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The Prevalence And Impact Of Restless Leg Syndrome On Staff Nurses

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Abstract: A study was conducted to find the level of knowledge on RLS among staff nurses and effectiveness of a STP on RLS among staff nurses in selected hospital, Mangaluru (Karnataka). A Quantitative evaluative approach with Pre-experimental one group pre-test post-test design was adopted with von Bertalanffy's General system model as a frame work. Data was collected from 100 staff nurses through convenience sampling using a personal data sheet and Self Structured questionnaire. Analysis revealed that in the pre-test, only 6% had good knowledge and post-test scores were improved to 97% regarding RLS. This indicated effectiveness of structured teaching program. The staff nurses who have prolonged working hours, irregular shifts and physical fatigue. So, educating the staff nurses to use better ergonomics is effective in reducing the symptoms of RLS.

Index Terms - Restless leg syndrome (RLS), Structured teaching program (STP), Ergonomics

I. INTRODUCTION

RLS is a neurological condition that causes a uncontrollable desire to move the legs. The movements are like uncomfortable feelings, something crawling, pulling, or itching, deep within both legs. The unpleasant feelings make it difficult for an affected person to fall asleep or stay asleep. The symptoms disturb the sleep and cause daytime fatigue. Research Studies show that RLS patients are prone to hypertension, headaches, and sleep difficulties.

Electromyelography and nerve conduction studies are used to diagnose Radiculopathy or Neuropathy. Polysomnography is used to quantify the frequency of leg movements and characterize the pattern of sleep. Several complimentary therapies like massage, yoga and cognitive-behavioral interventions, have been recommended for people suffering from RLS and fatigue. In addition, heat therapy is used to relieve the symptoms of this disorder. A variety of methods, such as local heat therapy, sauna and spa bath, are used for heat therapy.

The nurses, who work in ICU settings, OT, Labour Rooms are exposed to stress since they provide care for critically ill clients, complicated life support and painful procedures for patients. The prevalence rates of personal-related fatigue and work-related fatigue in nurses are estimated to be 41.4% and 39.1%, respectively.

II. METHODOLOGY

The methodology includes research approach, research design, variable, setting of the study, population, sample and sampling technique, sampling criteria, development and description of sampling technique, method, data collection process and plan for data analysis.

2.1 RESEARCH APPROACH:

In this study we used quantitative evaluative approach. The purpose of this study is to assess the effectiveness of structured teaching program on level of knowledge regarding restless leg syndrome on knowledge among staff nurses in selected hospital Mangalore.

2.2 RESEARCH DESIGN:

In this study pre-experimental one group pre-test, post-test design is used to treat the study objectives.

2.3 SETTING OF THE STUDY:

The present study research design setting includes Medical and surgical wards of District, Government Wenlock hospital selected hospital in Mangaluru, Karnataka.

2.3 POPULATION:

The target population for the present study comprised of staff nurses, who work in medical and surgical wards of District, Government Wenlock hospital selected hospital in Mangaluru, Karnataka.

2.4 SAMPLE TECHNIQUE:

In this study non probability convenient sampling techniques is used. The sample size of present study consisted of 100 staff nurses in selected hospital in Mangalore.

2.5 CRITERIA FOR SELECTION OF THE SAMPLE :

INCLUSION CRITERIA:

Staff nurses who are available at a time of data collection.

2.6 DEVELOPMENT OF TOOL:

In this research study a self-structured knowledge questionnaire was developed by the researcher to assessing the knowledge regarding restless leg syndrome among staff nurses. For the development of the tool, research and non-research literature is reviewed and suggestions of experts were taken to determine the areas to be included. The structured questionnaire contains 100% knowledge based questions. Tool was developed by using source that was need from review of literature, preparation of tool, expert opinion

2.7 CONTENT VALIDITY OF TOOL:

The constructed tool along with objective was designed for expert validation and submit to the experts from the field of nursing. Experts gave their opinions and suggestions regarding each items in the tool in terms of strong agreement or dis-agreement. The items of tool were modified according to the recommendation and suggestions of the experts.

2.8 DESCRIPTION OF TOOL:

The tool for data collection had two sections.

Section A: Demographic Proforma:

This section contains 10 items for obtain baseline information of the nursing interns regarding their age (in years), gender, Type of family, income of the family, Qualification, Year of Experience, Source of information, Source of Recreation, Total working hours, Total hours of rest and sleep.

Section B:Structured questionnaire

This section is concerned with assessing the knowledge regarding restless leg syndrome among staff nurses. The questionnaire consists of 20 items each statement carries 4 alternative answers. Each item has a score from 1-4.

INTERPRETATTION OF SCORES:

CATEGORY	SCORE
GOOD	14-20
AVERAGE	7-13
POOR	0-6

2.9 METHOD OF DATA COLLECTION:

Data collection is the information needed to address a problem

- Formal permission was obtained from ethical committee for conduct the research study
- Consent was obtained from the participants regarding their willingness to participate in this study
- Subjects were selected according to the selection criteria
- In order to obtain a free and true response of data collection invigilator after a brief introduction explain the purpose of the study to the samples

2.9 PLAN FOR DATA ANALYSIS:

Data was analyzed as follows:

- Organising the data in the master sheet.
- Frequency and percentage of data was calculated for describing the demographic variables.
- Mean, mean percentage and standard deviation were used to present the assessment of knowledge regarding restless leg syndrome among staff nurses
- Results are presented in the form of tables and graphs.

Paired 't' test is used to assess the effectiveness of standard teaching practice on knowledge regarding R in staff nurses in medical and surgical wards of District, Government Wenlock hospital selected in Mangaluru, Karnataka. Chi square is used to find out the association between pre-test knowledge score with selected design.

III. RESULTS:

This chapter deals with the analysis and interpretation of results of data collected from staff nurses regarding the effectiveness of structured teaching program on knowledge regarding restless leg syndrome. An evaluative approach was adopted to assess the effectiveness of structured teaching program on knowledge regarding RLS among staff nurses. Data collected from 100 staff nurses. They were tabulated, analyzed, and interpreted using descriptive and inferential statistics based on the objectives of the study

3.1 The objectives of the study are to:

- Asses the pretest level of knowledge regarding RLS among staff nurses in selected hospital in Mangalore
- To assess the effectiveness of structured teaching programme on level of knowledge regarding RLS among staff nurses in selected hospital in Mangalore
- To find the association between pretest scores with selected baseline variables among staff nurses in selected hospitals in Mangalore.

3.2 Hypothesis of the study are:

H1: There is a significant difference between the pre-test and post-test knowledge scores

H2: There is a significant association between the pretest knowledge scores and selected baseline variables

3.3 ORGANISATIONAL FINDINGS

The data collected from staff nurses have been organized and presented under the following headings

PART A: Description of demographic characteristics of staff nurses
PART B: Assessment of level of knowledge of staff nurses regarding Restless Leg Syndrome
PART C: Effectiveness of structured teaching program on knowledge regarding Restless Leg Syndrome
PART D: Association between pre-test knowledge scores and selected demographic characteristics

3.4 PART A: Description of demographic characteristics of staff nurses

This part deals with the distribution of participants according to their demographical characteristics. Data was analyzed using descriptive statistics and are summarized in terms of frequency and percentage.

TABLE 1
Demographic characteristics

DEMOGRAPHIC CHARACTERISTICS	VARIABLES	FREQUENCY	PERCENTAGE
Age	21-30	41	41%
	31-40	27	27%
	41-50	22	22%
	Above 50	10	10%
Gender	Male	8	8%
	Female	92	92%
Type of family	Joint	23	23%
	Nuclear	72	72%
	Extended	5	5%
Income of family	1-5 L	57	57%
	6-10L	26	26%
	10-15L	16	16%
	Above 15	1	1%
Qualification	BSc	19	19%
	GNM	78	78%
	MSc	3	3%
Years of experience	1-3	23	23%
	3-5	23	23%
	5-10	27	27%
	>10	27	27%
Source of information	Mass media	62	62%
	Newspaper	21	21%
	Magazine	9	9%
	Film	8	8%
Source of recreation	Hobbies	12	12%
	Music	50	50%
	Film	26	26%
	Gadgets	12	12%
Clinical area	6 hours	21	21%
	8 hours	74	74%
	10 hours	4	4%
	12 hours	1	1%
Sleep	4 hours	3	3%
	6 hours	64	64%
	8 hours	32	32%
	10 hours	1	1%

The data in Table 1 shows that majority of participants (41%) are in the age group of 21-30 years while 27% are in between 31-40 years. With regard to qualification, most of the staff nurses (78%) are GNM Course holders , whereas 19% are B.Sc Nursing course holders.Concerning the gender nearly all participants (92%) are females while only 8% are males. Regarding the years of clinical experience, 27% of them have an

experience between 5-10 years. Nearly 62% of the staff nurses gained information through Mass media, 21% through newspaper, 9% through magazines and 8% through films.

A) PERCENTAGE DISTRIBUTION OF STAFF NURSES ACCORDING TO THEIR AGE

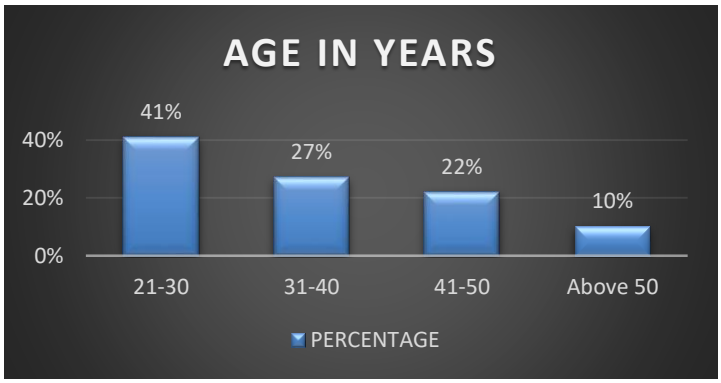

Figure 1: Bar graph showing distribution of staff nurses according to age

The above figure shows the percentage distribution of staff nurses according to their age. About 41% of the participants belong to the age group of 21-30 years, 27% of participants belong to the age group of 31-40 years, 22% belong to the age group 41-50 and only 10% of the participants belong to the age group of above 50 years.

PERCENTAGE DISTRIBUTION OF STAFF NURSES ACCORDING TO THIR GENDER

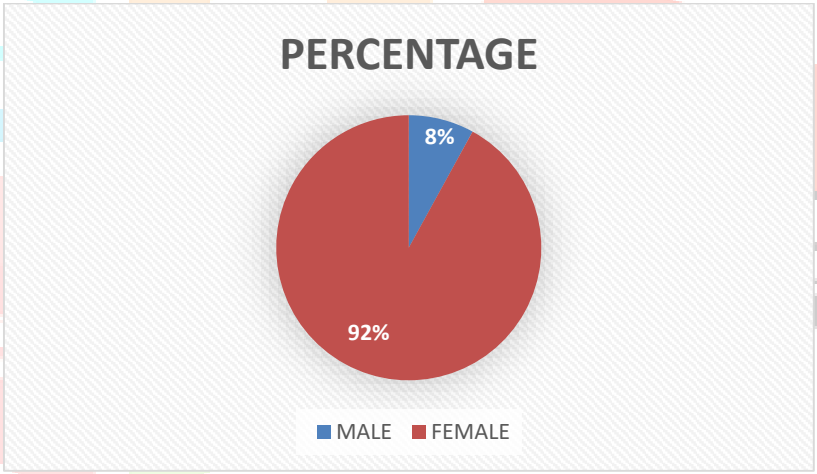

Figure 2: Pie chart shows distribution of staff nurses according to their gender

Percentage distribution of staff nurses according to their gender shows that 92% of then are females while only 8% are males.

PERCENTAGE DISTRIBUTION OF STAFF NURSES ACCORDING TO THEIR TYPE OF FAMILY

The percentage distribution of staff nurses according to their type of family indicates that 72% of them belong to nuclear family, 23% of them belong to joint family and only 5% belong to extended families.

PERCENTAGE DISTRIBUTION ACCORDING TO INCOME OF FAMILY

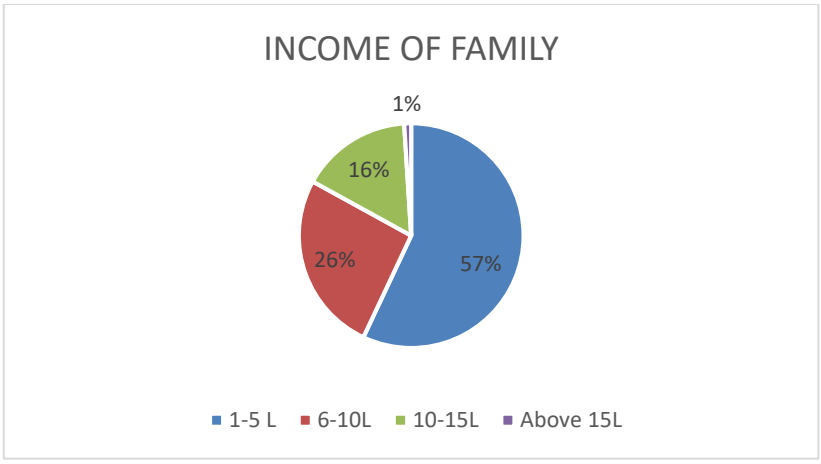

Figure 3: Pie chart showing the distribution of staff nurses according to their family income

The percentage distribution of staff nurses according to their family income indicates that 57% of them earn between 1-5L, 26% of them earn 6-10L, 16% of them earn 10-15L and only 1% earn more than 15L.

A) PERCENTAGE DISTRIBUTION OF STAFF NURSES ACCORDING TO THEIR QUALIFICATION

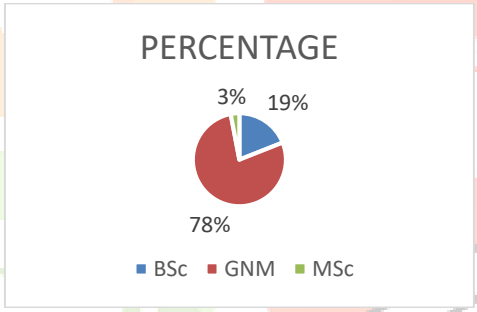

Figure 4: Pie chart showing distribution of staff nurses according to their qualification

The percentage distribution of staff nurses according to their qualification indicates that 78% of them are GNM course holders, 19% of them are B.Sc Nursing course holders while 3% of staff nurses are M.Sc Nursing course holders.

B) PERCENTAGE DISTRIBUTION OF STAFF NURSES ACCORDING TO THEIR YEARS OF EXPERIENCE

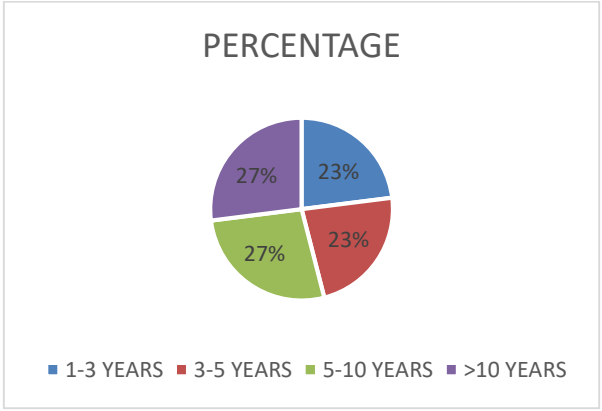

Figure 5: Pie chart showing the distribution of staff nurses according to their years of experience

The percentage distribution of staff nurses according to their years of experience indicates that 27% of them have an experience of 3-5 years, 23% of them have an experience of 5-10 years

C) PERCENTAGE DISTRIBUTION OF STAFF NURSES ACCORDING TO SOURCE OF INFORMATION

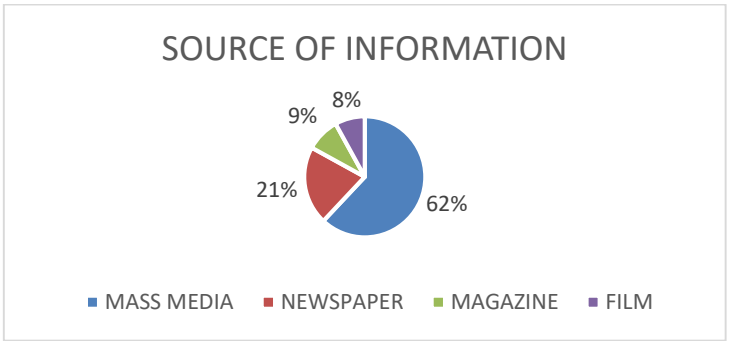

Figure 6: pie chart showing the distribution of staff nurses according to their source of information

The percentage distribution of staff nurses according to their source of information indicates that 62 % of them are using mass media, 21 % using newspaper, 9% using magazines and 8% are using films as their source of information.

D) PERCENTAGE DISTRIBUTION OF STAFF NURSES ACCORDING TO SOURCE OF RECREATION

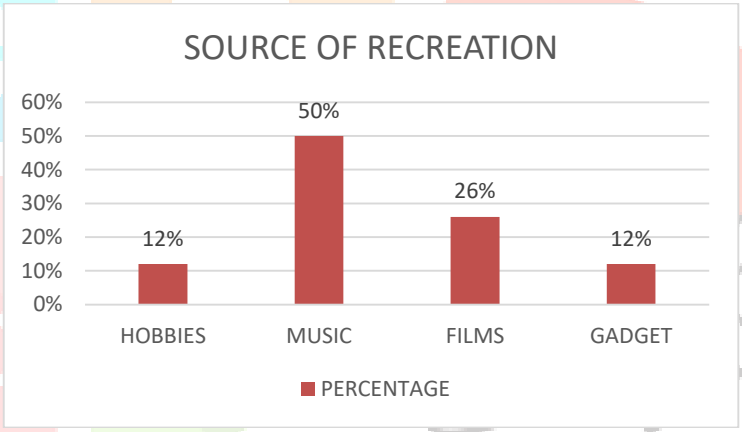

Figure 7: Bar diagram showing the distribution of staff nurses according to the source of recreation

Percentage distribution of staff nurses according to their source of recreation indicates that 50% of the staff nurse are using music , 26% using films, and 12% use gadgets and hobbies as their source of recreation.

E) PERECNTAGE DISTRIBUTION OF STAFF NURSES ACCORDING TO CLINICAL HOURS

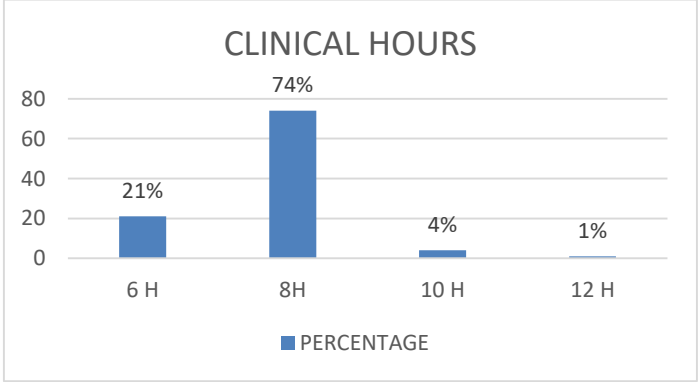

Figure 8: Bar graph showing the Percentage distribution according to their clinical hours

The percentage distribution of staff nurses according to their clinical hours indicates that 74% are having 8 hours in clinical area, 21 % are having 6 hours, 4% are having 10 hours and 1 % are having 12 hours of clinical hours.

F) PERCENTGAE DISTRIBUTION OF STAFF NURSES ACCORDING TO SLEEP

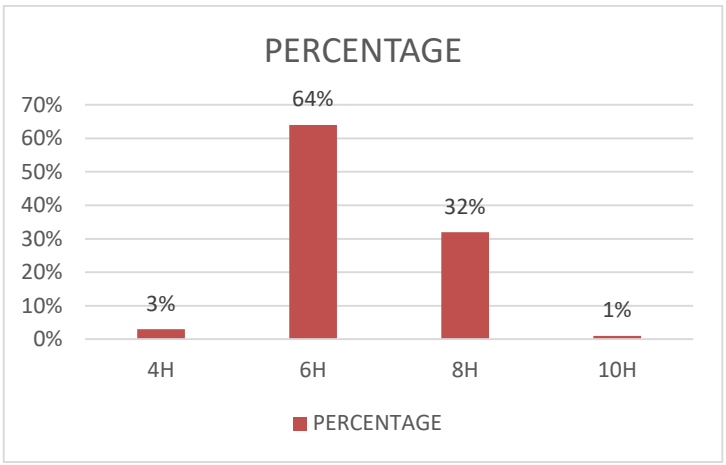

Figure 9: Bar graph showing the percentage distribution of staff nurses according to their sleep hours

Percentage distribution of staff nurses according to their sleeping hours indicates that 64% of them sleep for 6 hours, 32% sleep for 8 hours, 3 % for 4 hours and 1 % for 10 hours.

PART B: ASSESSMENT OF LEVEL OF KNOWLEDGE OF STAFF NURSES REGARDING RESTLESS LEG SYNDROME

This part deals with the distribution of pretest level of knowledge of Staff nurses on restless leg syndrome.

KNOWLEDGE ASSESSMENT SHEET (PRE-TEST)

Table 2: Frequency and percentage distribution of pretest level of knowledge of staff nurses (N-100)

VARIABLES	FREQUENCY	PERCENTAGE	CUMULATIVE FREQUENCY	CUMULATIVE PERCENTAGE
14-20	6	6%	6	6%
7-13	77	77%	83	83%
0-6	17	17%	100	100%

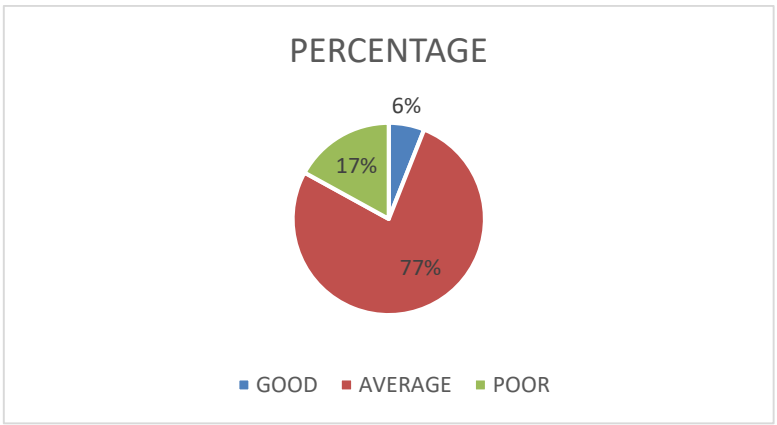

Figure 10: Pie chart showing frequency and percentage distribution of pre-test level of knowledge of staff nurses

Data in table 2 and figure 10 shows that 77% of staff nurses have inadequate knowledge, 17% of staff nurses have moderate knowledge and only 6% of staff nurses have adequate knowledge.

KNOWLEDGE ASSESSMENT SHEET (POST TEST)

Table 3: frequency and percentage distribution of post-test level of knowledge of staff nurses

N = 100

VARIABLES	FREQUENCY	PERCENTAGE	CUMULATIVE FREQUENCY	CUMULATIVE PERCENTAGE
14-20	97	97%	97	97%
7-13	3	3%	100	100%
0-6	0	0%	100	100%

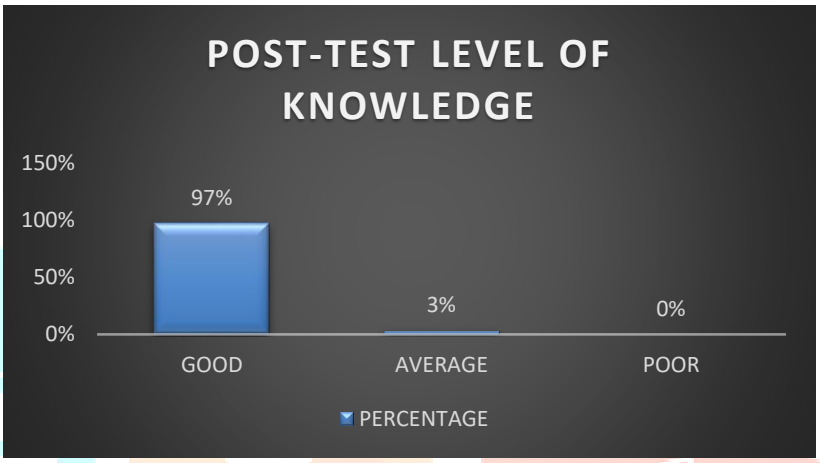

Figure 11: Bar diagram showing the frequency and distribution of post-test level of knowledge of staff nurses

The data in table 3 and figure 11 indicate that after the structured teaching program, majority of staff nurses 97% have adequate knowledge, 3% have moderate knowledge and 0% percentage have inadequate knowledge regarding restless leg syndrome.

PART C: EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING RESTLESS LEG SYNDROME

Table 4: Pre-Test and Post-Test knowledge of staff nurses regarding restless leg syndrome

KNOWLEDGE SCORE	SCORE	PRETEST		POST-TEST	
		F	%	F	%
GOOD	14-20	8	8%	97	97%
AVERAGE	7-13	75	75%	3	3%
POOR	0-6	17	17%	0	0%
TOTAL		100	100%	100	100%

The data in table 4 shows that mean post-test knowledge score (16.4± 1.62) is higher than the mean pre-test knowledge score (9.32± 2.70) with a man difference of 7.08 similarly the median value of post-test (16) is higher than that of the pre-test (9). This clearly signifies that the structured teaching program was effective in improving the knowledge of staff nurses regarding restless leg syndrome.

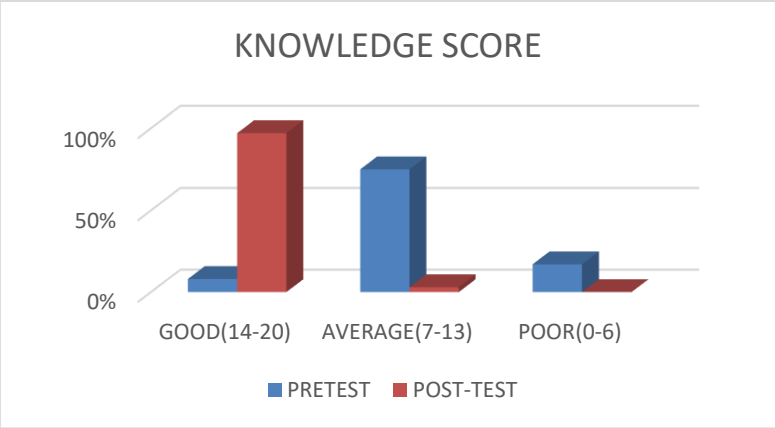

Figure 12: Bar diagram showing comparison of pretest and post-test knowledge level of staff nurses on Restless Leg Syndrome

The data in table 4 and figure 12 reveal an increase in knowledge levels after the structured teaching program. In the pretest, 17% of participants had poor knowledge, 77% participants had average knowledge and only 6% of participants had good knowledge. In contrast proportion of students with poor knowledge reduced to 0% while those with average knowledge decreased to 3% and those with good knowledge increased to 97%. This indicates the marked improvement in the knowledge following structured teaching program.

To compare the pretest and post-test knowledge scores statistically, a paired t-test was applied.

- Null Hypothesis(H0): There is no significant relationship between the mean pretest and post-test knowledge scores of staff nurses regarding Restless Leg Syndrome
- Alternative Hypothesis(H0): The mean post -test knowledge score is significantly higher than the mean pretest knowledge score of staff nurses regarding restless leg syndrome

Table 5: Mean, Standard deviation, Mean difference and 't' value of pre-test and post-test knowledge score

	MAXIMUM SCORE	MEAN	SD	MEAN DIFFERENCE	T VALUE
PRE-TEST	20	9.32	2.70	7.08	0.673
POST-TEST	20	16.40	1.60	7.08	0.673

Significance of 0.05 level of significance

The data in table 5 show that mean post-test knowledge score (16.40 ± 1.60) is higher than the mean pre-test knowledge score 9.32± 2.70 with a mean difference of 7.08. Pre-test and Post-test knowledge score were compared using the paired 't 'test. The calculated 't' value (0.673) is greater than the table value at the 0.05 level of significance. Hence the research hypothesis is accepted and the null hypothesis is rejected.

PART D: ASSOCIATION BETWEEN THE PRE-TEST KNOWLEDGE AND SELECTED DEMOGRAPHIC CHARACTERISTIC

H02: there is no significant association between the practice scores of staff nurses on RLS and selected demographic variables at the 0.05 level of significance.

Table 6: Association between pretest and selected demographic variables

SL NO	DEMOGRAPHIC VARIABLES	df	X2	TABLE VALUE	P VALUE	INFERENCE
1	Age	6	9.576	12.59	0.05	NS
2	Gender	2	3.882	5.99	0.05	NS
3	Type of family	4	11.608	9.49	0.05	NS
4	Income of family	6	3.944	12.59	0.05	NS
5	Qualification	4	5.431	9.49	0.05	NS
6	Years of experience	6	9.049	12.59	0.05	NS
7	Source of information	6	4.128	12.59	0.05	NS
8	Source of recreation	6	22.049	12.59	0.05	NS
9	Clinical area	6	24.389	12.59	0.05	NS
10	sleep	6	9.049	12.59	0.05	NS

Table 6 depicts that there is no significant association between pretest knowledge score with selected demographic variables. So, the null hypothesis is accepted.

IV. DISCUSSION:

The study aimed to determine the level of knowledge of staff nurses regarding RLS. The Pre-test findings of the study revealed that majority of the staff nurses had only a average level of knowledge regarding restless leg syndrome specifically 97% of staff nurses had good knowledge,3% of staff nurses had average knowledge,0% of staff nurses had poor knowledge.

The Post-test findings revealed an increase in knowledge levels after the structured teaching program. In the pretest, 17% of participants had poor knowledge, 77% participants had average knowledge and only 6% of participants had good knowledge. In contrast proportion of students with poor knowledge reduced to 0% while those with average knowledge decreased to 3% and those with good knowledge increased to 97%. This indicated that the marked improvement in the knowledge following structured teaching program.

This indicates effectiveness of structured teaching program. The staff nurses and shift workers who are having prolonged working hours, irregular shifts and physical fatigue. So, educating the staff nurses to use better ergonomics and reducing the workload is effective in reducing the symptoms of RLS.

A research review included a sewch for English language literature from 1966 to Dec 2017 in Mod line, pub med and ovid databases 16 objective of the review is to review the litecture on drug-induced restless RLS All case reports, case series, and review articles of DI-RLS were identified and analyzed. There were only a small number of controlled clinical trials, and most data were from case reports and case series. The prevalence of RLS is variable and ranges from 3% to 19% in the general population. There are many predisposing factors to RLS, but an emerging body of evidence suggests that there is an association between numerous drugs and RLS. The result of this study is to: Several drug and drug classes have been implicated in DI-RLS with antidepressant, antipsychotics and antiepileptics having the most evident.

A cross-sectional study was conducted by Syed Farms UI Hassan Shah Gillani from November 29, 2018 to February 28, 2021 at the Departments of Neurology and Orthopaedic, King Edward Medical University and Mayo Hospital, Lahore, Pakistan. The samples were comprised patients of either gender aged 18-80 years having spinal cord injuries. All the patients were interviewed using 1 to 10 questionnaires. The objectives is to determine the prevalence of RLS in patients with spinal cord injury using a consensus criterion. The result of the study of the 253 patients, 128(50.6%) were males and 125(49.4%) were females. The overall mean age was 38.6±14.2 years. RLS was present in 116(45.8%) patients, and 64(55.2%) of them were males ($p>0.05$). The mean duration of the symptoms was 18.9±16.9 months. Causes of spinal cord injury included metastasis 28(11.1%) multiple sclerosis 32(12.6%), neuromyelitis optical spectrum disorders 68 (26.9%), tuberculous spondylitis 85 (33.6%), trauma 24 (9.5%) and viral myelitis 16 (6.3%).

An observational study, conducted by Claudia Trenkwalder among adults with moderate-to-severe RLS and augmentation were switched to rotigotine per the physician's independent decision. The Objective of this

study is to assess the effect of switching to rotigotine transdermal patch on severity of restless legs syndrome (RLS) in patients who experienced acute augmentation with previous oral dopaminergics. Results: A total of 99 patients received rotigotine, of whom 46 completed observational period, and 43 were assessed for effectiveness. A total of 5 patients switched to rotigotine after a >1-day drug holiday, 23 switched overnight, 9 had an overlapping switch, and 6 received ongoing oral dopaminergics with rotigotine for ≥28 days. Of the 99 patients, 57 took concomitant RLS medications (excluding switching medications) on at least 1 day. At the final visit, median change in CGI-1 (Hodges-Lehman estimate [95% CI]) was -2.0 (-2.5, -1.50); 37 of the 43 patients improved by ≥1 CGI-1 category, and 16 of 43 were responders (≥50% improvement). RLS-6 and IRLS scores also improved. Patients had median ASRS of 0 at the final visit indicating "no worsening/occurrence of augmentation." ASRS item 1 showed a shift in mean time of symptom onset (24-h clock) from 12:38 (baseline) to 18:25 (final visit). Most common reasons for withdrawal of rotigotine were adverse events (26 patients) and lack of efficacy (14 patients).

A study coir carried out though Meta-analysis & obtained data were analyzed in STAT. The objective of study was to estimate Prevalence of restless leg syndrome in patients undergoing hemodialysis. The Twenty-six relevant articles published between 2000 and 2015 indexed in Iranian (Magi ran and IranMedex) and international databases (SID, Google Scholar, ScienceDirect, PubMed, Pre Quest, and Scopus) were selected. Data analysis was carried out through meta-analysis (random effect model) and heterogeneity of the studies was determined using 12 index. The obtained data were analyzed in STAT (11.2). The analysis of this study is the Prevalence, according to the found were coal 50% in liana & 30% in international databases. There was an ascending Prevalence trend of the syndrome., while the trend based on age of the patients was descending.

V. REFERENCES

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