



EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON PREVENTION OF DERMATITIS AMONG PEOPLE RESIDING IN SELECTED INDUSTRIAL AREA AT BHOPAL (M.P)

Mithun Kumar Kurmi¹

¹Nursing Tutor, Community Health Nursing Department, Govt. Nursing College SSMC, Rewa (M.P)

ABSTRACT

The study aimed to evaluate the effectiveness of a planned teaching program on dermatitis prevention among residents of a selected industrial area in Bhopal, Madhya Pradesh. The research employed a pre-experimental approach, specifically a one-group pre-test post-test design, to assess knowledge levels before and after the intervention. The study's objectives included determining pre-existing knowledge, assessing the program's effectiveness, and exploring associations between knowledge and demographic variables. Data were collected from 30 participants residing in the industrial area, and analysis involved descriptive and inferential statistics. Findings revealed a moderate baseline knowledge level, with significant improvements observed post-intervention across all areas of dermatitis prevention. The teaching program demonstrated substantial effectiveness, as evidenced by the significant increase in post-test scores. Moreover, associations between pre-test knowledge and certain demographic variables were established, highlighting significant correlations in some cases. The study underscores the importance of targeted educational initiatives in enhancing dermatitis prevention awareness and provides valuable insights for future research and intervention refinement.

KEYWORDS: Planned Teaching Programme, Dermatitis Prevention, Knowledge Scores, Structured Questionnaire, Research Methodology, Research Design, Pre-Experimental Approach

INTRODUCTION

Dermatitis, a prevalent skin condition, poses significant challenges to individuals residing in industrial areas due to heightened exposure to various occupational hazards. Recognizing the imperative to mitigate this issue, a planned teaching program emerges as a promising avenue for equipping residents with knowledge and skills essential for preventing dermatitis effectively. This study delves into assessing the effectiveness of such a program among the populace inhabiting selected industrial areas in Bhopal, Madhya Pradesh. By examining the impact of targeted education and preventive measures, this research aims to contribute to the advancement of public health initiatives tailored to address the specific needs of communities exposed to industrial environments. The overall aim of the study was to test the effectiveness of planned teaching programme on prevention of dermatitis among the people residing in the selected industrial area by comparing their pre – test and post – test knowledge scores.

OBJECTIVES

The objectives included in obtaining answers to the research questions or testing the research hypothesis were as follows:

1. to determine the pre-existing knowledge about prevention of dermatitis among people as measured by structured knowledge questionnaire.
2. to find the effectiveness of planned teaching programme on prevention of dermatitis among people as measured by the structured knowledge questionnaire.
3. to find the association between knowledge and selected demographic variables on prevention of dermatitis.

ASSUMPTIONS

The researcher assumes that,

1. Planned teaching programme will enhance the knowledge on prevention of dermatitis of people.
2. The knowledge will vary according to demographic variable.
3. Knowledge on prevention of dermatitis can be measured objectively.

DELIMITATIONS

- People who are residing in the selected industrial area at Bhopal.
- People above the age of 18 years.
- Thirty people who fulfill the inclusion criteria.

HYPOTHESIS

Hypotheses will be tested at 0.05 level of statistical significance:

H₁: The mean post-test knowledge score would be significantly higher than pre-test score.

H₂: There will be significant association between knowledge score and selected demographic variables

The review of literature in this study has been presented in the following headings:

1. Concept and cause of dermatitis.
2. Clinical features and treatment of dermatitis
3. Prevention of dermatitis.



METHODOLOGY

Methodology may be a description of process, or may be expanded to include a philosophically coherent collection of concepts or ideas as they relate to a particular discipline or field of inquiry. The methodology of research indicates the general pattern to gather valid and reliable data for the problem under investigation.

This chapter describes the methodology adopted for evaluating effectiveness of planned teaching programme on prevention of dermatitis among people residing in selected industrial area. The methodology includes the research design, setting of the study, population, sample and sample size, sampling technique, description of the tool, method of data collection and plan for data analysis.

RESEARCH APPROACH

Research approach is a systematic, controlled, empirical and critical investigation of natural phenomena guided by theory and hypotheses about the presumed relations among such phenomena.

In view of the nature of the problem under study and to accomplish the objectives of the study evaluative approach was found to be appropriate to describe the effectiveness of planned teaching programme on prevention of dermatitis among people residing in selected industrial area.

Pre- experimental approach is an applied form of research that involve finding out how well a programme, procedure or policy is working and its goal is to assess or evaluate the success of a programme.

The traditional strategy for conducting an evaluative research consists of the following steps:

- 1 Determining the objectives of the programme.
- 2 Developing a means of measuring the attainment of those objectives.
- 3 Collecting the data.
- 4 Interpreting the data in terms of the objectives.

RESEARCH DESIGN

Research design is the researcher’s overall plan for obtaining answers to the research questions or for testing the research hypothesis. It is the overall plan for addressing a research question including specialization for enhancing the integrity of the study.

Pre-experimental, i.e., one group pre-test post-test design was adopted for the study. Here only one group was observed twice, before and after introducing the independent variable. The effect of treatment would be equal to the level of the phenomenon after the treatment minus the level of phenomenon before treatment.

This can be represented as:

Table 1: Representation of Research Design

Group	Pre-test Knowledge	Treatment (PLANNED TEACHING PROGRAMME)	Post-test knowledge	Effectiveness
Thirty people were selected	O_1	X	O_2	$O_2 - O_1$

O_1 : Knowledge test before the intervention of planned teaching programme the group on prevention of dermatitis

O_2 : Knowledge test after the intervention of planned teaching programme of the group on prevention of dermatitis

X : Teaching strategy on prevention of dermatitis

In this study, the independent variable is the planned teaching program on the prevention of dermatitis. The independent variable stands alone and does not rely on any other factor. Its effect is examined in relation to the dependent variable, which in this case is the knowledge on the prevention of dermatitis. The dependent variable is the outcome or effect of the action of the independent variable and cannot exist independently. It is influenced by the planned teaching program, and its change is observed and measured throughout the study. Additionally, demographic variables such as age, sex, occupation, monthly income, type of family, family history, and previous information on dermatitis are considered. These demographic variables provide context and background information about the participants and may influence their response to the teaching program.

The population under study consists of individuals residing in the selected industrial area at Mandedeep, Bhopal. Population

refers to all possible elements that could be included in research, representing the entire group under study. The sample for this study comprises 30 individuals selected using purposive sampling from the selected industrial area. Purposive sampling was deemed appropriate for this study to ensure that participants met specific criteria relevant to the research objectives. Inclusion criteria for the sample include willingness to participate, availability during data collection, and proficiency in reading and writing Hindi and English, while exclusion criteria involve individuals working in the health profession or suffering from mental illness. The development of the research tool involved several steps, including a review of literature, expert consultations, blueprint preparation, construction of a knowledge checklist, content validity assessment, pre-testing, and reliability testing, ensuring the tool's validity and reliability for data collection.

The preparation of the blueprint for the knowledge questionnaire involved structuring all 32 items based on the participants' knowledge levels. The blueprint encompassed items categorized into three domains of learning: knowledge, comprehension, and application. Within these domains, the distribution was as follows: 21 items (65.63%) focused on knowledge, 4 items (12.5%) on comprehension, and 7 items



(21.87%) on application. This comprehensive blueprint ensured that the questionnaire adequately assessed participants' understanding and application of dermatitis prevention concepts.

The structured knowledge questionnaire was designed to collect pertinent information regarding participants' knowledge of dermatitis prevention and evaluate the effectiveness of the planned teaching program. Divided into two parts, Part I gathered demographic information with eight items, while Part II comprised three sections focusing on different aspects of dermatitis prevention. Section A covered concepts and causes, Section B addressed clinical features and treatment, and Section C explored prevention strategies. Participants were instructed to select the most appropriate answer for each item, with scores ranging from one for correct responses to zero for incorrect ones, resulting in a total possible score of 32. To ensure the validity of the tool, content validity was assessed through expert consultation, incorporating feedback to refine and modify the questionnaire accordingly.

Ethical clearance was obtained from relevant authorities prior to data collection, ensuring compliance with ethical standards. Informed consent was obtained from participants, who were assured of the anonymity and confidentiality of their responses. The pre-testing of the validated tool involved assessing clarity, feasibility, and completion time, with data collected from ten participants. Subsequently, the tool's reliability was evaluated using the split-half method, yielding a significant correlation coefficient ($r = 0.82$). The development of the planned teaching program followed a systematic process, including literature review, outlining objectives and content, determining instructional methods and audiovisual aids, editing, and evaluation. Expert consultation and content validation ensured the effectiveness and relevance of the teaching plan, which was further assessed through checklist evaluation. This meticulous approach to tool development and teaching program design enhances the validity, reliability, and efficacy of the study's methodology and interventions.

PILOT STUDY

The pilot study served as a crucial step in refining the methodology of the proposed study, assessing its feasibility, and finalizing the plan for analysis. Conducted in BHEL Bhopal on 13.05.2018, the pilot study utilized ten subjects selected through purposive sampling, mirroring the characteristics of the final study sample. Data collection involved administering a structured knowledge questionnaire on prevention of dermatitis, followed by a planned teaching program on the same topic. A post-test was conducted six days later on 19.05.2018, using the same questionnaire to evaluate knowledge gain. Analysis of the collected data utilized descriptive and inferential statistics, including a paired t-test to determine the significance of differences between pre-test and post-test scores. The pilot study confirmed the feasibility of the study, cooperation of subjects, relevance of the questionnaire, and adherence to time and cost constraints.

The effectiveness of the planned teaching program was evaluated using the same structured knowledge questionnaire,

measuring knowledge gain among participants. Data collection procedures ensured ethical standards were met, with informed consent obtained and anonymity and confidentiality assured. The researcher collected data from the sample, conducting pre-tests on 10.06.2018 followed by the planned teaching program, utilizing lecture-cum-discussion methods and AV aids. A post-test was conducted six days later on 25.06.2018 using the same questionnaire. Descriptive statistics were employed to summarize demographic variables, while inferential statistics, including paired t-tests, were used to analyze the effectiveness of the teaching program. Data analysis involved organizing data in a master sheet, calculating frequency and percentage, determining mean knowledge scores, and assessing statistical significance. The chapter underscores the importance of the pre-experimental approach, pilot study, and meticulous data analysis in ensuring the validity and reliability of the study's findings.

RESULTS

The results section serves as the cornerstone of a research project, providing a comprehensive analysis and interpretation of the collected data. It is through this phase that researchers reduce, summarize, organize, evaluate, interpret, and communicate numerical information obtained from their study. Analysis involves computation of measures and identification of patterns and relationships within the data, essential for achieving the research objectives and drawing meaningful conclusions. In this study, the data collected from 30 samples are processed and analyzed in an orderly coherent fashion to discern patterns and relationships, aligning with the study's objectives.

The main objectives of the study include assessing pre-existing knowledge about prevention of dermatitis among parents, evaluating the effectiveness of a planned teaching program on dermatitis prevention, and exploring associations between knowledge and selected demographic variables. Hypotheses are formulated to test specific assumptions, such as the expectation of a significantly higher mean post-test knowledge score compared to pre-test scores and the presence of significant associations between knowledge scores and demographic variables. The organization of findings is structured into sections detailing demographic characteristics of the sample, levels of knowledge regarding dermatitis prevention, effectiveness of the teaching program, and associations between knowledge scores and demographic variables.

Under each section, data analysis results are presented using various methods, including frequency and percentage distributions, mean standard deviations, cumulative frequency distributions, and area-wise comparisons of pre-test and post-test knowledge scores. This structured approach enables a comprehensive understanding of the research findings, facilitating meaningful interpretation and discussion. Overall, the results chapter provides insights into the effectiveness of the planned teaching program and sheds light on the relationship between knowledge levels and demographic variables in the context of dermatitis prevention among the study population.



Table 2: Frequency and percentage distribution of sample according to level of knowledge

Level of knowledge	Range	Pretest		Post test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
poor	0-8	-	-	-	-
average	9-16	24	80	-	-
Good	17-26	6	20	-	-
Excellent	27-32	-	-	30	100
Total		30	100	30	100

The above table 2 shows that prior to the administration of educational package .In the pre test; Majority (80%) had average level of knowledge. In the post test 100% of them had

adequate level of knowledge. In the pretest 20% of them had good level of knowledge. In the pretest none had adequate knowledge whereas in the post test 100% of them had adequate knowledge.

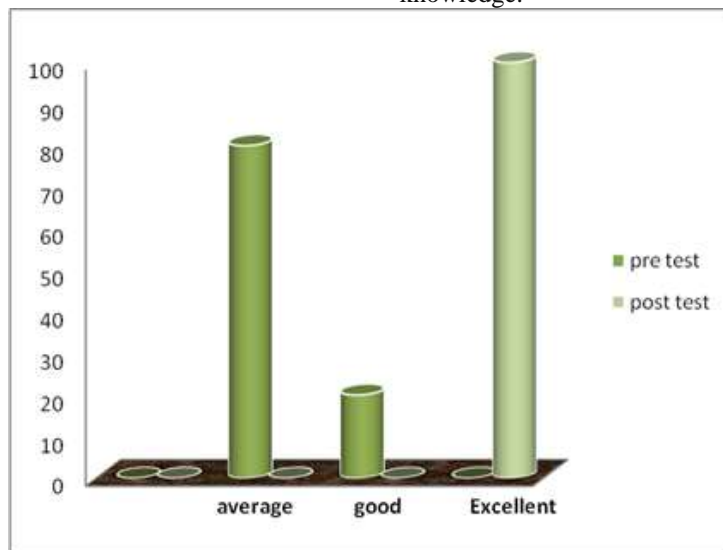


Figure 1: Percentage distribution of sample according to level of knowledge

Table: 3 Range of scores, mean, median and standard deviation of pre-test and post test knowledge level of people.

	Range of score	Mean	Median	SD
Pretest	11-23	14.93	15	2.72
post test	25-32	29.23	29	1.49

The data presented in the table:3 shows that post test knowledge score was in the range of 25-32 which was higher than pre test range 11-23 . The data also reveals that post test

knowledge score mean (29.23) is significantly higher than mean pre test knowledge score (14.93)

Table: 4 Frequency and cumulative frequency distribution of pre-test and post-test knowledge score of the people.

Range	Pre-test		Post test	
	f	Cf	f	Cf
5 -9	-	-	-	-
10 -14	14	14	-	-
15 -19	14	28	-	-
20 -24	02	30	-	-
25 -29	-	-	20	20
30 -34	-	-	10	30

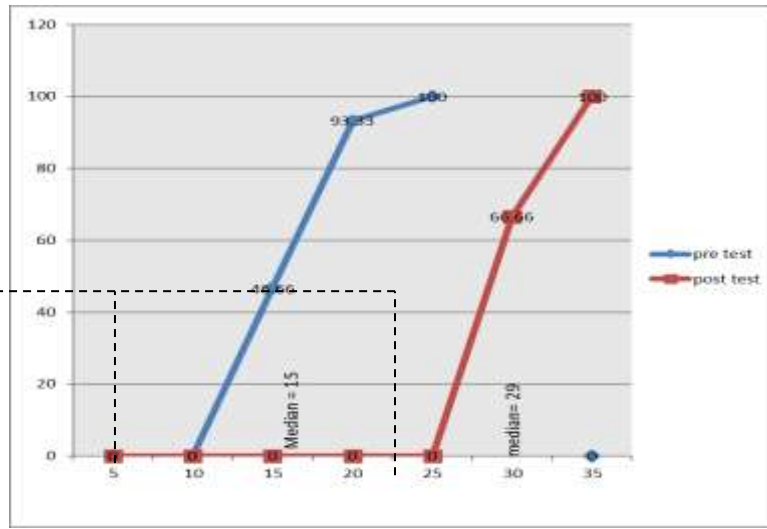


Figure: 2 Ogive representing pre and post test knowledge scores people regarding prevention of dermatitis.

The above figure 2 shows that Post test scores Ogive lies right to the pre test scores Ogive over the entire range shows that post test scores are more than pre test scores therefore planned

teaching is effective. In the 50th percentile pre test score is 15 and post test score is 29.

Table: 5 Area wise mean, standard deviation of pre-test and post –test knowledge scores

Area	Maximum Score	Pre-Test		Post-Test		Mean Difference
		Mean	SD	Mean	SD	
Concept and cause	11	4.8	1.46	9.93	0.67	5.13
Clinical features and treatment	14	6.63	1.44	12.86	0.95	6.23
Prevention	7	3.53	1.38	6.43	0.55	2.9

The data in the table shows that mean score obtained by sample in different areas before and after the administration of educational package. It shows the difference between pretest means and post test means in different areas in the area of

concept and cause 5.13, clinical features and treatment 6.23 and prevention 2.9.

Table: 6 Area –wise mean percentage and mean gain of pre-test and post-test knowledge score.

Areas of knowledge	Mean % knowledge score		Mean actual gain	%of modified gain score
	Pre-test	Post-test		
Concept and cause	43.63	90.27	46.64	82.73
Clinical features and treatment	60.27	91.85	31.58	79.86
Prevention	50.42	91.85	41.43	83.56

The data presented in the table shows that the percentage of modified gain score was maximum (83.56) in the area of definition least (-100).

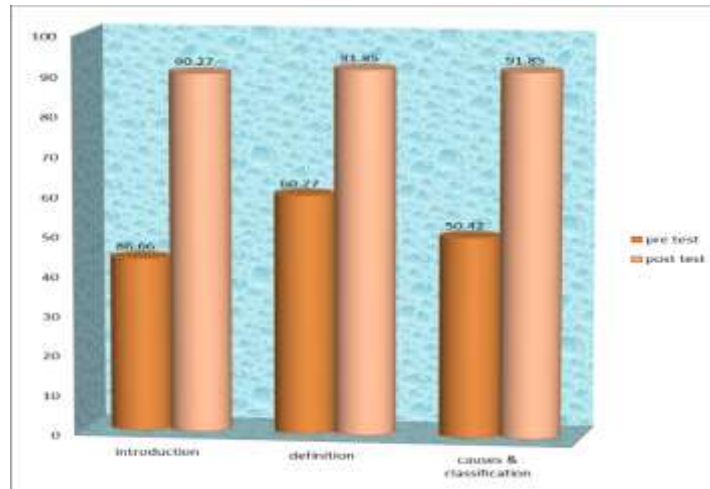


Figure 3: Bar figure showing the pre-test and post-test knowledge score.

Section C: Effectiveness of planned teaching programme on prevention of dermatitis

Comparison of over-all pretest and post test knowledge scores of participants

To find out the significant differences between the mean pre test and post test knowledge score, paired “t” test was used. In order to test the statistical significance between the pre test and

post test knowledge score, the following null hypothesis was formulated.

H₂: The mean post test knowledge scores of people regarding the prevention of dermatitis will not be significantly higher than mean pre-test knowledge score at 0.05 level.

Table 7 Mean, Mean difference, SD & t value of pre test post test knowledge score.

Parameters	Mean	SD	Mean difference	t value
pre test	14.93	2.72	14.3	24.15
Post test	29.23	1.49		

T₄₉ = 2.045, P < 0.05

The data presented in the table shows that the mean post test knowledge score (29.23) was higher than the mean pre test knowledge score (14.93). The calculated t value (24.15), p 0.005 was greater than the table value (T₉ = 2.262) at 0.005 level

of significance. Hence it can be inferred that the planned teaching programme was effective in increasing the knowledge of people regarding prevention of dermatitis **H₁ is accepted.**

Table 8: Comparison of area wise mean pretest and post test knowledge score:

Area	Pre-test		Post-test		Mean difference	‘t’ value
	mean	SD	mean	SD		
Concept and cause	2.62	0.62	2.9	0.36	0.28	3.73
Clinical features and treatment	0.64	0.48	0.78	0.41	0.14	1.87
Prevention	5.06	2.83	7.18	2.40	2.12	6.69

T₄₉ = 2.045, P < 0.05

Section D: Association between pre test knowledge scores and selected demographic variables.

The section deals with the findings related to the association between pre test knowledge score and selected demographic variables. The Fisher exact probability test was used to determine the association between the pre test knowledge score and related demographic variables. The following null hypothesis was formulated.

H₂: There will be **No significant** association between the pre test level of knowledge regarding prevention of dermatitis and selected demographic variables at 0.05 level of significance.



Table 9: The association between pre test knowledge score & selected demographic variables.

Sl no	Variables	F value	Inference
1	Age	0.04	significant
2	Gender	0.18	Not significant
3	occupation	0.035	significant
4	Income	0.14	Not significant
5	Type of family	0.08	Not significant
6	Family history of Skin allergy	0.30	Not significant

P=0.05

The above table 8 shows that there is no significant association between the selected demographic variables and pre test knowledge scores. Therefore **H2 is Rejected**.

DISCUSSION

The discussion section delves into the findings of the study, starting with an overview of dermatitis as a chronic, inflammatory skin condition influenced by genetic, environmental, and immune factors. Emphasizing the pivotal role of nurses in raising awareness to prevent dermatitis, the study evaluates the effectiveness of a planned teaching program among individuals in an industrial area in Bhopal. Employing a one-group pre-test post-test design, data were collected from 30 respondents before and after the teaching program's administration. The discussion is structured around four key areas: demographic characteristics, pre-existing knowledge of dermatitis prevention, effectiveness of the teaching program, and associations between knowledge and demographic variables.

The demographic analysis reveals notable trends, such as a higher prevalence of males and individuals aged 18-30 years in the sample. Comparisons with similar studies conducted in Iran and Iraq provide context to the prevalence and demographic distribution of dermatitis. Regarding pre-existing knowledge, findings indicate a moderate level of awareness among participants, with the highest mean percentage of knowledge scores observed in clinical features and treatment. However, overall knowledge is deemed poor across all areas of dermatitis prevention, highlighting the need for educational interventions.

The effectiveness of the teaching program is evident in the post-test results, with a significant increase in knowledge scores observed across all areas. Quartile distribution analysis further demonstrates substantial knowledge improvement post-intervention. Statistical analysis using paired t-tests confirms the efficacy of the teaching program, supporting the research hypothesis that post-test knowledge scores would be significantly higher than pre-test scores. Furthermore, associations between pre-test knowledge and demographic variables such as age and occupation are established through chi-square and Fisher exact tests, indicating significant correlations in certain cases. Conversely, no significant associations are found with variables like gender, income, type of family, and family history of skin allergy. Overall, the discussion underscores the importance of targeted educational initiatives in enhancing dermatitis prevention awareness and highlights areas for future research and intervention refinement.

SUMMARY & CONCLUSION

The study aimed to assess the effectiveness of a planned teaching program on dermatitis prevention among residents of

a selected industrial area in Bhopal. Employing a one-group pre-test post-test design, data were collected from 30 respondents before and after the intervention. The objectives focused on determining pre-existing knowledge, evaluating the teaching program's effectiveness, and exploring associations between knowledge and demographic variables. Results indicated moderate baseline knowledge, with significant improvements post-intervention across all areas of dermatitis prevention. Notably, the teaching program demonstrated substantial effectiveness in enhancing participants' knowledge levels, as evidenced by the significant increase in post-test scores. Additionally, demographic analyses provided valuable insights into the characteristics of the sample population. Recommendations for future research include conducting similar studies with larger samples, incorporating control groups, and exploring diverse settings. Nursing implications underscore the role of nurses in educating communities on dermatitis prevention, highlighting the need for ongoing research and educational initiatives.

In conclusion, this study contributes to the understanding of dermatitis prevention among industrial area residents, emphasizing the crucial role of nursing interventions in promoting skin health. The findings suggest the effectiveness of planned teaching programs in enhancing knowledge levels and advocate for continued efforts in community education and awareness. Despite limitations such as sample size and lack of follow-up, the study offers valuable insights and sets the stage for further research in this area. Moving forward, ongoing studies and educational initiatives are vital in addressing dermatitis and improving public health outcomes in industrial areas.

BIBLIOGRAPHY

1. Smeltzer Suzanne, Bare Brenda, *Medical Surgical Nursing, 10th edition, Philadelphia: Lippincott publications, 2004.*
2. Lewis Sharon, Margaret McLean Heitkemper, *Medical Surgical Nursing, 7th edition, Philadelphia: Mosby publications, 2005.*
3. Rashmi Sarkar, Amrinder Kanwar, *Department of Dermatology and Venerology, Government Hospital, Chandigarh.*
4. Hendrie L, Driscoll T. "Work-related presentations to general practitioners in Australia." *The Journal of Occupational Health and Safety -Australia and New Zealand* 2003; 19: 133-43.
5. Kuruvilla M, Sridhar KS, Kumar P, Rao G. *Pattern of skin diseases in Bantwal Taluq, Dakshina Kannada. Indian J Dermatol Venereol Leprol [serial online] 2000 [cited 2009 Nov 30];66:247-8.*
6. Raman Sachdev, Murli L. Mathur, K. R. Haldiya, H. N. Saiyed: *Desert Medicine Research Centre, (ICMR), Jodhpur*



- 342005, *National Institute of Occupational Health, (ICMR), Ahmedabad 380016, India
7. Pratik Gahalaut; S Dubey; Maria Kuruwila; *Indian Journal of Dermatology, Venereology & Leprology* Vol: 72, No: 2, March, 1 2006; 129-132.
 8. Kuruwilla M, Sridhar KS, Kumar P, Rao G. Pattern of skin diseases in Bantwal Taluq, Dakshina Kannada. *Indian J Dermatol Venereol Leprol [serial online]* 2000 [cited 2009 Nov 30];66:247-8.
 9. Mygind in Danish. M Flyvholm; A randomised controlled intervention study was conducted on prevention of work related skin problems among gut cleaners in swine slaughterhouses; National Institute of Occupational Health, Copenhagen, Denmark.
 10. "http://www.ncbi.nlm.nih.gov/pubmed
 11. Effectiveness of skin protection creams in the prevention of occupational on dermatitis: results Vienna, Währinger Gürtel 18-20, 1090, Vienna, Austria. robert.winker@meduniwien.ac.at; PMID: 18972125.
 12. E Held, K Mygind, C Wolff, F Gyntelberg, and T Agner Department of Dermatology, Gentofte Hospital, University of Copenhagen, Denmark.
 13. LJ, M. L., & PV, M. S. Effectiveness Of Topical Application Of *Avena Sativa* On Uremic Xerosis, Hyperpigmentation And Pruritus Among Patients With Chronic Kidney Disease. *EPRA International Journal of Multidisciplinary Research (IJMR)*, 10(1), 594-599.
 14. MK Singhi, PR Menghani, LK Gupta, Dilip Kachhawa, Mohit Bansal Department of Dermatology, Venereology and Leprosy, Dr. S. N. Medical College, Jodhpur, Rajasthan, India.
 15. F.H.W. Jungbauer, P. van der Vleuten, J. W. Groothoff, P.J. Coenraads *Contact Dermatitis* 2004;50: 245-251
 16. Polit DF, Hunger BP. *Nursing Research Principles and Methods*. Philadelphia: J. B. Lippincott Co.; 1995.
 17. Polit DF, Hunger BP. *Nursing research principles and methods*. 6th ed. Philadelphia: Lippincott; 1999.
 18. Cooper. *The structure of knowledge synthesis. Knowledge in society*. Vol. 1. 104-26.
 19. Polit DF, Hunger BP. *Nursing Research Principles and Methods*. Philadelphia: J. B. Lippincott Co.; 1995
 20. Jodati AR, Shakurie SK, Nazari M, Raufie MB. Students' attitudes and practices towards drug and alcohol use at Tabriz University of Medical Sciences. *East Mediterr Health J*. 2007;13(4):967-71.
 21. Branum AM, Lukacs SL. Health Statistics Branch, National Center for Health Statistics, Centers for Disease Control and Prevention, Hyattsville, Maryland 20782-2003, USA. 2009 Dec;124(6):1549-55. *Epub* 2009 Nov 16.
 22. *J Allergy Clin Immunol*. 2010 Jan; 125(1):85-97. Sicherer SH, Leung DY. Elliot and Roslyn Jaffe Food Allergy Institute, Division of Allergy and Immunology, Department of Pediatrics, Mount Sinai School of Medicine, New York, NY, USA. scott.sicherer@mssm.edu
 23. Sariachwili M, Droste J, Dom S, Wieringa M, Hagendorens M, Stevens W, van Sprundel M, Desager K, Weyler J. Department of Epidemiology and Community Medicine, University of Antwerp, Antwerp, Belgium.
 24. Ricci G, Bendandi B, Aiazzi R, Patrizi A, Masi M. Department of Pediatrics, University of Bologna, Italy
 25. Lee LA. *Pediatric Allergy and Immunology*, Duke University Medical Center, Box 3559, Durham, NC 27710, USA *Food Chem Toxicol*. 2008 Oct;46 Suppl 10:S6-S11. *Epub* 2008 Jul 30.
 26. Oduoko OM, Onayemi O, Oyedeji GA. Department of Paediatrics & Child Health, Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Nigeria
 27. MK Singhi, PR Menghani, LK Gupta, Dilip Kachhawa, Mohit Bansal Department of Dermatology, Venereology and Leprosy, Dr. S. N. Medical College, Jodhpur, Rajasthan, India.
 28. Aberer W, Gunstone A, Kekki OM, López Estebanz JL, Vertruyen A, Guettner A, Hultsch T. Le Bateau Blanc-Imm. A, Centre Médical, Martigues, Bouches-du-Rhône, France. *Pediatr Dermatol*. 2009 Sep-Oct;26(5):551-8.
 29. Anderson PC, Dinulos JG. Section of Dermatology, Dartmouth-Hitchcock Medical Center, Dartmouth Medical School, Lebanon, New Hampshire 03756, USA
 30. Kameyoshi Y, Tanaka T, Mochizuki M, Koro O, Mihara S, Hiragun T, Tanaka M, Hide M. Department of Dermatology, Gratomic dermatitisuete shool of Biomedical Sciences, Hiroshima Arerugi. 2008 Feb;57(2):130-7.
 31. Lee J, Seto D, Bielory L. University of Medicine and Dentistry of New Jersey-New Jersey Medical School, Newark, NJ 07103-2499, USA. *J Allergy Clin Immunol*. 2008 Jan
 32. Wang JJ, Guo YL, Hwang KC, Hsieh WS, Chuang YL, Lin SJ, Chen PC. Department of Pediatrics, Taipei Hospital, Department of Health, Taipei, Taiwan. *Acta Paediatr Taiwan*. 2006 Sep-Oct; 47(5):238-42.
 33. Sasaki S, Mitsunashi Y, Kondo S. Department of Dermatology, Yamagata University School of Medicine, Japan.
 34. Weston WL. Department of Dermatology, University of Colorado School of Medicine, Denver 80262, USA
 35. Berg A, Krämer U, Link E, Bollrath C, Heinrich J, Brockow I, Koletzko S, Grübl A, Filipiak-Pittroff B, Wichmann HE, Bauer CP, Reinhardt D, Berdel D; GINIplus studygroup. Marien-Hospital Wesel, Department of Pediatrics, Germany. *Clin Exp Allergy*. 2010 Apr;40(4):627-36. *Epub* 2010 Jan 14.
 36. K, Black PN, Stanley TV, Mitchell E, Fitzharris P, Tannock GW, Purdie G, Crane J; Probiotic Study Group. Wellington Asthma Research Group, Wellington School of Medicine and Health Sciences, University of Otago, Wellington, New Zealand. *J Allergy Clin Immunol*. 2008 Oct;122(4):788-94. *Epub* 2008 Aug 31
 37. Sigurgeirsson B, Ho V, Ferrándiz C, Andriano K, Grinienko A, Jimenez P; Eczema: Prevention of Progression multi-centre investigator study group. Department of Dermatology, University of Iceland, Reykjavik, Iceland. *J Eur Acad Dermatol Venereol*. 2008 Nov;22(11):1290-301. *Epub* 2008 Jul 24
 38. Schäfer T, Borowski C, Reese I, Werfel T, Gieler U; German Network on Allergy Prevention. Institute of Social Medicine, Lübeck University, Lübeck, Germany. *Minerva Pediatr*. 2008 Jun;60(3):313-25.
 39. Lau S. Children's Hospital Charity Campus Virchow, Augustenburger Platz 1, Berlin, Germany
 40. Schäfer T; Institut für Sozialmedizin, Universitätsklinikum Schleswig-Holstein, Campus Lübeck
 41. Capristo C, Romei I, Boner AL. Department of Pediatrics Second University of Naples, Italy.
 42. Basavanthappa BT. *Nursing research*. 1st ed. New Delhi: Japee Brothers Medical Publishers; 1998.



43. Nieswiadomy R. *Foundations of nursing research. 3rd ed.* Connecticut: Appleton and Lange; 1995.
44. Kumar R. *Research methodology; A step-by-step guide for beginners.* London: Sage Publications; 1999.
45. Kothari CR. *Research methodology, methods and techniques. 2nd edition.* New Delhi: New Age International; 2004.
46. Dane F. *Research methods.* California: Cole Publishing Company; 1993.
47. Gupta BN. *Statistics theory and practice.* Agra: Sahitya Bhavan; 1991.
48. Koul L. *Methodology for educational research.* New Delhi: Vikas Publishing House Pvt. Ltd; 1984.
49. Kerlinger NF. *Foundation of behavioral research. 2nd edition.* New Delhi: Surjeet Publications; 1983.
50. Ramachandran L, Dharmalingam T. *Health education A new approach. 1st ed.* New Delhi. Vikas publication house; 1996
51. Burns N, Grove SK. *Understanding nursing research.* Philadelphia: Saunders; 2003.
52. Koul L. *methodology for educational research.* New Delhi : Vikas Publishing House Pvt. Ltd; 1984