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Evaluate The Effect Of Intervention Bundle On Thirst Intensity Among School Age Children With Nil Per Oral Status In Selected Hospitals

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Abstract

Thirst during postoperative period in children become more aggressive and irritable which may rather cause increase in pain and other vital parameters. The pediatric nurse are not prepared to manage with thirst during the Nil Per Oral status postoperatively and often avoid thirst when children need for water. The aim of the study is to evaluate the effect of intervention bundle which consists of sterile wet oral wipes, sterile water sprays and lip moisturizer (petroleum jelly) on thirst intensity among school age children with Nil Per Oral status. The study was conducted in Paediatric surgical ward and PICU in selected hospitals in Pune.A quasi-experimental design was utilized in the study. A Non-Probability Purposive Sample of 60 school age children (6-12 years) were recruited in the study. Demographic and clinical profile, Modified Oral Assessment tool and Observational checklist of intervention bundle were used for data collection. Results: The mean pretest thirst score in experimental group was 8.53 with standard deviation of 0.89 and in the control, group was 8.66 with standard deviation of 0.75 and the mean posttest thirst score in experimental group was 0.46 with standard deviation of 0.73 and in control group was 6.46 with standard deviation of 0.48. The paired t test was used find the effectiveness between the dependent groups. The calculated t was 56.29, df= 29 and the correspondence p-value was 0.0001(less than 0.05) level of significance. Conclusion: Based on the results intervention bundle consists of sterile wet oral wipes, sterile water sprays and lip moisturizer (petroleum jelly) was significantly relief thirst intensity in school age children with Nil Per Oral status.

Keywords: Thirst intensity, Nil Per Oral status, intervention bundle, school age children.

I. INTRODUCTION

Thirst is the craving or a desire to drink fluids, resulting in the basic innate tendency of a living organism to drink. It arises from the scarcity of fluid or an increase in the accumulation of certain low molecular weight organic compound that influence the properties of biological fluids, such as sodium. The physical manifestations of thirst are distinguished as a mixture of sensations that increase with dehydration and decrease with rehydration. Thirst is characterized by a dry, scratchy mouth and throat; chapped and dry lips; and, in extreme cases, may be accompanied by lightheadedness, dizziness, tiredness, irritability, and headache.[1] When a patient fasts in hospital for a long time, problems like dehydration, malnutrition and electrolyte imbalance, hypoglycemia, nausea and vomiting. Older people, children, pregnant women and patients who are critically ill are particularly vulnerable. When patients become dehydrated; they display physiological signs including hypotension, tachycardia, oliguria, confusion and a decreased level of consciousness. This, together with the

psychosocial factors of fasting - being unable to eat or drink like other patients - can make being Nil Per Oral an unpleasant experience.[2]The drugs used can also cause dryness of the oral mucosa in patients in the postoperative period Blood loss also influences the sensation of thirst in the post operative period, because there is imbalance of electrolytes, which is closely related to the amount of water present in the body.[3]

A bundle is a structured way of enhancing the processes of care and patient outcomes: a small, straightforward set of evidence-based practices. A care bundle is a particular tool with clear parameters. As a package of interventions, each component is essential; the bundle should be delivered on each occasion to each patient meeting the bundle criteria.

As far by now, no permanent strategies are being carried off to assess thirst in post operative patient. This highlights the fact that there is a lack of database interventions in hospitals to reduce the thirst intensity. There is an alarming need to view and observe thirst intensity and dry mouth as distressful symptoms and by keeping that as one important factor.

II. NEED AND SIGNIFICANCE OF STUDY

Thirst is a real discomfort presented by most of the patients in the postoperative period, while they remain fasting. In India, total 1, 88, 82,734 surgeries were carried out during 2019-20 and in Maharashtra total 825590 surgeries were carried and thus patients have to be kept NPO for long hours. Studies depict that in the patient's perception; this thirst discomfort is intense and results in increased anxiety, dehydration, irritability, weakness and despair.[4]

A descriptive cross-sectional study was conducted in 2020 by Thapa K, et al, among 75 heart failure patients admitted to the cardiology department in AIIMS hospital, Delhi. For collecting data from July 2019 to November 2019 purposive sampling technique was used. To assess the thirst intensity of the participants' visual analog scale (0–100 mm) was used and to assess thirst distress 8-item thirst distress scale was used. The mean age of the participants was 44.83 ± 15.51 years and the majority (72%) was male.82.7% participants had fluid restriction, and 97.3% of all of the participants were receiving diuretics. The median thirst intensity was 33 (16–50) mm. Thus, the investigator in this study concluded that about 66.7% of the participants had moderate-to-severe thirst distress.[5]

An experimental study was conducted in Maharishi Markandeshwar University, India among patients admitted in ICUs to assess and evaluate the effectiveness of intervention bundle on thirst intensity and dry mouth and to determine association of selected variables with thirst and dry mouth. Intervention bundle used in the study consisted of cold wet oral swabs to wipe oral cavity and cold-water mouth spray. Intervention bundle administered in two sessions with difference of 30 minutes between sessions to the experimental group patients. Thirst intensity scale and dry mouth assessment scale was used to thirst and dry mouth of patients. The results of the findings of the study revealed that after administration of intervention bundle in two sessions, the mean thirst intensity score was significantly lower t=-13.0, df=58, p=0.001 in experimental group (mean=3.10±0.75) than control group (6.70±0.59). The mean dry mouth score was significantly lower 85t=-9.27, df=58, p=0.001 in experimental group (0.37±0 than control group (3.67±0.84). There was a significant association of patients with renal system diagnosis(p=0.007), gastrointestinal diagnosis with thirst (p=0.009) in experimental group, patients with Nil Per Oral status (0.02) and patients having drainage tube with dry mouth (0.009) in experimental group and patients' ICU duration stay, antihypertensive drugs, antibiotics drugs, multivitamin drugs with dry mouth (0.007) in control group. The investigator investigated in this study that Intervention bundle was effective in decreasing thirst intensity and dry mouth among ICU patients.[6]

While working in Peadiatric unit, the investigator found that there was increase thirst intensity among the children post operatively when kept NPO for 6 - 8 hrs and thus it was a

requirement to do some interventions for it. Many studies regarding the effect of intervention bundle on thirst intensity has been done for elderly patients but not on children. Children, who are critically ill are more vulnerable patients and should be given proper care and management postoperatively to prevent complications. There were no such studies done to assess the effect of intervention bundle on thirst intensity among the children with NPO status hence therefore this intervention bundle will be very effective in children.

III. PROBLEM STATEMENT

Evaluate the effect of intervention bundle on thirst intensity among school age children with Nil Per Oral status in selected hospitals.

IV. OBJECTIVES OF THE STUDY

1. To identify the level of thirst intensity among school age children with Nil Per Oral status.

2.To determine the effect of intervention bundle on thirst intensity among school age children with Nil Per Oral status.

3. To find an association with selected demographic and clinical profile of school age children with thirst intensity score

V. HYPOTHESIS

Ho: There is no significant difference of intervention bundle on thirst intensity among school age children with Nil Per Oral status.

VI. METHODS AND MATERIALS USED

The Researcher has adopted quasi experimental pretest posttest control group design. A Non-Probability Purposive Sampling Technique was used and the sample size was 60 school age children which consisted of 30 experimental and 30 control groups who had fulfilled sampling criteria i.e 6-12 years are selected. The experimental group received the intervention bundle and the control group received the routine care. The researcher used Structured Questionnaire and Modified Oral assessment as a tool for this study. The tool consisted of 3 sections. Section IA consisted of demographic profile of a sample such as age and gender and Section I B consisted of diagnosis, name of surgery, types of surgery based on body part, types of anesthesia, drugs used during anesthesia, duration of Nil Per Oral status and oral effects of being nil by mouth post operatively in child.Section II consisted of modified oral assessment tool to evaluate the level of thirst intensity among school age children with NPO status .Section III consisted of procedure observation checklist which included sterile wet oral wipes, sterile water sprays and lip moisturizer(petroleum jelly) which was administered for 3 sessions in 10 minutes of each gap to assess the thirst intensity level within 8 hours. The content validity was determined by the experts. The reliability of the tool was established by Inter Rater method, and was found to be 0.866. As the tool was reliable the investigator proceeded without any problems and d for pilot study. The pilot study was conducted from 22-11-2021 to 30-11-2021 and the investigator found that the study was feasible. The main study was conducted in pediatric ward and PICU from 07-12- 2021 to 28-01-2022 of different selected hospitals. After obtaining the consent from the participants the assessment was done with modified oral assessment tool to both experimental and control group. After one hour of the surgery the experimental group received intervention bundle which consists of sterile wet oral wipes, sterile water sprays and lip moisturizer (petroleum jelly). After one hour of the first intervention the researcher re-administered the intervention bundle till the nil per oral was out and then the presence of thirst was re-assessed. The data were analyzed by using descriptive and inferential statistics.

VII. RESULTS

Description of samples (school age children) based on their demographic variables and clinical profile

In relation to the age, in the experimental group, majority of samples 16(53.34%) were in the age group of 10-12 years, 10(33.33%) were in the age group of 8-10 years and 04(13.33%) were in the age group of 6-8 years. In the control group, majority 13(43.34%) were in the age group of

10-12 years, 10(33.33%) were in the group of 8-10 years and 07(23.33%) in the age group of 6-8 years. With regard to the gender, 19(63.33%) were male and 11(36.67%) were females in the experimental group and in the control group 17(56.67%) were male and 13(43.33%) were females. With regard to the type of surgery, in the experimental group, majority 10(33.33%) were had orthopedic surgery, 09(30%) were had gastrointestinal surgery, 06(20.01%) were had Neurosurgery, 03(10%) had from ENT surgery, 01(3.33%) cardiovascular surgery and 01(3.33%) from urology and nephrology. In the control group, 09(30%) were had gastro intestinal surgery, 09(30%) from orthopedic surgery, 05(16.67%) were from Neurosurgery, 04(13.33%) were from EENT surgery,02(6.67%) from urology/nephrology and 01(3.33%) from cardiovascular surgery. With regard to the type of anesthesia, both in the experimental and control group, 30(100%) was general anesthesia. In relation to the drugs used in anesthesia, in experimental and control group, 30(100%) Propofol, Fentanyl, fevoflurane and Glycopyrrolate. With regard to the duration of the surgery, in experimental group, 27(90%) were had more than 8 hours and 3(10%) were had 6 hours of surgery and in the control group 24(80%) were had 8 hours of surgery and 06(20%) were had 6 hours of surgery. In relation to the oral effects of NPO, in the experimental group, 30(100%) were feeling thirsty, dry tongue, difficulty in swallowing and chapped lips, 15(50%) were had dry mouth and 05(16.66%) had saliva that feels sticky and stringy. In the control group, 30(100%) were had feeling thirsty, dry tongue, difficulty in swallowing and chapped lips, 18(60%) were had dry mouth and 04(13.33%) had saliva that feels sticky and stringy

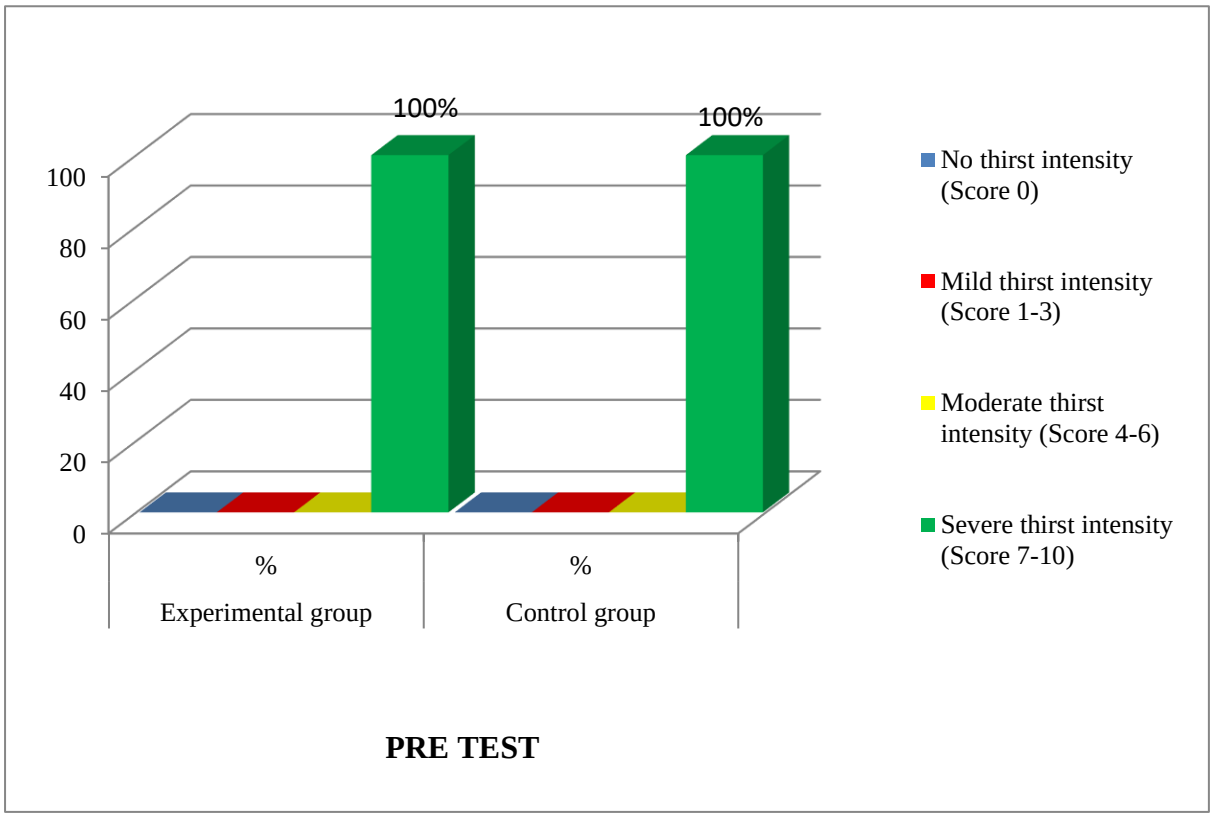

Figure No 1: Classification of samples (school age children) based on the pre test thirst intensity in experimental and control group

The above graph describes the pre-test thirst intensity in experimental and control group in experimental group, all the samples 30(100%) had sever thirst intensity and in control group also all the samples had 30(100%) had thirst intensity

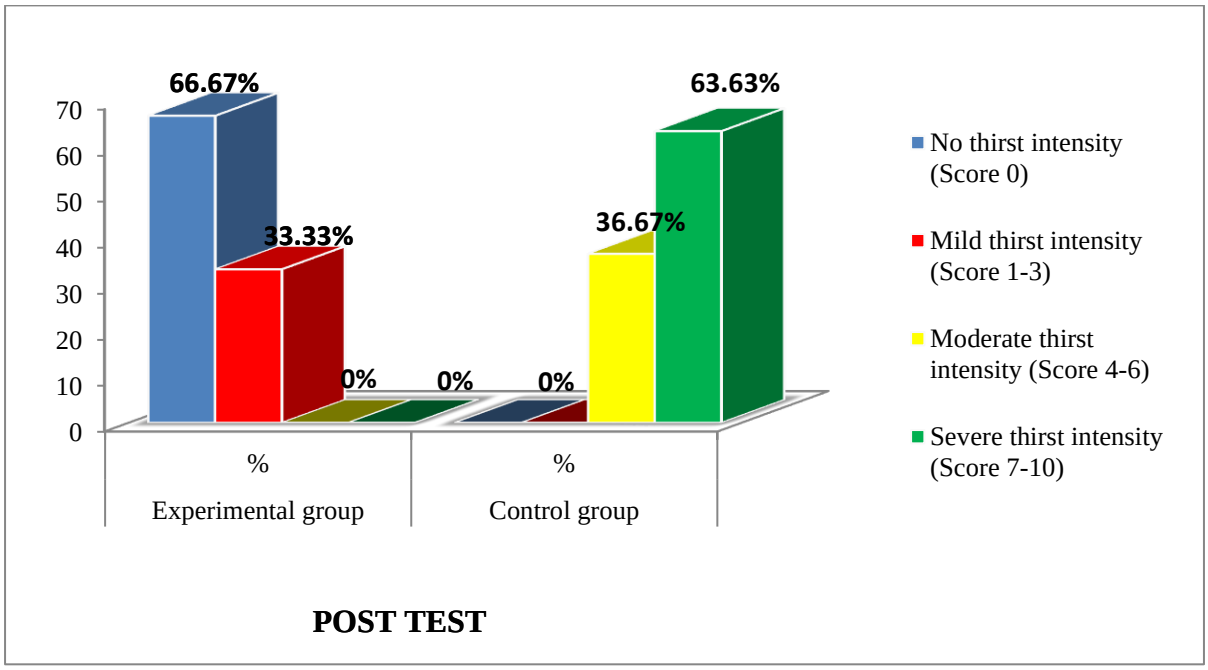

Figure No. 2: Classification of samples (school age children) based on the posttest thirst intensity in experimental and control group

The above graph describes the post-test thirst intensity in experimental and control group in the experimental group, 20(66.67%) were had no thirst intensity and 10(33.33%) were had mild thirst intensity where as in the control group 19(63.33%) had severe thirst intensity and 11(36.67%) were had moderate thirst intensity.

Analysis of data related to effect of intervention bundles by comparison between the pre-test and post- test levels of thirst intensity in experimental and control group

Sr. No	Aspects	Experimental group			Control group			Unpaired t test
		Mean	SD	Paired t test	Mean	SD	Paired test	
1	Pre test	8.53	0.89	56.29, df=29, p=0.0001, S*	8.66	0.75	24.88, df=29, S*	0.61, df=58, Non-Significant
2	Post test	0.46	0.73		6.46	0.86		**29.13, df=58, Significant**

Among children in the experimental group, the mean pre test thirst score was 8.53 with standard deviation (SD) of 0.89 where as the mean post test thirst score was 0.46 with SD of 0.73 and the mean difference between the pre-test and post-test was 8.06 with SD of 0.78. The paired t test was used find the effectiveness between the dependent groups. The calculated t was 56.29, df= 29 and p value was 0.0001, which shows there was effectiveness of intervention bundle on thirst intensity.

Among children in control group the mean pre test thirst score was 8.66 with standard deviation (SD) of 0.75 where as the mean post test thirst score was 6.46 with SD of 0.86 and the mean difference between the pre-test and post-test was 2.2 with SD of 0.48. The paired t test was used find the difference between the dependent groups. The calculated t was 24.88, df= 29 and p value was 0.0001, which shows there was difference. This difference may be due to duration of stay and other external factors.

Analysis of data related to association with selected demographic and clinical profile of school age children with thirst intensity score in experimental group and control group

The Chi square test was used to find the association between the thirst intensity score with the demographic variables, the obtained chi square value in the experimental group for the age in years was 3.48, df=2, p=0.175 and control group was 5.402, df=2, p=0.0671 and for the gender in experimental group was 2.0096, df=1, p=0.15 and in control group was 0.010, df=1, p=0.97 which shows that that there was no significant association. Hence there is no significant association between Nil Per Oral score and selected demographic variables in experimental and control group.

The Chi square test was used to find the association between the thirst intensity score with the clinical profile, in experimental group the obtained value for type of surgery was 10.31, df=10, p=0.9816 and duration of surgery was 0.238, df=2, p=0.625. In the control group the chi square value for, for type of surgery was 19.09, df=7, p=0.008, was found significant and for duration of surgery was 2.7121 df=2, p=0.0995 and was found not significant in control group. The calculated values were more than the table value, hence the clinical profile of the samples, was no significant association with Nil Per Oral score in experimental and control group.

VIII. DISCUSSION

A quasi-experimental study was conducted in 2016 by Kaur R, at GSS hospital Faridkot, Punjab on 60 patients to see the effectiveness of oral care with ice cold saline versus room temperature saline on thirst and oral conditions among postoperative patients' undergone abdominal surgeries and is kept NPO postoperatively for 2-3 days which also leads to thirst and changes in oral conditions. Through convenient sampling technique the data was collected. Subjective thirst scoring and objective oral assessment (with room temperature saline in group I and ice-cold normal saline in group II), pre and post intervention was done. The tool consists of structured questionnaire enquiring demographic and bio physiological profile, numeric rating scale for thirst assessment and objective oral assessment tool for assessing oral conditions. The study findings revealed that the mean score of the thirst levels of the subjects in the ice-cold saline group experienced less thirst after the intervention as compared to the subjects in room temperature saline group. The paired t test value 5.37 of the subjective thirst assessment was found to be statistically significant at 0.00 level. Thus, the researcher in this study investigated that use of ice-cold saline is effective thirst management in post operative patients.[7]

A quantitative, analytical, and longitudinal study was conducted in 2020 by Motta NH et al, in Southern Brazil to associate medications, anesthetic techniques, and clinical conditions that interfere in the time of patient approval in the safety protocol for thirst management among 203 adult patients in the immediate postoperative period, evaluated every 15 minutes for 1 hour. A general prevalence of thirst of 67.7%, and mean intensity of 6.38. Fentanyl, morphine, rocuronium, and sevoflurane increased lack of approval in the protocol within 30 minutes ($P < .05$). General anesthesia ($P < .0001$) and level of consciousness (95.4%) presented the highest non approval rates. Anesthetics and general anesthesia delayed protocol approval; however, after 30 minutes, 75.4% of patients had been approved. Thus, the researcher in this study investigated that the patient received thirst relief strategies and demonstrated that thirst can be satiated precociously with safety.[8]

The findings of the study have been discussed and the results of the data were interpreted through statistical analysis. The focus of the study was to evaluate the effect of intervention bundle on thirst intensity among school age children with Nil Per Oral status. The mean pretest thirst score in experimental group was 8.53 with standard deviation of 0.89 and in the control group was 8.66 with standard deviation of 0.75 and the mean posttest thirst score in experimental group was 0.46 with standard deviation of 0.73 and in control group was 6.46 with standard deviation of 0.48. The paired t test was used find the effectiveness between the dependent groups. The calculated t was 56.29, df= 29 and p value was 0.0001(less than

0.005)which shows there was effectiveness of intervention bundle on thirst intensity. Hence the null hypothesis was rejected and it was inferred that there was significant difference of intervention bundle on thirst intensity among school age children with Nil Per Oral status.

IX. CONCLUSION

The findings indicate that modified oral assessment was an efficacious tool to evaluate the effect of intervention bundle on thirst intensity among school age children with nil per oral status. The modified oral assessment tool was an acceptable and appropriate method for assessment of thirst intensity and the intervention bundle that consist of sterile wet oral wipes, sterile water sprays and lip moisturizer (petroleum jelly) was very effective in reducing the thirst level

X. LIMITATIONS OF THE STUDY

1. This study was limited to 60 samples and so it can't be broadly generalized
2. The study was limited to the age group 6 year to 12 years only.
3. In this study only 4 to 8 hours of Nil Per Oral status was considered

XI. RECOMMENDATIONS

- A similar study may be replicated on large samples; there by findings can be representative or generalized
- The study can be undertaken on different target populations
- The study can be done pre operatively and post operatively Nil Per Oral status
- The same study can be done by considering the aspect of thirst intensity in particular surgeries
- A comparative study can be conducted on the effect of intervention bundle on thirst intensity and other non-pharmacological methods.

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