Original Research Article

Effects of honey on cough among toddler children

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Abstract

Parents play a major role in identification and assessment of children's health and health problems and make primary decision to help them. Cough is the most common respiratory problems of childhood and generally thought to account for the majority of referrals to the hospital for treatment. The present study aims to assess the effectiveness for honey on cough among the toddler children in selected rural community areas of Indore. The design for the study was quasi experimental non-randomized control group design. The study was conducted among 60 toddler children i.e. 30 each in control group and experimental group. The tool used was self-prepared cough assessment scale. The findings of the study revealed that the computed' value was19.276 at df 29 indicated significant difference between pre- test &post-test at the level of p≤0.001.There was no significant association between cough score and selected demographic variables. Thus, honey was found effective in reducing cough of toddlers in selected rural community areas of Indore (M.P.).

Keywords: Honey, Toddler, ARI

1 Introduction

Acute respiratory infections (ARI) are a major burden to child health in developing countries like India. ARI, mainly of lower respiratory tract, is the leading cause of death among children under five years of age, in such countries, resulting in nearly 1.9 million childhood deaths per year, of which 20 % are estimated to occur in India [1]. Many risk factors for respiratory tract infection have been identified which include not only the climatic conditions but also the poverty, poor nutrition, poor housing condition, indoor air pollution such as parental smoking, absence of ventilation, overcrowding, industrialization, social and cultural values, over use and misuse of antibiotics, lack of basic health services and lack of awareness or illiteracy [2].

Small doses of honey, 1 to 2 tablespoons intake has been found to influence favourable cough and also sleep of children. The dose of honey used was ½ tsp for 2-5 year old children, 1 teaspoon for the 6 to 11 year-old children and 2 tsp for 12 to18 year-old. Buckwheat honey was chosen in this study because of its high antioxidant properties [3]. The same study shows that honey is more effective than a chemical anti cough syrup these results were confirmed with 3 honeys (eucalyptus, citrus and labiates) for the improvement of sleep in children (1-5 year Old) with upper respiratory tract infections [4].

Due to hospitalization parents also have to take leaves from their jobs and financially also they are been burdened. When investigator had interaction with parents, researcher felt that without hospitalization stay there is need to find some remedies to reduce the severity of cough in small children.

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So, researcher found some reviews and literature related to home remedy that could help in reducing severe cough in children and provides relief from cough. In research reviews, honey was found to reduce the cough among the children. The investigator felt the need to find the effect of honey on cough among toddlers.

2 Objectives of the Study

1. To identify toddlers with cough in selected rural community areas of Indore (M.P.)
2. To compare the pre test and post test cough score level among toddler children in experimental and control group.
3. To determine the effectiveness of honey on cough among toddler children in selected rural community areas of Indore. (M.P.)
4. To find out the association between pre test cough score and selected demographic variable in experimental group.
5. To find out the association between pre test cough score and selected demographic variable in control group

3 Hypothesis of the Study

H_1: There will be significant difference in pre-test and post-test cough score among toddler children in experimental and control group at the level ofp≤0.005.

H_2: There will be significant association between pre-test cough score and selected demographic variables in experimental and control group at the level of p≤0.005.

4 Methodology

4.1 Research design: Quasi experimental non randomized pre test post- test control group design

4.2 Variables:

Dependent variable: cough score considered as the dependent variables in the study.
Independent Variable: intervention with honey is the independent variables.
4.3Setting: Rural community area- village Moradhat Indore (M.P).
4.4Population: Children between the age group of 1 to 3 years who are having cough since 2 to 3 days in selected rural community areas of Indore.

4.5 Sample size and Sampling Technique: 60 children between 1 to 3 years children in selected rural community areas of Indore, who met the sampling criteria. On probability purposive sampling technique was used as sampling technique.

4.6 Inclusion Criteria
(i). Both male and female toddlers
(ii). Parents who were willing to give consent.
(iii). Toddlers who had cough since two days

4.7Exclusion Criteria
i. Who were under treatment for cough?
ii. Not willing to participate
iii. Who were not available at the time of the study?

4.8 Research Tool
The tool consists of 2 parts:
•**Section A (Socio Demographic data):** It consist of 10 items regarding demographic characteristics of the children and was developed to collect the background information of the toddler. The item included in the demographic data collection are age, gender, no of siblings, order of birth, religion, type of family, education of father, education of mother, occupation of father and occupation of mother.
•**Section B (cough assessment scale):** This section contains assessment of cough severity and response of honey. The 4 point rating scale is self-prepared cough assessment scale consist of 8 questionnaires' related to cough use to assess the severity of cough among the toddler children in selected rural community areas of Indore.(M.P.) The scoring was done as "not at all"- 0, "A little"-1, "A lot"- 2, and "Extremely"-3. Overall interpretation of the scale was done as : No cough- 0, Mild –1-8, Moderate – 9-16 and severe-17-24.

4.9 Data Collection Procedure:
- The investigator introduces her to the parents and the purpose was explained & Consent was obtained from each child's parents.
- The children were divided in two groups 30 in experimental group and 30 in control group.
- Honey was given only to experimental group. Every day average 4-6 subjects were studied.
- 1tea spoon honey was given twice a day for 5days to each subject of experimental group.
- The post interventional cough score was assessed for both control group and experimental group by using self-prepared cough assessment scale.
- At last the investigator conveys gratitude towards the parents for good co- operation.

5 Research Findings

Section I: Demographic characteristics:

Age (in years): In the control group, there were 8 (26.7%) children in the age group 1 year, 14 (46.7%) children were in the age group 2 years and 8 (26.7%) children were in the age group 3 years. Majority of the children were of 2 years age. In the experimental group, there were 10 (33.3%) children in the age group 1 year, 10 (33.3%) children were in the age group 2 years and 10 (33.3%) children were in the age group 3 years.
Gender: In the control group, there were 12 (40.0%) males and 18 (60.0%) females. In the experimental group, there were 14 (46.7%) males and 16 (53.3%) females. In both the groups, there was a female preponderance.
Religion: In the control group, there were 30 (100.0%) children belonging to Hindu religion. In the experimental group, there were 30 (100.0%) children belonging to Hindu religion. The above table shows the distribution of parents according to demographic variables.
Educational status of father :In the control group, 7(23.3%) fathers were illiterates, 1 (3.3%) fathers had done his primary schooling, 12 (40.0%) fathers had done their secondary schooling and 10 (33.3%) fathers had done their graduation / post-graduation .In the experimental group, 8 (26.7%) fathers were illiterates, 6 (20.0%) fathers had done their primary schooling, 8 (26.7%) fathers had done their secondary schooling and 8 (26.7%) fathers had done their graduation / post-graduation. Control group fathers were a bit more educated as compared to experimental group fathers.
Educational status of mother: In the control group, 10 (33.3%) mothers were illiterates, 6 (20.0%) mothers had done their primary schooling, 10 (33.3%) mothers had done their secondary schooling and 4 (13.3%) mothers had done their graduation / post-graduation. In the experimental group, 16 (53.3%) mothers were illiterates, 4 (13.3%) mothers had done their primary schooling, 10 (33.3%) mothers had done their secondary schooling and none of the mothers had done their graduation / post-graduation. More number of study group mothers were illiterates**.**
Occupation status of mother: In the control group, 16 (53.3%) mothers were private employees, 4 (13.3%) mothers were government employees, 8 (26.7%) mothers were workers and 2 (6.7%) mothers were housewives. In the experimental group, 6 (20.0%) mothers were private employees,

1(3.3%) mothers was government employee, 1(3.4%) and 22 (73.3%) mothers were housewives. In experimental group, majority of the mothers were housewives, while in the control group majority of the mothers were private employees.

Occupation status of father: In the control group, 8(26.7%) fathers were private employees, 8 (26.7%) fathers were self-employed, 14 (46.7%) fathers were homemakers and none had govt job. In the experimental group, 14 (46.7%) fathers were private employees, 8 (26.0%) fathers were self-employed, 8 (26.7%) fathers were homemakers and none were into government job.

Income of Family Per month: In the control group, 5 (16.7%) participants were having a monthly family income of Rs.< 5000, 19 (63.3%) participants were having a monthly family income of Rs. 5001- 10,000, 6 (20.0%) participants were having a monthly family income of Rs.10001-20000.In the experimental group, 4 (13.3%) participants were having a monthly family income of Rs.< 5000, 20 (66.7%) participants were having a monthly family income of Rs.5001-10000,6(20.0%)participantswerehavingamonthlyfamilyincomeofRs.10001-20000.Majority of the families were having a monthly family income between Rs. 5001 to Rs. 10000.

Any information related to home remedies through: In the control group, on being asked about "Any information related to home remedies through", 18 (60.0%) participants had no such information, 4 (13.3%) participants had information from social and mass media; 4 (13.3%) participants had information from family, friends and relatives and 4 (13.3%)participants got the information from health personnel. In the experimental group, on being asked about "Any information related to home remedies through", 18 (60.0%) participants had no such information, 3 (20.0%) participants had information from social and mass media; 6 (20.3%) participants had information from family, friends and relatives and 3 (10.0%) participants got the information from health personnel .Less number of study group participants sought information from the health personnel.

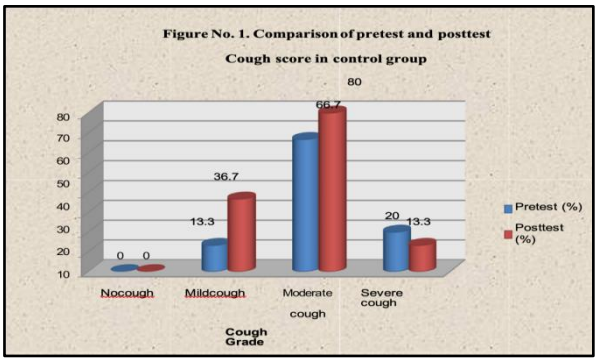
Any previously tried any home remedies for cough: In the control group, on being asked about "Any previously tried any home remedies for cough", 4 (13.3%) participants had tried home remedies for cough, while 26 (86.7%) participants had not tried any such home remedy. In the experimental group, on being asked about "Any previously tried any home remedies for cough", 6 (20.%) participants had tried home remedies for cough, while 24 (80.0%) participants had not tried any such home remedy. Slightly more number of experimental group participants had tried home remedy for cough.

Section II: Distribution of participant's according to cough score in both control and experimental group.

Table I: Comparison of pre test and post test cough score in control group N=30

Cough Score	Pre-test		Post Test	
	Frequency	%	Frequency	%
No Cough (0)	0	0	0	0
Mild (1-8)	4	13.3	2	6.7
Moderate (9-16)	20	66.7	24	80.0
Severe (17-24)	6	20.0	4	13.3
Total	30	100	30	100

The above data is represented in the form of figure below.

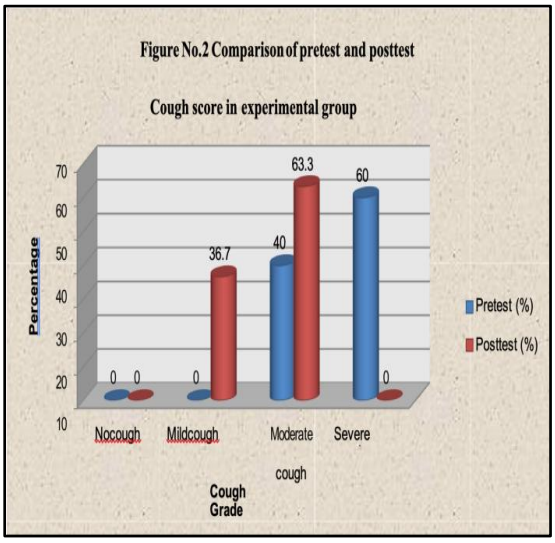


The children were assessed at pre-test using cough assessment scale. 4 (13.3%) children had mild cough, 20 (66.7%) children had moderate cough and 6 (20.0%) children had severe cough. Then the assessments of these children were done again, but were not given any intervention. In the post test 2 (6.7%) children had mild cough, 24 (80.0%) children had moderate cough and 4 (13.3%) children had severe cough.

Table II: Comparison of pre test and post test cough score in experimental group N=30

Cough Score	Pre-test		Post-Test	
	Frequency	%	Frequency	%
No Cough (0)	0	0	0	0
Mild (1-8)	0	0	11	36.7
Moderate (9-16)	12	40.0	19	63.3
Severe (17-24)	18	60.0	0	0
Total	30	100	30	100

The above data is represented in the form of figure below.



The children were assessed at pre test using cough assessment scale. 12 (40.0%) children had moderate cough and 18 (60.0%) children had severe cough. Then the children of experimental group were given honey and then reassessment done. In the post test 11 (36.7%) children had mild cough, 19 (63.3%) children had moderate cough and none of the children had severe cough.

Thus, the use of honey for cough had shown a decrease in the severity of cough in the children of experimental group.

Section III: Comparing the effectiveness of honey on cough in experimental and control group among toddler children

Table III: Comparison of mean cough score between pre-test and post-test in control group N=30

Cough Score	Cough Score [Mean ± SD]	t value	p value
Pre test	13.63 ± 4.00	1.394, df=29	0.174, NS
Post test	13.33 ± 3.42		

Paired' test applied. P value = 0.174, not significant

The mean pre test cough score in the control group was 13.63 ± 4.00 and post test cough score was 13.33 ± 3.42. The difference was found to be statistically not significant (p=0.174), showing a comparable mean pre test and post test cough score in the control group.

Thus, in the absence of intervention, no change in the cough score was seen in the control group children. The data is represented in figure number 3.

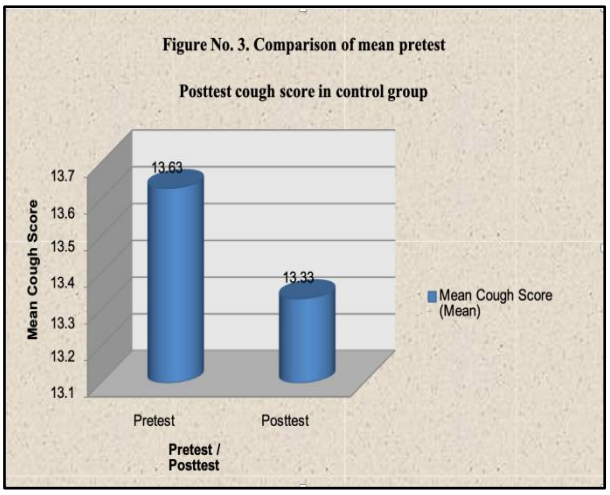


Table IV: Comparison of mean cough score between pre-test and post-test in experimental group N=30

Cough Score	Cough Score [Mean ± SD]	t value	p value
Pre test	16.97 ± 2.86	19.276, df=29	0.001
Post test	8.80 ± 1.69		

Paired't' test applied P value = 0.001, significant

The above table shows the comparison of mean pre test and post test cough score in experimental group. The mean pre test cough score in the experimental group was 16.97 ± 2.86 and post test cough score was 8.80 ± 1.69. The difference was found to be statistically significant (p=0.001), showing a lower mean post test cough score in comparison to the pre test cough score in the experimental group.

Thus, the intervention was very helpful in decreasing the cough score in the experimental group children the data is represented in figure number 4.

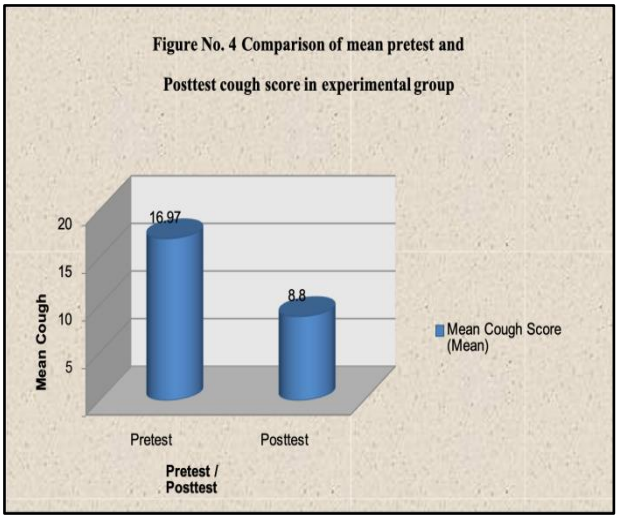


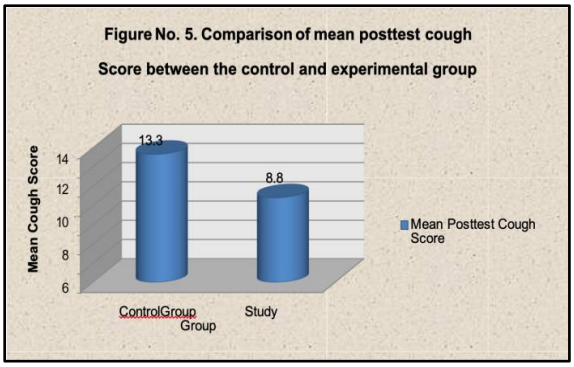
TABLE V: Comparison of mean post test cough score between control group and study group N=60

Cough Score	Cough Score [Mean ± SD]	t value	p value
Control Group	13.33 ± 3.42	6.513, df=58	0.001
Study Group	8.80 ± 1.69		

Unpaired't' test applied. P value = 0.001, significant

The above table shows the comparison of mean post test cough score between control and study group.

The mean post test cough score in control group was 13.33 ± 3.42, while in the study group it was 8.80 ± 1.69. The difference was found to be statistically significant (p=0.001), showing a significantly lower mean post test cough score in the study group in comparison to the control group. Thus, the intervention was very helpful in decreasing the cough score in the study group children. The data is represented in the figure number 5.



6 Interpretations of the Data

- The mean pre test cough score in the control group was 13.63 ± 4.00 and post test cough score was 13.33 ± 3.42. The difference was found to be statistically not significant (p=0.174), showing a comparable mean pre-test and post test cough score in the control group.
- Thus, in the absence of intervention, no change in the cough score was seen in the control group children.
- The mean pre test cough score in the experimental group was 16.97 ± 2.86 and post test cough score was 8.80 ± 1.69. The difference was found to be statistically significant (p=0.001), showing a lower mean post test cough score in comparison to the pre test cough score in the experimental group.
- Thus, the intervention was very helpful in decreasing the cough score in the experimental group children.
- Hence the research hypothesis H1 stated, is accepted.
- There was no statistically significant association of cough with selected demographic variables in experimental group and control. This reveals that the honey effective, irrespective of the socio demographical variables

7 Conclusions

Cough among the toddler children important health problem. Intervention like honey is helpful and safe to reduce cough, honey was the most effective treatment for all outcome related to cough, child and parents sleep. This has brought out various implication of the study and also has provided suggestion for future studies. The researcher felt a deep sense of satisfaction and fulfilment for having under taken the study. On the whole the study is providing greater experience for the investigator in the field of research.

References

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