



EFFECT OF APPLICATION OF ONION SLICE AT SOLE OF FEET ON FEVER AMONG CHILDREN ADMITTED IN PEDIATRIC WARD OF SELECTED HOSPITALS.

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ABSTRACT The researcher has adopted research design as Quasi experimental non randomized design. The samples are selected as per the purposive sampling technique. In this study sample size was of 60 out of which 30 samples were experiment group and 30 samples were control group. Analysis of data related to fever and application of onion slice on foot of child with fever, researcher applied two sample t-test for the comparison of reduction in temperature of children in experimental and control group. Corresponding p-values were small (less than 0.05) for fourth and fifth observations. It is evident that the temperature in experimental group reduced significantly more when compared with that of the control group. The work revealed that the application of onion slice on foot of the child with fever reduces the temperature significantly therefore it should be considered as a non-pharmacological measure in reducing temperature with the children's having fever.

KEYWORDS :

INTRODUCTION:

As most of our population and our future are children, they are to be taken care of. Children are very sensitive among all age groups. One of the factors affecting the children's health is fever. Fever is regulated increase in body temperature common in children can be a symptom of serious illness. At present scenario other alternative method of reducing fever can be used. Studies have shown that onion has got lot of medicinal value. As per the National Onion Association (NOA), they believed that placing raw, cut up onion around your room could protect you from the plague. They believed in evidenced-based germ theory¹.

Background Of The Study:

Researches were done on the parental knowledge and attitude and beliefs on fever. The researches revealed that the complete knowledge regarding the increased body temperature is un known to most of the parents. Nowadays home remedies are more effective than medicines. Onion is always readily available at homes and is of medicinal value. There are many studies done on onion. It is very effectively used for cold and cough. Research exhibits that the onions help and protects against numerous long-lasting diseases. This is due to the presence of flavonoid quercetin in the onions. Studies revealed that quercetin protects against cardiovascular disease, cataracts and cancer². Onion also contains various chemicals which produced naturally known as organosulfur compounds affects in reducing blood pressure and cholesterol levels. Onion slice placed on bottom of the feet of a child with fever reduces the temperature. The Chinese have observed that there are numerous nerve endings present at the bottom of the feet on the bottom of feet and are directly connected to the access point of various organs present in the body. Onions have solid antibacterial and antiviral characteristics. The body is healed by extracting the toxins when onion slice is placed on the bottom of the foot. It works by mainly giving effect by three ways – rich in Sulphur compound: detox the body, releases phosphoric acid: purifies blood, and antibacterial antiviral effect: supports immune system.³

Need for the study:

Fever is one of the leading causes of death among children. As per study done in Oct 4, 2017, on fever which are not differentiated in India and findings were, malaria positivity was found in seventeen percentage, dengue in sixteen percentage, scrub typhus in ten percentage, bacteraemia in eight percentage, leptospirosis in seven percentage and chikungunya in six percentage.⁴

Mothers give antipyretic immediately to the children having fever. Giving antipyretic to the children in such condition is harmful for the child. So, if there is any alternative treatment to reduce fever like

applying onion slice at bottom of the feet of a child with fever reduces fever and is helpful.⁵

Onions are easily available at home at any time. Even sometimes when the child is non cooperative and vomits the oral medication in such cases application of onion slice will be more effective. There are so far very few studies done for the alternate intervention to reduce fever. This method of reducing fever in children will be very effective as children doesn't have to take anything orally nor injectable medications. It just has to apply on the bottom of foot and socks can be put on which will allow the onion slice to be placed in position.

Tim Niehues revealed in his study that the proper physical assessment done by a experienced physician is the pillar of diagnosing and treating accordingly the child and adolescent. The incidence of severe bacterial infection (SBI) is about ten percent in new-borns, five percent in child aged up to three months, up to one percent in toddlers. In new-borns the death rate of SBI is about ten percent. Both the degree of the parents' and the physician's concern are important warning signs for SBI. Symptoms of SBI include petechiae, cyanosis, tachypnoea, poor peripheral perfusion and a rectal temperature more than 40°C. The use of antipyretic drugs should be done in particular conditions. Over forty percent of FUO cases are caused by contamination; the cause is not determined over thirty percent of cases⁶.

Kristina Duda explained about certain home remedies for colds. As per his findings one suggested remedies for cold and flu which has been shared through social medias is a cut onion placed in the room of a sick person. The main reason behind this is that the onion has the ability to clear off the bacterial infections from the infected person. But the above claim has no proper evidence for the support. The NOA too has suggested that there is no proper evidence as per science that the use of sliced onions has effect for getting rid of the infections. As per NOA this method of keeping onion slice in patient's room has been followed since fifteenth century. In the days of bubonic plague sliced onions were kept around the surroundings to keep the people from getting infected from the deadly disease. It was believed that these infections were spread through contaminated air. The usage of sliced onions drastically increased during the 1918 pandemic. In recent years there is positive and negative suggestions against the usage of sliced onions in the infected surroundings.

K. P. Sampath Kumar and et.al have done a study on an herb Allium cepa (onion) which is a traditional medicine and its health values. Onion is well known for its healing characteristics. It has been from ancient time used as a food remedy. Study reveals the onion consists of large amount of flavonoid quercetin which helps in protecting against

many long-lasting illnesses. Onion also consists of other various naturally produced chemical organosulfur com-pounds which are connected in reducing cholesterol and blood pressure levels. General body health can be promoted by having raw onion regularly in diet. It is anti-inflammatory, antibacterial, spasmolytic, stomachic, diuretic drug, anthelmintic, hypoglycaemic, expectorant, hypotensive, carminative, lithotriptic and stimulant. The risk of angina, arteriosclerosis and regular onion used in food reduces heart attack. One of the properties of onions is to release congestions particularly in the bronchial tract and lungs and removing infection, blocking and colds out of the ear is also outstanding. It is specially used in the treating people with symptoms of running nose. It's difficult to believe unless its result is witnessed. The gastrointestinal disorders and stomach upset is cured by using onion and appetite is also increased. Pharmacological name of onion is Allium cepa and it is present in every household. The onions with purple skinned are tastier. Addition to its taste, it has got health values and also has many home remedies and cosmetic properties¹⁹.

Research Methodology:

Research approach

An evaluative approach for this study in order to accomplish the objectives. Evaluative research deals with the questions of how well the program meets the objectives of this study. Quantitative approach was used.

Research design

Quasi experimental non randomized design was used for this study.

Setting

The main research was done in Dr. D Y Patil Hospital and Research Centre, Pimpri, Pune.

Population

The population in this study will be referred to children of age group 1-12 years of age with fever.

Method of data collection:

Sampling technique

Purposive sampling technique.

Sample size

In this study sample size was of 60. Experimental group 30 samples and control group 30 samples.

Sampling criteria

Inclusion criteria:

Pediatric patients who are having:

- Temperature - >99-degree Fahrenheit
- Age group 1 - 12 years of age.

Exclusive Criteria:

- Children have burn injury in foot.
- Children having open wound on the foot.

Tools And Techniques:

In this study Section IA- Demographic variables

Section IB- Clinical Profile

Section II- It consists of measurement of body temperature taken before and after application of onion slice at sole of the foot of the child with fever.

Section III- Procedure Profile

RESULTS:

Analysis And Interpretation of Data

Under the following headings the analysis of data is organized and presented.

Section I: Description of samples (children admitted in pediatric ward) based on their personal characteristics.

Section II: Analysis of data related to baseline temperature of child before application of onion slice at sole of foot admitted in pediatric ward.

Section III: Analysis of data related to effect of application of onion slice at sole of foot on fever among children admitted in pediatric ward.

Section IV: Analysis of data related to association of fever with

selected demographic variables and clinical profile of child.

Section I Description of samples (children admitted in pediatric ward) based on their personal characteristics. Table 1: Description of samples (children admitted in pediatric ward) based on their personal characteristics in terms of frequency and percentages.

N=30, 30

Demographic variable	Control group		Experimental group	
	Freq	%	Freq	%
Age of child				
1-3 years	14	46.7%	12	40.0%
4-6 years	9	30.0%	11	36.7%
7-9 years	4	13.3%	6	20.0%
10-12 years	3	10.0%	1	3.3%
Gender				
Male	15	50.0%	16	53.3%
Female	15	50.0%	14	46.7%
Previous experience in using onion as treatment for fever				
No	30	100.0%	30	100.0%
Yes	0	0%	0	0%

Section II

Analysis of data related to baseline temperature of child before application of onion slice at sole of foot admitted in pediatric ward.

Table 2: Baseline temperature of child before application of onion slice at sole of foot admitted in pediatric ward. N=30, 30

Observation	Fever	Control		Experimental	
		Freq	%	Freq	%
O1	Normal (<98.8)	0	0.0%	0	0.0%
	Mild (98.8 – 99)		0.0%	7	23.3%
	Moderate (99.1–100)	30	100.0%	23	76.7%
	Sever (>100.1)	0	0.0%	0	0.0%

Section III

Analysis of data related to effect of application of onion slice at sole of foot on fever among children admitted in pediatric ward.

Table 3: Effect of application of onion slice at sole of foot on fever among children admitted in pediatric ward. N=30, 30

Observation	Fever	Control		Experimental	
		Freq	%	Freq	%
O1	Normal (<98.8)	0	0.0%	0	0.0%
	Mild (98.8 – 99)		0.0%	7	23.3%
	Moderate (99.1 – 100)	30	100.0%	23	76.7%
	Sever (>100.1)	0	0.0%	0	0.0%
O2	Normal (<98.8)	0	0.0%	9	30.0%
	Mild (98.8 – 99)	7	23.3%	6	20.0%
	Moderate (99.1 – 100)	23	76.7%	15	50.0%
	Sever (>100.1)	0	0.0%	0	0.0%
O3	Normal (<98.8)	0	0.0%	22	73.3%
	Mild (98.8 – 99)	24	80.0%	8	26.7%
	Moderate (99.1 – 100)	6	20.0%	0	0.0%
	Sever (>100.1)	0	0.0%	0	0.0%
O4	Normal (<98.8)	1	3.3%	30	100.0%
	Mild (98.8 – 99)	1	3.3%	0	0.0%
	Moderate (99.1 – 100)	28	93.3%	0	0.0%
	Sever (>100.1)	0	0.0%	0	0.0%
O5	Normal (<98.8)	1	3.3%	30	100.0%
	Mild (98.8 – 99)	0	0.0%	0	0.0%
	Moderate (99.1 – 100)	29	96.7%	0	0.0%
	Sever (>100.1)	0	0.0%	0	0.0%

Table 4: Paired t-test for the effect of application of onion slice at sole of foot on fever among children admitted in pediatric ward. N=30, 30

Observation	Mean	SD	T	df	p-value
O1	99.6	0.37			
O2	99.2	0.35	8.0	29	0.000
O3	98.7	0.25	17.1	29	0.000

O4	98.2	0.25	22.8	29	0.000
O5	97.9	0.23	26.9	29	0.000

Table 5: Two sample t-test for the comparison of change in temperature among children admitted in pediatric ward in experimental and control group.

N=30, 30

Observation	Experimental		Control		T	df	p-value
	Mean	SD	Mean	SD			
O2	0.4	0.30	0.5	0.21	1.18	58	0.121
O3	1.0	0.31	0.8	0.10	3.05	58	0.002
O4	1.4	0.34	0.5	0.17	12.82	58	0.000
O5	1.7	0.35	0.3	0.18	19.14	58	0.000

From above observations it is evident that the temperature in experimental group reduced significantly more as compared to that in control group. The application onion slice on a sole of foot was significant effective in controlling the temperature of children.

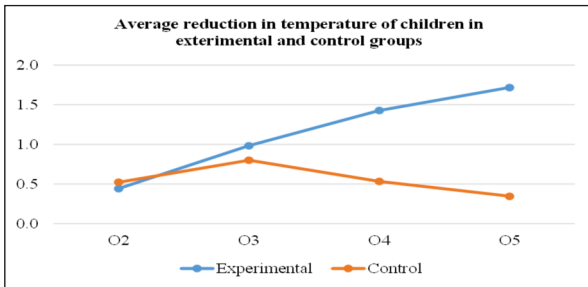


Figure 1: Average reduction in temperature of children in experimental and control groups

Table 6: Effect of application of onion slice at sole of foot on pulse among children admitted in pediatric ward.

N=30, 30

Sr. No.	Observation	Pulse	Control		Experimental	
			Freq	%	Freq	%
1.	O1	Normal	0	0.0%	0	0.0%
		Abnormal	30	100.0%	30	100.0%
2.	O2	Normal	0	0.0%	0	0.0%
		Abnormal	30	100.0%	30	100.0%
3.	O3	Normal	12	40.0%	17	56.7%
		Abnormal	18	60.0%	13	43.3%
4.	O4	Normal	0	0.0%	30	100.0%
		Abnormal	30	100.0%	0	0.0%
5.	O5	Normal	0	0.0%	30	100.0%
		Abnormal	30	100.0%	0	0.0%

Table 7: Effect of application of onion slice at sole of foot on respiration among children admitted in pediatric ward.

N=30, 30

Sr. No.	Observation	Respiration	Control		Experimental	
			Freq	%	Freq	%
1.	O1	Normal	0	0.0%	0	0.0%
		Abnormal	30	100.0%	30	100.0%
2.	O2	Normal	0	0.0%	0	0.0%
		Abnormal	30	100.0%	30	100.0%
3.	O3	Normal	8	26.7%	25	83.3%
		Abnormal	22	73.3%	5	16.7%
4.	O4	Normal	0	0.0%	30	100.0%
		Abnormal	30	100.0%	0	0.0%
5.	O5	Normal	0	0.0%	30	100.0%
		Abnormal	30	100.0%	0	0.0%

This indicates that the pulse and respiration of children improved remarkably after the application of onion slice at sole of foot.

Section IV

Analysis of data related to association of fever with selected demographic variables and clinical profile of child.

Fisher's exact test for the association of fever with selected demographic variables, clinical variables and of the child was done. Since p-values are large (greater than 0.05), none of the demographic variables and clinical variables was found to have significant

association with the fever among children.

DISCUSSION

The findings of the study revealed that: the effect of onion slice on the children with fever shows that, 23.3% of the children had mild temperature and 76.7% of them had moderate temperature at first observation. On second observation, 30% of them had normal temperature, 20% of them had mild temperature and 50% of them had moderate temperature. On third observation, 73.3% of them had normal temperature and 26.7% of them had mild temperature. In fourth and fifth observations, all of them had normal temperature. This indicates that the temperature of children improved remarkably after the application of onion slice at sole of foot. Similar study was done in Pakistan by Muhammad Nouman Sohail and et.al in 2011 on onion as an substitute medicine for the people in Pakistan. Pakistani population has various common disease conditions and major reason for their occurrence. Various studies evidenced that onion is likely to be used against human pathogenic organisms. The study reveals that the extract and powder of onion have repressing action against cells of tumor. Besides scientifically proven hypoglycaemic, cardioprotective and hypolipidemic actions suggest its likely use in diabetes and cardiovascular diseases. In females' risk of bone injuries particularly are reduced by onions. Study reveals that the rich source of medicinal properties in onion are flavonoids, organic sulphur, polyphenols, saponins and many other secondary metabolites. Its organic sulphur compounds, which contribute for its different medicinal potentials are sensitive towards cooking; moreover, this sensitivity is also variety dependant which means it's more beneficial in its raw form. On the basis of reviewed literature, it is concluded that it possesses significant beneficial health effects and its incorporation in daily food especially in raw form will provide protection against many diseases.

In various studies onion is found to be of great medicinal value for different conditions. Similarly in this study also it is found that onion is having great effect on reducing fever in children.

CONCLUSION

The researchers overall experience in conducting the study was a satisfying one as there was co-operation from the participants. The purpose of this research was to assess the outcome of application of onion slice on the foot of child with fever.

Analysis of data related to association between fever and clinical profile revealed that Since all the p-values are large (greater than 0.05), none of the clinical variable was found to have significant association with the fever among children. Analysis of data related to fever and application of onion slice on foot of child with fever, researcher applied two sample t-test for the comparison of reduction in temperature of children in experimental and control group. Corresponding p-values were small (less than 0.05) for fourth and fifth observations. It is evident that the temperature in experimental group reduced significantly more as compared to that in control group. The application onion slice on a sole of foot was significant effective in controlling the temperature of children.

The study concluded that the application of onion slice on foot of the child with fever reduces the temperature significantly therefore it should be considered as a non-pharmacological measure in reducing temperature among the children with fever.

Limitations

- As this study is of small sample size and limited area of setting it can't be broadly generalized.
- The study was limited to age group 1 year to 12 years only.
- The study was done with the antipyretic medication given to the children with fever.

The study was limited to the experience level of the researcher.

Recommendations

Keeping in view the findings of the study, the following recommendations are made-

- It is suggested that the study may be replicated using a larger population and a different setting.
- The same study can be done without giving antipyretic medication.
- A comparative study can be conducted on effect application of onion slice on foot of child with fever and other non-pharmacological methods.
- A study can be conducted to assess the effect onion on cough and cold.

REFERENCES:

1. Jacquelyn Cafasso, Debra Rose Wilson, Healthline Magazine, May 17, 2017.
2. Saurabh N Singh, "Antimicrobial activity of ginger and onion extracts against enteric pathogens" *Journal of Pharmacognosy and Phytochemistry* 2018; 7(6): 2653-2656
3. Snopes.com, article written by Alex Kasprak, November 2016
4. *BMC Infectious Diseases* (2017) 17:665, Research article.
5. How to Fight a Fever Naturally with an Onion, By Dollie Freeman article from *Health & Nutrition*, 2017.
6. http://www.nwlink.com/~donclark/history_isd/bertalanffy.html
7. Shona McCombes, *Scribber Journal*, Published on February 22, 2019 <https://www.scribbr.com/>
8. Prof. Dr Tim Niehues, *Dtsch Arztebl International Journal*. 2013 Nov; 110(45): 764-774.
9. Rajan Arora, *Pediatric Clinicals North America*, 2013 Oct; 60(5): 1049-62
10. Ozgur Cogulu, <http://europepmc.org/abstract/med/14521533>
11. *Indian Journal of Pediatrics* 83, 38-43 (2016).
12. *World Journal of Pediatrics*, Edition 2011 Feb, Volume; 7(1), Page no.: 5-10
13. *American Journal of Medical Science*, Edition 2007 Aug; 334(2): 92-6
14. Anne M. Walsh May 2006 *Journal of Advanced Nursing* 54(2): 217-27
15. *Journal of Korean Academy of Child Health Nursing* 2010; 16(1): 30-40
16. *Indian Journal Critical Care Medicine*. 2014 Feb; 18(2): 62-69.
17. Expert Review on Anti - Infective Therapy, edition 2013 Aug; 11(8): 805-15
18. <https://www.verywellhealth.com/will-an-onion-in-the-room-stop-a-cold-or-the-flu-770452>
19. *Journal of Chemical and Pharmaceutical Research*, Volume 2010, 2(1): 283-291
20. *International Journal of Pharmacology*, volume 7, Issue 6, page no: 736-744.
21. Victor Kuete, *Text book of Toxicological Survey of African Medicinal Plants* Imprinted by Elsevier, Edition 2014, Pages 99-133
22. Ronald Ross Watson and Victor R. Preedy, *Text book of Dietary Interventions in Gastrointestinal Diseases, Foods, Nutrients, and Dietary Supplements*, Imprinted by Academic Press, Edition 2019, Pages 245-255)
23. <https://www.wisdomjobs.com/e-university/research-methodology-tutorial-355/criteria-of-selecting-a-sampling-procedure-11469.html>
24. <https://www.iwh.on.ca/what-researchers-mean-by/sample-size-and-power>
25. <https://www.wisdomjobs.com/e-university/research-methodology-tutorial-355/criteria-of-selecting-a-sampling-procedure-11469.html>
26. L. Crocker, in *International Encyclopedia of the Social & Behavioral Sciences*, 2001