

To Assess the Effectiveness of Massage Therapy on Respiratory Status among Toddlers with Lower Respiratory Tract Infection at Selected Hospitals in Rohtak

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Abstract:

Introduction : Globally, Respiratory infection causes morbidity and mortality in young toddlers. Majority of under-five toddlers were affected with 3 to 8 respiratory illnesses a year, globally 3.9 million deaths occur every year.

Methodology : Quantitative research approach. The research design selected for this study was quasi experimental, non equivalent control group pre-test and post-test design. Convenient sampling techniques were use in this study. Setting of the study was Pediatric Hospital. Population was toddlers with lower respiratory tract infection from selected hospitals, at Rohtak. Sample size were 60 toddlers

Results : The estimated unpaired 't' value was (7.65*), which is significant at $p < 0.05$. It shows the significant difference in the post-test level of respiratory parameters among toddlers in study group and control group.

Conclusions : The paired 't' value was 10.5* which is significant at $p < 0.05$. From the result of the study, it was concluded that massage therapy was effective on respiratory parameters among toddlers with lower respiratory tract infection.

Keywords : Effectiveness; Massage Therapy; Toddlers; Lower Respiratory Tract

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Introduction

Toddlers develop five to eight attacks of respiratory illness such as bronchiolitis, asthma and pneumonia which causes 30 - 40% of hospitalization. Lower respiratory tract infection is more fatal than upper respiratory infection. Moreover in 2013, 6.9% of death due to respiratory illness which is the leading cause when compare to other diseases. Lower respiratory tract infection manifests symptoms like wheezing,

fever, tachypnoea, chest retraction. Massage therapy is a complementary and alternative therapy to treat "the manual manipulation of soft tissue intended to promote health and well-being" for toddlers. Massage therapy consists of five steps such as effleurage, petrissage, stroking, and kneading, which improves lung function, promotes relaxation, enhance healing process and well-being. It focuses on relaxing the muscles engaged in Massage Therapy and prevents stimulating the trigger points.

Respiratory therapists work in hospitals in the intensive care units (Adult, Paediatric, and Neonatal), on hospital floors, in Emergency Departments, in Pulmonary Functioning laboratories (PFTs), are able to intubate patients, work in sleep labs (polysomnography) (PSG) labs, and in home care specifically DME (Durable Medical Equipment) and home oxygen. Respiratory therapists are specialists and educators in many areas including cardiology, pulmonology, and sleep therapy.

The immune response of asthma is typically associated with the expression of the Th2-type cytokines, such as interleukin-(IL-) 4, IL-5, IL-9, and IL-13. However, the understanding of the Th2-biased immune system in allergic asthma remains rudimentary and there are still no new immunomodulatory therapies to cure asthma. In the clinic, β_2 -agonists and oral corticosteroids are still the first-line drugs for treating acute symptoms of asthma despite the presence of adverse effects. The association between the use of β_2 -agonists and the risk of death has been frequently reported. Corticosteroids cause detrimental side effects including immunosuppression and the increased risk of respiratory infections such as yeast infections in thrush.

In China, there are a number of traditional therapies for asthma, including acupuncture, herb medicine, and massage. Acupuncture is associated with the regulation of Th2 immunity and it is one of the most commonly used methods.

In 2007 the American Association for Respiratory Care (AARC) began developing recommendations for the promotion of the field of respiratory care in the United States in response to increased concern regarding licensure and credentialing issues as well as international recognition of those practicing in the United States. The task force decided to recommend that by 2015 the minimum education requirement for licensure and certification as a Respiratory Therapist be a bachelor of science in respiratory therapy (BSRT). The AARC task force also recommended the American Respiratory Care Foundation change its scholarship policies and only award assistance and grants to those working toward a bachelor's degree. The Committee on Accreditation for Respiratory Care (CoARC) was asked by the AARC task force to change its accreditation standards and no longer accredit associates level respiratory care programs. The CoARC replied by a press release rejecting the recommendation. In 2011 legislation introduced by the AARC will help improve the use of Respiratory Therapists in clinical applications by allowing them to manage patients suffering

from asthma and COPD seeing a clinic for routine checkups. Similar bills have been introduced before and have died in committee. Pediatric massage is the complementary and alternative treatment that uses massage therapy, or "the manual manipulation of soft tissue intended to promote health and well-being" for toddlers and adolescents. Its goal is to reduce pain, anxiety, loneliness and fear when toddlers are hospitalized or diagnosed with a debilitating medical condition. Pediatric massage therapy takes into consideration each child's individual physical development, cognitive development and health care needs. Massage therapists practice hands-on therapeutic techniques to address a variety of medical and non-medical concerns for patients. As with all massage specialties, advanced training matters. Special precautions should be taken due to the patient's vulnerability, both physically and emotionally, and to minimize risk and discomfort to the patient. Toddlers may have apprehension relating to touch due to their medical treatments.

However, plasma cortisol levels showed no obvious statistical change after acupuncture treatment, which may indicate that anti asthmatic effect proceeds independent of glucocorticoid. Massage has also been considered as a complementary treatment of asthma. Some report demonstrated that younger children who received massage therapy showed an immediate (30?min. after intervention) decrease in behavioural anxiety and cortisol levels. Massage may enhance excitability of vagus nerve and reduce the cortisol level through partial pressure to the body, swinging, and vibration.

Objectives

- ✓ To assess the effectiveness of massage therapy among toddlers.
- ✓ To prevent acute respiratory tract infection in toddlers.

Methodology

Research approach : Quantitative research approach.

Research design : The research design selected for this study was quasi experimental, non equivalent control group pre-test and post-test design.

Group	Pretest	Intervention	Posttest
Study group	O ₁	X	O ₂
Control group	O ₁	-	O ₂

Setting of the study : The study was conducted in selected hospitals, at Rohtak.

Population

- ▼ **Target population :** Toddlers with lower respiratory tract infection (LRTI).
- ▼ **Accessible population :** The population included for this study was toddlers with lower respiratory tract infection from selected hospitals, at Rohtak.

Sample : Sample consists of toddlers who are diagnosed as lower respiratory tract infection, asthma, bronchitis and pneumonia within the age group of (3-8years) admitted to a paediatric ward.

Sample size : The sample size consists of 60 toddlers those who had been diagnosed with lower respiratory tract infection. Among those, 30 participants were selected for study group and 30 for control group

Sampling technique : The researcher conveniently selected the study participants those who fulfilled the inclusion criteria.

Assumptions

- ▼ Toddlers with Lower respiratory tract infection may have ineffective Massage Therapy pattern.
- ▼ The massage therapy will be effective on respiratory parameters of toddlers with lower respiratory tract infection.
- ▼ Massage therapy is easy to perform, cost effective and have beneficial effects on respiratory parameters.

Description of the Tool : Tool consists of three parts

Part-I : Socio demographic variables : Age, gender, education, type of family, order of birth, religion, residence, income, occupation of father and occupation of mother.

Part -II : Clinical variables : Frequency of respiratory tract infection and previous habits of massage therapy.

Part-III : The observational checklist to assess the respiratory parameters. It consists of 10 items including respiratory rate, heart rate, temperature, oxygen saturation, chest retractions, breath sounds, and use of accessory muscles, cough, nasal flaring and dyspnoea. Based on the severity of respiratory parameters the scoring was described as follows. (maximum score was 4 and minimum score was 1)

30-40: no respiratory distress.

29-20: mild respiratory distress.

19-10: moderate respiratory distress.

<10: severe respiratory distress.

Results :

This chapter is divided into three sections :

Section-A : Distribution of the toddlers according to the demographic variables and clinical variables in study group and control group.

Section-B : Assessment of the level of respiratory parameters

Section-C : Testing hypotheses

Section-B

- ▼ **I. Distribution of Toddlers in the Study Group and Control Group According to the Level of Respiratory Distress Before Intervention**
- ▼ **Table 1 : Frequency and percentage of toddlers according to their level of respiratory parameters in study group and control group before intervention**

(N=60)

S.No.	Level of respiratory distress	Study group (n=30)		Control group (n=30)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	No distress	0	0.00	0	0
2	Mild distress	21	70	15	50
3	Moderate distress	9	30	15	50
4	Severe distress	0	0.00	0	0

Section-B

- ✓ **II. Distribution of Toddlers in Study Group and Control Group According to the Level of Respiratory Distress After Intervention**

- ✓ **Table 2: Frequency and percentage of toddlers according to their level of respiratory distress in study group and control group**

(N=60)

S.No.	Level of respiratory distress	Study group (n=30)		Control group (n=30)	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1	No distress	29	96.6	3	10
2	Mild distress	1	3.3	27	90
3	Moderate distress	0	0.00	0	0.00
4	Severe distress	0	0.00	0	0.00

Section-C Testing Hypotheses

- ✓ **I. Comparison of the pre-test and post-test level of respiratory parameters among toddlers in study group and control group**

- ✓ **Table 3: Mean and standard deviation and paired 't' value on pre and post-test level of respiratory parameters among toddlers in study and control group**

(N=60)

S.No.	Group	Mean	Standard Deviation	Paired 't' value
1	Studygroup (n=30)			
	Pre-test	29	5.6	10.5*
	Post-test	31.5	1.8	
2	Controlgroup (n=30)			
	Pre-test	25.3	5.0	1.47
	Post-test	26.9	1.70	

Section-C

- ✓ **II. Comparison of the Post-Test Level of Respiratory Parameters in Study Group and Control Group**

- ✓ **Table 4 : Mean, standard deviation and unpaired t value of the post-test level of respiratory parameters among toddlers in study group and control group after intervention**

(N=60)

S.No.	Group	Mean	Standard Deviation	Unpaired 't' value	Table value
1	Study group (n=30)	31.5	5.438	7.65*	2.0
2	Control group (n=30)	26.9			

Section -C

- ▼ **III. Association Between The Post-Test Level of Respiratory Parameters Among Toddlers in Study Group and Control Group with Selected Demographic Variables and Clinical Variables**
- ▼ **IV. Table 5: Association between the post-test level of respiratory parameters among toddlers with selected demographic variables and clinical variables in study group and control group**

(N=60)

S.No.	Demographic variables	Study group (n = 30)			Control group (n =30)		
		Df	χ^2	Table Value	Df	χ^2	Table Value
1	Age	3	2.9	7.8	3	6.1	7.8
2	Gender	3	1.3	7.8	3	3	7.8
3	Education	3	1.6	7.8	3	0.5	7.8
4	Type of family	9	0.9	16.9	9	0.1	16.9
5	Order of birth	6	0.9	12.5	6	0.4	12.5
6	Religion	9	2.3	16.9	9	2.6	16.9
7	Residence	3	1.1	7.8	3	0.6	7.8
8	Income	6	0.8	12.5	6	0.6	12.5
9	Occupation of father	9	1.2	16.9	9	1.6	16.9
10	Occupation of mother	9	4.1	16.9	9	2.6	16.9
11	Frequency of respiratory infection	9	4.1	16.9	9	1.2	16.9
12	Habits of massage therapy	3	0.1	7.8	3	3.8	7.8

Conclusions

The study was done to evaluate the effectiveness of massage therapy on respiratory parameters among toddlers with lower respiratory tract infection in selected hospitals, Rohtak, Haryana. The mean score on level of respiratory parameters among toddlers with lower respiratory tract infection in study group was 29 in pre-test and 31.5 in post-test. The paired 't' value was 10.5* which is significant at $p < 0.05$. From the result of the study, it was concluded that massage therapy was effective on respiratory parameters among toddlers with lower respiratory tract infection. Toddlers develop five to eight attacks of respiratory illness such as bronchitis, pneumonia and asthma which cause 30- 40% of hospitalization up to 3-8 years. So that the researcher identified massage therapy helps to reduce the length of hospital stay among toddlers. Massage therapy was not only cost effective, but also toddlers enjoyable to as a recreational game and toddlers were easily attracted towards it. Caregivers motivate to practice the massage therapy to their toddlers and encourage other caregivers in order to create

health awareness. Therefore the researcher felt that more importance should be given for deep Massage Therapy among toddlers like massage therapy to enhance lung expansion and reduce the reoccurrence of lower respiratory tract infection.

Nursing Implications

The researcher has derived the following implications from the study results, which are of vital concern to the field of nursing service, nursing administration, nursing education and nursing research.

Implications for Nursing Research : Evidence based practice helps the nurses to enrich them in knowledge and practice. Nursing researcher should be aware of the needs and problems of the existing health care system. More research studies can be conducted similar to this study to determine the effectiveness of massage therapy in reducing lower respiratory tract infection.

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Conflict of Interest : There are no conflicts of interest.

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