probability convenience sampling

Tool: Structured knowledge questionnaire including demographic variables was used for the study.

Sampling Criteria

Inclusion Criteria

1) Adults who are willing to participate in the study.
2) Adults who are available at the time of data collection.
3) Adults who can understand and write English, Marathi, and Hindi.

Exclusion Criteria

Adults who already had dog bite**.**

Findings

Section 1: Assessment of knowledge regarding dog bite. The level of knowledge is divided under following headings: poor, average, good, very good, excellent.

Table No 1: Knowledge score regarding dog bite among adults. N= 500

Level of Knowledge Score	Score	% score	Knowledge score	
			N	%
Poor	1-5	0-20%	20	4%
Average	6-10	21-40%	190	38%
Good	11-15	41-60%	256	51.2%
Very good	16-20	61-80%	34	6.8%
Excellent	21-25	81-100%	0	0%
Minimum score	0			
Maximum score	19			
Mean score	10.97 ± 3.160			
Mean Percentage	43.88			

The above table shows that (4%) had poor level of knowledge, (38%) were having average level of knowledge, (51.2%) were having good level of knowledge, (6.8%) were having very good knowledge score and no one had excellent level of knowledge. The minimum score was 0 and the maximum score was 19, the mean score for the test was10.97 ± 3.160 and mean percentage of knowledge was 43.88

Section II: Association of knowledge with the selected demographic variables

There was a significant association of knowledge score with gender, education, occupation, information of dog bite, and vaccination status of adults, regarding dog bite.

There was a no significant association of knowledge score with age, occupation, Sources of information and experience of dog bite of adults.

Discussion

Bhuyar, (2007) Conducted A study on knowledge and practices regarding management of dog bite were recorded by using pre-test Performa in rural area of Bangalore district. Data were collected by interview technique. Maximum dog bite cases were seen in the age group of up to 30 years of age. More number of incidences of dog bite were seen in males as compared to females. Total cases enrolled in the study were 451 out

of these 289 were males and 162 were females. Maximum dog bites were by pet dogs (278/451). Majority of patients (44.3%) did not apply anything on the wound before seeking the treatment. The practice of washing the site of dog bite with soap and water was seen in 23.5% subjects only. Other practices included application of chilly, cowdung and antiseptic. Health education of general population is needed to improve their knowledge regarding washing of wound with soap and water, immunization of dog and regarding early reporting to hospital.[8]

The finding of the study show that mean and standard deviation was 10.97 and 3.160 respectively. And also the mean percentage of knowledge score of adults was 43.88 respectively. So it is concluded that adults have some knowledge regarding dog bite. Public health educational programs are needed to create more awareness both in the medical community and in the public regarding the dangers of inadequately managed animal bites.

Conclusion

In this study from detail analysis it shows that Rural India is lacking awareness and basic knowledge regarding the appropriate management of dog bite wound and vaccine administration.

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Conflict of interest: None

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What does the study convey?

This study conveys the existence of knowledge regarding dog bite, wound management and vaccination.

Who will use these findings?

Findings of the study can be utilized by community health nurses, social workers and family members of dog bite patient to get a better understanding wound care and vaccination.

How can the findings be put into practice?

Workshops, Seminar, video presentations can be used by the nursing personnel for educating the community regarding dog bite wound care and vaccination.

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Commentary

COVID 19 PANDEMIC: RESEARCH PERSPECTIVE

Dr. Usha Mullick Ukande

"The biggest mistake someone can make during this pandemic is to squander this once-in-a-lifetime opportunity for research".

- Anonymous

This period is the first and perhaps the most important window of opportunity for the research in this century for health care fraternity, experts and public health specialists to come together and contextualize the available evidence as applicable to the local, national and global settings in terms of testing, treatment, prophylaxis and exploring the social and economic impact.

There is abundance of evidence, the need is to document and use it for formulating "new normals".

There can indeed be genuine tension between research and the urgent desire to help patients with whatever is available during public health emergencies. Some caregivers may feel that providing clinical care and conducting clinical research are incompatible. But, if we do not learn from the present situation, contemplate on it, document it, draw conclusions as to how to best help such patients in future based on scientific evidence, then how the governments and top health agencies will form guidelines? Well, whatever be our concerns, we will have to give the best possible care using available resources and at the same time conduct research and/or help those who are conducting research or gathering data for preparing strategies in order to improve care based on scientific evidence.

During this Covid-19 pandemic NURSES and other health professionals can do: Quantitative Studies, Qualitative Studies and also Mixed Method Studies to explore the magnitude as well as the impact of this giant health menace that has engulfed the whole world.

Besides the documentation of quantitative data which is most important for knowing the magnitude of the burden of the disease, its

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impact on HCWs and on people in general needs to be explored on the lines:

- Will Impact Each Generation Differently
- Long Term Impact vs Short Term Impact
- Physical, Mental/Psychological, Social, Economical, Spiritual, Work-Culture, Political impact.

Different types of studies such as evaluative, exploratory, descriptive will give us deeper understanding of this pandemic and will open doors for planning better strategies for the future if the countries will face similar situation.

Evaluative Studies:

- Evaluate the clinical characteristics of COVID-19 in pregnancy and the impact on mental status of pregnant women.
- Impact on Births
- Retrospective study to identify intrauterine vertical transmission potential of COVID-19 infection
- Measuring resilience in the face of economic uncertainty

Exploratory Studies:

- Identify and develop a system that is sensitive and specific for community-based surveillance.
- Develop criteria/ indicators for referral and ascertain their outcome impact.
- Explore the need to quarantine children, minimum period of quarantine and its mental and socio-economic costs relative to the current outbreak.
- Explore the mental trauma and social isolation faced by frontline health care providers during COVID crisis
- Explore family crisis of COVID patients and their relatives during quarantine period

Descriptive Studies:

- Describe the effect of digital data collection in the face of pandemic and medical break down for providing health information
- Describe the effect of pandemic on poor and vulnerable in social living conditions
- Measure the poverty probability index in the context of COVID-19 Pandemic
- Identify the response efforts on the people who are most likely to suffer from COVID-19's health and economic consequences

Studies Relating to Policy Development:

- Clinical course and risk factors for mortality of adult inpatients with COVID-19
- The COVID-19 outbreak and implications for the health care delivery
- Evidence based management guideline

for the COVID-19 pandemic- Meta-analysis

Developing Gadgets:

- Develop phone based surveys on different aspect of impact of COVID-19 Pandemic.
- Develop Information, education and communication (IEC) messages through mobile app to encourage self-referral

Qualitative Studies:

- The impact of social distancing among near and dear ones.
- Perception of people on irrational spitting on public places and nurses attitude towards it as health care workers
- Lived experiences of COVID -19 survivors, their family members and relatives
- Lived experiences of frontline care givers during COVID crisis

Nurses and all other health care professionals should use this opportunity to explore the above mentioned new possibilities in research. The field of 'nursing informatics' that was left unexplored by many practicing nurses has already been put into practice by nursing educators, this can be further delved into and innovation in this area will be welcomed by all health care professionals. Time is ripe for developing a new approach and innovative framework for nursing academics and nursing practice that would be based on novel evidence.

Short Communication

INNOVATION IN NURSING

Dr. Supriya B Chinchpure

Nurses by nature are inquisitive and, for good reason. Considering health care's swift pace, ongoing advancements and ever-changing technology, the opportunity to ask questions, ponder processes or consider alternative ways of thinking is natural and necessary.

As the largest segment of the health care workforce, and the providers with the most direct connection to patients and their families, nurses are well positioned to identify innovative solutions to problems.

From a new technique to an assistive device, the daily practice of nursing regularly includes thinking creatively or 'outside the box,' as outcomes of patient care often depend on this fine-tuned skill.

For a profession with a storied tradition as developers of novel ways to advance health and meet ever-evolving human needs, nurse innovators will be more crucial now than ever as the world enters a new era of **healthcare** challenges.

In reality, creative thinking and idea development are much more than job fulfillment. They are the first steps in bringing innovation to life. From optimizing patient care to improving safety and patient outcomes or simply creating efficiencies in day-to-day responsibilities and beyond, nursing innovations drive our profession forward. Nursing innovation is a fundamental source of progress for health **care** systems around the world.

According to the International Council of Nurses, innovation is highly needed for nursing practice in promoting health, minimizing risk factors for health conditions, avoiding diseases, improving attitudes toward the healthy life, and enhancing the treatment strategies and procedures.

The American Nurses Association emphasized that all registered nurses to be leaders within the profession, working to influence policies and encourage innovation. As the encouragement of nursing professionals to utilize their acquired

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knowledge and skills to creatively generate and develop new ways of working, drawing on technologies, systems, theories and associated partners/stakeholders to further enhance and, evaluate nursing practice.

Innovation is a grandiose thing. It gives us insight, shows us possibilities that once didn't exist, opens the door to opportunity and brings value to healthcare delivery, outcomes, patient experience and the progression of nursing.

Innovation is to analyze the opportunities or sources. Innovation starts with a good idea, but it is much more than that. Successful innovation aim at being the best from the very beginning. Effective innovation starts small. It also refers to the process of turning that good idea into something that can be used, something that is implementable and achievable, and hopefully. It also aims to do one specific thing. It is both conceptual and perceptual. Innovation is the application of creativity or problem solving that results in a widely adopted strategy, product, or service that meets a need in a new and different way. Innovations are about improvement in quality, cost-effectiveness, or efficiency. It will bring about better health promotion, disease prevention and better patient care.

Building a foundation of innovation in nursing not only fuels growth and progression within the profession, it elevates nursing creativity and stimulates unique solutions to problems or issues. Ultimately, nursing innovations lead to new or improved resources that drive costs down and advance nursing care and optimal patient outcomes.

Throughout the years, nursing innovations have directly and indirectly advanced the nursing profession to where it is today. We need to continue to allow innovations in nursing to be fueled because a tomorrow without innovation would be a tomorrow that remains stagnant rather than progressive.

We are at a place in time where it's all about high quality patient care at the right cost and nursing innovations from nurses at the bedside to the leadership table, and new graduates to tenured veterans - can help take us where we need to be.

RESPECT AND HONOUR THE NATURE

"What we eat is RADIATION. Our food is so much quanta of ENERGY". Dr George W.Crile of Cleveland told a gathering of medical men. "This all important radiation, which releases electrical currents for the body's electrical circuit, the nervous system, is given to food by the sun's rays". Atoms, Dr Crile says, "are solar systems. Atoms are the vehicles that are filled with solar radiance as so many coiled springs. These countless atomfuls of energy are taken in as food. Once in the human body, these tense vehicles, the atoms are discharged in the body's protoplasm, the radiance furnishing new chemical energy, new electrical currents. Your body is made up of such atoms, they are your muscles, brains, and sensory organs such as the eyes and ears".

Some day scientists will discover how man can live directly on solar energy.

"Chlorophyll is the only substance known in nature that somehow possesses the power to act as a sunlight trap". William L. Laurence wrote in *New York Times,* "It catches the energy of sunlight and stores it in the plant. Without this no life could exist. We obtain the energy we need for living, from the solar energy stored in the plant-food we eat or in the flesh of animals that eat the plants. The energy we obtain from coal or oil is also solar energy trapped by the chlorophyll in plant life millions of years ago. We live by the 'SUN' through the agency of 'CHLOROPHYLL' of the plants"

Do you see our total dependence for our lives on the nature…..the SUN and the PLANTS?

Let us Wake Up! Respect and honour the nature.

(Excerpts from 'Autobiography of a Yogi' by Paramahansa Yogananda)

Dr Usha Mullick Ukande

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