International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

A Study to Assess the Effectiveness of Interventional Package on Itching, Stress and Sleep among Adolescent Girls with Skin Infections in Selected Hospital at Kanniyakumari District

Jeya Sheela J[1], Dr. Santhi Appavu[2], Jeyaslin Anisha J[3]

Nursing Tutor in Medical Surgical Nursing, Christian College of Nursing, Neyyoor, Tamil Nadu, India
The Tamilnadu Dr. MGR Medical University, Chennai
Email: *hemil.sheela[at]gmail.com*

Principal, Christian College of Nursing, Neyyoor, Tamil Nadu, India
The Tamilnadu Dr. MGR Medical University, Chennai
Email: *a_santhi67[at]yahoo.in*

Nursing Tutor in Mental Health Nursing, Christian College of Nursing, Neyyoor, Tamil Nadu, India
The Tamilnadu Dr. MGR Medical University, Chennai
Email: *jeyacilinanisha[at]gmail.com*

Abstract: ***Skin infections are widespread conditions caused by bacteria, viruses, fungi, or parasites, affecting people of all ages. The skin, as the body's first line of defence, is constantly exposed to various pathogens, making it vulnerable to infections, especially when it is damaged or compromised. Maintaining good hygiene is crucial in preventing skin infections, a common yet often overlooked health concern. Skin is the largest organ of the body, acts as a protective barrier against harmful microorganisms. However, without proper hygiene, this barrier can become compromised, making it easier for bacteria, viruses, and fungi to cause infections. Regular cleansing helps remove these impurities, reducing the risk of infections (Mondelez, 2025). Methods: Quasi experimental with non-equivalent control group design was adapted. The study was conducted in Out Patient Department in Charles Peace Memorial Hospital Udayarvilai, Colachel, Kanniyakumari District. The sample consisted of 30 adolescent girls with skin infections. The tool used for the data collection were demographic and clinical variables, Itching related stress scale, modified 5D itch scale and itching related sleep scale. The reliability of the tools was measured by using test-retest method. The data collection period was 6 weeks. The samples were asked to respond to the demographic data and clinical variables. Pre-test was conducted among both experimental and control group. The level of itching, stress and sleep was assessed by using Modified 5D itch scale, Itching related stress scale, Itching related sleep scale. After the pre-test intervention was administered for 4 weeks and post-test was conducted. Results: The data were analysed and interpreted by using descriptive and inferential statistics. In control group, the pre-test means and standard deviation of itching score was 11.67 ± 2.582, and 10.80 (SD = 3.364) in the post-test. The t-value was 1.857 which is not statistically significant (NS) at p< 0.001. In the control group, the pre-test mean stress score and SD was 24.13 ± 4.155, post-test mean and SD was 23.20 ±3.098. The t-value was 0.964 which was not statistically significant (NS) at p< 0.001, In contrast, the experimental group has substantial improvement. The pre-test mean score SD was 13.20 ±1.521, which drastically reduced to a post-test mean and SD of 3.00 ±1.464. The t-value was 18.712, which is highly significant (HS) at p p< 0.001. Conclusion: The findings conclude that the interventional package was effective in reducing the level of itching, stress and improve the sleep pattern among adolescent girls with Skin infections.***

Keywords: Interventional package, itching, sleep, stress

1. Introduction

The skin is the largest organ of the human body, playing a crucial role in protection, regulation and sensation. It forms entire external and covering its surface and serving as a first-order physical barrier against the environment. Healthy skin acts as a barrier against environmental aggressors plays a vital role in immune system. Skin protects the body in many ways. "The skin acts like a barrier to protect the body from invasion by bacteria and other possible environmental hazards that can be dangerous for human health [(1)].

Skin is the part of the body that comes into direct contact with the environment. Proper functioning of the skin is influenced by the supply of blood, oxygen, and water. Exercise has numerous health benefits and promotes health and well-being of the body. It enhances cardiovascular health, reduces the risk of diseases, boosts the immune system, helps to manage stress, and enhances the psychological well-being. It improves overall body function and influences the quality of the skin [(2)].

Skin infections are common issues that can arise from bacteria, viruses, fungi, or parasites, impacting individuals of all ages. Since the skin serves as the body's primary defense, it faces constant exposure to various pathogens, making it susceptible to infections, particularly when it's damaged or compromised. These infections can vary from mild irritations to serious conditions that may need medical intervention. Typical symptoms include redness, itching, rashes, and swelling. Factors such as poor hygiene, weakened immune systems, excessive sweating, or contact with contaminated environments can heighten the risk. Fortunately, with the right care, most skin infections can be effectively managed, minimizing the chances of complications or spreading to other areas of the body [(3).]

Adolescence is often seen as a pivotal time for developing an individual's biological, psychological, and social dimensions, marked by improvements in self-control abilities. Research from the Global Burden of Disease indicates that, skin diseases impact nearly 85% of young adults aged 12-25, regardless of whether they live in urban or rural areas [(4).]

Fungal skin infections are common worldwide in children, adults, and immune compromised individuals. Common fungal skin pathogens include dermatophytes, Candida, and Malassezia. Dermatophytes are a family of filamentous fungi that cause dermatophytosis in 25% of the global population. geophilic. Most fungal skin infections present with dry, red, scaly patches and itchy skin, but the pathology for these symptoms remains incompletely understood. In particular, the cause of itchiness in dermatophytosis is unknown. However, fungal proteins responsible for itchiness were yet to be identified [(5).]

When the researcher had clinical experience in dermatology department, observed many of the patients especially adolescent girls seeking treatment for skin infection. Again, observed the impact of this skin infection made itching, sleeplessness and stress. That made me to study on this problem.

Goals

1) To assess the Pre- test and post test scores of itching, stress and sleep among adolescent girls with Skin infections in both control and experimental group.
2) To find out the effectiveness of interventional package on itching, stress and sleep among adolescent girls with Skin infections in both experimental and control group.
3) To find the association between pretest score of adolescent girls with Skin infections and their selected demographic and clinical variables in both experimental and control group.

Hypotheses:

H_1: There is a significant difference between pre-test and post-test score of itching stress and sleep among adolescents with Skin infections in both control and experimental group.

H_2: There is a significant association between the pre-test score of adolescents with Skin infections and their selected demographic and clinical variables in both experimental and control group.

2. Methods and Materials

The research design adopted was quasi experimental with non-equivalent control group design. The setting was Out Patient Department in Charles Peace Memorial Hospital Udayarvilai, Colachel, kanniyakumari District. population for this study was adolescent girls comes as an Out Patient Department with skin infections. sampling technique adopted for this study was Purposive. The tools were developed by the investigator are Demographic and Clinical Variables, Modified 5D itch scale, Itching related stress scale, Itching related sleep scale. The demographic variables such as Age, Religion, Educational Status, Economic Status of the Family, Place of Residence, Diet, Type of Family, Physical Activity, Sleep Pattern and Hydration Pattern. clinical variables indicate Duration of illness, duration of treatment, family history of skin infections, comorbidities and allergy to food. The reliability of the tool was done by test-re test method and it was administered for 10 samples. The findings (r=0.7) revealed that the tool is reliable and valid. The data collection process done in three steps over six weeks**. STEP I** Written formal permission is obtained from the head of the institution and the informed consent obtained from the subjects. Then the investigator was conducted the pre-test with the help of Modified 5-D Itch Scale, Itching related stress scale and Itching Related Sleep Scale in both control group and experimental group. **STEP II** After the pretest in control group the routine care and in interventional group interventional package was given. **Interventional package** consisted of two components. **Session I (Education)** It was took it for 15 mints. It was given as a group therapy. The investigator educated regarding diet, hydration, life style modification, and hygiene. **Session II (Breathing exercise)** The investigator demonstrated the exercise to manage stress and this exercise administered for the period of 4 weeks, with the duration of 30 minutes per day. It measured by maintaining daily monitoring chart. was administered along with the routine care, according to the availability of the samples. The researcher gathered the sample in the OP Department. The Samples were monitored through the checklist. **STEP III** After 4 weeks of administered intervention the investigator was conducted the post- test with the same questionnaire in both control group and experimental group. Descriptive statistics such as percentage, mean and standard deviation used to assess the pre-test and post-test score of itching, stress and sleep. paired 't' test used to compare the post-test score of itching, stress and sleep among adolescent girls with skin infections in both groups. Inferential statistics Chi square test used to associate the pre-test level of itching, stress and sleep with selected demographic and clinical variables among adolescent girls with skin infections

3. Results and Discussion

The first objective of the study was to assess the Pre- test and post test scores of itching, stress and sleep among adolescent girls with Skin infections in both control and experimental group. In control group 53.3% of samples experienced severe itching, 46.7% had moderate itching. None of the samples reported mild itching in the pre -test, where as 40.0% had severe itching, 40.0% moderate itching. 20.0% of the samples experienced only mild itching. In the experimental group pre-test 66.7% reported severe itching, and 33.3% experienced moderate itching. Notably, none of the samples had mild itching before the intervention, where as in the post-test, 86.7% of samples experienced only mild itching, while the remaining 13.3% had moderate itching. No samples reported severe itching following the intervention.

In pretest the level of stress in control group, the majority of samples (53.3%) experienced high stress, followed by 33.3% who had extremely high stress. Only 13.3% of samples experienced moderate stress, and none reported low stress, and in the post-test, 80.0% had extremely high stress 6.7% had high stress13.3% moderate stress and no samples reported low stress. In the experimental group majority of samples (73.3%) experienced high stress, followed by 20.0%

with moderate stress, and 6.7% with extremely high stress. None of the adolescent girls reported low stress in the pretest, where as in the post-test, there was a notable improvement. A majority of 60.0% of samples reported low stress, and the remaining 40.0% had moderate stress and no samples experienced high or extremely high stress levels**.**

The level of sleep disturbance among samples in the control group majority of samples (53.3%) reported a severe impact on sleep, while 46.7% experienced a moderate impact and no samples reported mild or no impact on sleep at baseline in the pre-test and in the post-test none of the samples reported severe sleep impact, 60.0% experienced a moderate sleep impact, 40.0% had a mild impact on sleep. In the experimental group 60.0% of the samples experienced a moderate impact on sleep, and 40.0% reported a severe impact and none of the adolescent girls had mild or no sleep disturbances at baseline in the pre-test where as in the post-test, 66.7% of samples reported no impact on sleep, while the remaining 33.3% experienced only mild impact. **The second objective of the study was to find out the effectiveness of interventional package on itching, stress and sleep among adolescent girls with Skin infections in both experimental and control group.** In control group, the pre-test mean and standard deviation of itching score was 11.67 ± 2.582, and 10.80 (SD = 3.364) in the post-test. The t-value was 1.857 which is not statistically significant (NS) at p<0.001. In experimental group pre-test mean score and standard deviation was 13.33± 2.440), which significantly dropped to 4.53±1.407 after the intervention. The calculated t-value was 11.434, which was high statistical significance (HS) at p< 0.001.

Comparing pre-test and post-test scores to assess the effectiveness of the intervention. In the control group, the pre-test mean stress score and SD was 24.13 ± 4.155, and post-test mean and SD was 23.20 ±3.098. The t-value was 0.964 which was not statistically significant (NS) at p<0.001. In contrast, the experimental group pre-test mean and SD was 19.87±5.208), which significantly dropped to a post-test mean and SD of 7.20±1.521. The calculated t-value was 10.403 which is highly significant (HS) at p<0.001, Hence the intervention was effective for reducing the stress.

To determine the effectiveness of the interventional package on sleep disturbances. In the control group, the pre-test mean and SD score was 13.13 ±2.066, and 12.27 (SD = 2.251) in the post-test. The t-value was 1.526, with a p-value of 0.149, which is not statistically significant (NS) at p< 0.001, In contrast, the experimental group exhibited a substantial improvement. The pre-test mean score and SD was 13.20 ±1.521, which drastically reduced to a post-test mean and SD of 3.00 ±1.464. The t-value was 18.712, which is highly significant (HS) at p<0.001 Hence the intervention was effective for improving the sleep.

The third objective of the study was to find the association between pretest score of adolescent girls with Skin infections and their selected demographic and clinical variables in both experimental and control group. The findings revealed that, in control group there was no significant association between the level of itching and demographic variables such as Religion, Educational Status, Economic Status of the Family, Place of Residence, Diet, Type of Family, Physical Activity, Sleep Pattern and Hydration Pattern except age and there was no association between the pretest level of itching and the clinical variables. In experimental group there was no significant association between the pretest level of itching and demographic variables except Educational Status and there was no association between the pretest level of itching and the clinical variables except family history of skin disorder.

In control group there was no significant association between the level of stress among demographic variables and the clinical variable. In experimental group there was no significant association between the level of stress and demographic variables except water intake and there was no association between the pretest level of stress and the clinical variables except duration of treatment.

In control group there was no significant association between the level of sleep among demographic variables and the clinical variable. In the experimental group there was no significant association between the level of sleep and demographic variables except physical activity and there was no association between the pretest level of sleep and the clinical variables except duration of treatment.

Table 1: Frequency and percentage wise distribution of demographic variables among adolescent girls with Skin infections in both control group and experimental group.

Demographic Variables	Categories	Control group (n=15)	Experimental group (n=15)	χ^2 Value	df	p-value
Age	11–14 years	4 (26.7%)	3 (20.0%)	1.294	2	0.524 NS
	15–17 years	7 (46.7%)	5 (33.3%)			
	18–21 years	4 (26.7%)	7 (46.7%)			
Educational Status	Grade 11–12	8 (53.3%)	9 (60.0%)	0.136	1	0.713 NS
	College/University	7 (46.7%)	6 (40.0%)			
Income	<10,000	3 (20.0%)	1 (6.7%)	1.333	2	0.513 NS
	10,001–20,000	7 (46.7%)	7 (46.7%)			
	20,001–30,000	5 (33.3%)	7 (46.7%)			
Religion	Hindu	2 (13.3%)	4 (26.7%)	0.833	1	0.361 NS
	Christian	13 (86.7%)	11 (73.3%)			
Place of Residence	Town	7 (46.7%)	7 (46.7%)	0.000	1	1.000
	Village	8 (53.3%)	8 (53.3%)			
Diet	Vegetarian	2 (13.3%)	1 (6.7%)	1.429	2	0.490 NS
	Non-Vegetarian	4 (26.7%)	2 (13.3%)			
	Mixed	9 (60.0%)	12 (80.0%)			

Type of Family	Joint	4 (26.7%)	3 (20.0%)	0.186	1	0.666 NS
	Nuclear	11 (73.3%)	12 (80.0%)			
Physical Activity	Nil	10 (66.7%)	12 (80.0%)	0.682	1	0.409 NS
	Irregular Exercise	5 (33.3%)	3 (20.0%)			
Water Intake per Day	<500 ml	2 (13.3%)	1 (6.7%)	0.696	2	0.706 NS
	500–1000 ml	6 (40.0%)	8 (53.3%)			
	1000–1500 ml	7 (46.7%)	6 (40.0%)			

NS- Non- Significant

Table 2: Frequency and percentage wise distribution of clinical variables among adolescent girls with Skin infections in both control group and experimental group, (N=30 (15+15))

Clinical Variable	Categories	Control group (n=15)	Experimental group (n=15)	χ^2 Value	df	p-value
Duration of Illness	1–2 months	5 (33.3%)	4 (26.7%)	0.561	2	0.755 NS
	3–4 months	7 (46.7%)	9 (60.0%)			
	5–6 months	3 (20.0%)	2 (13.3%)			
Duration of Treatment	1–2 months	6 (40.0%)	5 (33.3%)	1.313	2	0.519 NS
	3–4 months	8 (53.3%)	10 (66.7%)			
	5–6 months	1 (6.7%)	0 (0.0%)			
Family History of Skin Disorder	Yes	3 (20.0%)	2 (13.3%)	0.240	1	0.624 NS
	No	12 (80.0%)	13 (86.7%)			
Co-morbidity	Yes	0 (0. 0%)	0 (0. 0%)	—	—	Constant
	No	15 (100.0%)	15 (100.0%)			
Allergy to Food	Yes	0 (0. 0%)	0 (0. 0%)	—	—	Constant
	No	15 (100.0%)	15 (100.0%)			

NS-Non Significant

Table 3: Mean and standard deviation of pre-test and post-test of the itching, stress and sleep score among adolescent girls with Skin infections in both control and experimental group (N=15+15)

Variable	Group	Test	Mean	SD
Itching	Control Group	Pre-Test	11.67	2.582
		Post-Test	10.80	3.364
	Experimental Group	Pre-Test	13.33	2.440
		Post-Test	4.53	1.407
Stress	Control Group	Pre-Test	24.13	4.155
		Post-Test	23.20	3.098
	Experimental Group	Pre-Test	19.87	5.208
		Post-Test	7.20	1.521
Sleep	Control Group	Pre-Test	13.13	2.066
		Post-Test	12.27	2.251
	Experimental Group	Pre-Test	13.20	1.521
		Post-Test	3.00	1.464

Table 4.5: Effectiveness of interventional package on itching, stress and stress among adolescent girls with Skin in both control group and experimental group (N=30 (15+15))

Variable	Group	Test	Mean	SD	t-value	df	p-value
Itching	Control Group	Pretest	11.67	2.582	1.857	14	0.084 NS
		Post-test	10.80	3.364			
	Experimental Group	Pretest	13.33	2.440	11.434	14	0.001** HS
		Post-test	4.53	1.407			
Stress	Control Group	Pretest	24.13	4.155	0.964	14	0.351 NS
		Post-test	23.20	3.098			
	Experimental Group	Pretest	19.87	5.208	10.403	14	0.001** HS
		Post-test	7.20	1.521			
Sleep	Control Group	Pretest	13.13	2.066	1.526	14	0.149 NS
		Post-test	12.27	2.251			
	Experimental Group	Pretest	13.20	1.521	18.712	14	0.001** HS
		Post-test	3.00	1.464			

***-p < 0.001 highly significant , NS-Non Significant.*

4. Conclusion

It is statistically evidenced that interventional package was effective in reducing the level of itching, stress and improve the sleep pattern among adolescent girls with Skin infections.

It is cost effective complimentary and non-invasive therapy to reduce the level of itching, stress and promote sleep among skin infections.

References

[1] Kong HH. Skin microbiome: role in skin barrier function and disease. Nat Rev Microbiol. 2022;20(2):73–90.
[2] Halbert AR. Physical activity and its impact on skin health and overall wellbeing. J Dermatol Sci. 2020;98(1):12–18.
[3] Ankur P. Skin infections: causes, clinical features and management. Int J Dermatol. 2025;64(1):45–52.
[4] Saheb Y. Global burden of skin diseases in adolescents and young adults. Indian J Dermatol. 2016;61(2):123–129.
[5] Ma L, Li Y, Zhang H, Sun J. Mechanisms of itch in fungal skin infections. Front Cell Infect Microbiol. 2021;11:645–652.
[6] Sharma SK. Nursing research and statistics. 1st ed. New Delhi: Elsevier; 1990.
[7] Annama Jacob, (2015), Clinical Nursing Procedures the Art of Nursing Practice, 3d edition, Jaypee Medical Publishers
[8] Basavanthappa, BT(2007), Nursing Research, New Delhi Jaypee Brotherrs Medical Publishers.
[9] Brunner and Suddarth(2009), Medical Surgical Nursing edition, Wolker's Kluwer publication.
[10] Elakkuvana BR, (2013), Nursing Research and statistics, Bangalore, EMMES Jaypee medical publishers.
[11] Joyce M Black (2005), Textbook of Medical Surgical Nursing, 1ª volume, New Delhi, Elsevier publication.
[12] Lewis, (2013), Textbook of Medical Surgical Nursing, 6th edition, New Delhi, Elsevier publication.
[13] Polit, D. F. (2011). Nursing research: Principles and methods (10th ed.). Wolters Kluwer Health/Lippincott Williams & Wilkins.