

## **A comparative study to assess the efficacy of Peripheral IV line cannula site with or without splint application of Peripheral IV cannula duration**

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### **Abstract**

**Background:** Children are the inheritance from god. They should be handled with love and care. Investment in child's development is an investment in the future of the nation. Peripheral intravenous cannula are the most commonly used intravenous device in hospitalized patients. They are primarily used for therapeutic purposes such as administration of medication, fluids and blood products as well as blood sampling.

**Aims:** The present study aims to assess the efficacy of peripheral IV cannula site with or without splint application of peripheral of iv cannula duration.

**Methods:** The research design for the comparative study research with two groups experimental and control group. Obtaining the permission sample by using inclusion criteria 50 among male and female children will be selected by using purposive sampling technique. the data will have collected by using personal information from Whichs include baseline characteristics of children (age, sex, religion, duration of hospitalization, iv cannulation duration, type of family, birth order) the time spend by the investigator for each children was approximately 20 minutes by using paediatric PIV infiltration scale.

**Results:** The study results shows that the efficacy of peripheral intravenous cannula functional duration among children in the control group (with splint) at  $P < 0.05$  level and other demographic variables had not shown statistically significant association with efficacy of peripheral intravenous cannula functional duration among children in the control group (with splint).

**Conclusion:** Efficacy of Peripheral intravenous cannula function duration among in the Contol group (with splint). More than prevent to complication in intravenous cannula.

**Keywords:** Peripheral iv cannula, children, duration, with or without splint application

### **Introduction**

Children are the inheritance from god. They should be handled with love and care. Investment in child development is an investment in the future of the nation. The child is a preious gift and is an important asset to its family and society. Children are one third our population and all of our future leaders.

Global health observatory (2009) stated that children contribute to one third of the global population and they are the basic resource for the future mankind. Children are vulnerable to all kinds of illness. This vulnerability is mainly due to immature development of physical, intellectual and immune system, and they often get hospitalized due to their vulnerability. A child who faces hospitalization is no exception.

Health is a complex phenomenon, the period of growth and development extended throughout the life cycle. However the period in which the principle change occurs is from conception to the end of adolescence. This is the most important period of the growth and development. To give them happy and healthy childhood, we must safe, guard their total health right from the beginning.

Peripheral intravenous therapy is one of the most common

stetments provides in the pedictricdus unit. Peripheral intravenous (PIV) provides the means for administering fluids, parenteral nutrition, blood products and medications. Peettit, 2003; Frank, hummel, Peripheral intravenous cannulation is one of the most common invasive procdures that nurse perform and it carries with it a high risk of complication. For example, phlebitis rates reported for Patients eceiving intravenous therapy have been as high as 80% with rates in most hospitals. patients also experience unnecessary discomfort or pain. Nurse performing the procedure should be well trained as many complications can arise from peripheral intravenous cannulation.

Venipuncture is a process of puncturing a peripheral vein with a flexible tube, containing a needle to again access to the venous system for administering fluids and medications using aseptic technique.(Navjot Kiran, 2013)

School age children are beginning to understand need for painful procedure. They fear body harm and are about health. They may appear to overact to illness or injury. As in all age groups the school aged child remember pervious pain experience which will affect the child's response. nonverbal cluse also important in school aged children. (Susan *et al.* 2001) Peripheral intravenous cannula are the most

commonly used intravenous device in hospitalized patients. They are primarily used for therapeutic purpose such as administration of medication, fluids and blood products as well as blood sampling.

**Methods and Materials**

A quantitative approach with comparative research design was used to conduct the study in pediatric ward of thiruvallur district head quarter government hospital. 50 samples were selected by using a purposive sampling technique. The criteria for sample selection was child above 1 to 5 years, child with health disease who are willing to participate in the study. The exclusion criteria for the sample was child with minor surgeries. The data collection period was done with prior permission from the HOD of pediatric department and ethical clearance was obtained from them. The demographic data were collected by using structured questionnaire. The biophysical parameters were assessed in the experimental and control group. Then children in experimental (without splint), control (with splint). The data were analyzed using descriptive and inferential statistics. The sample characteristics were described using frequency and percentage. Chi square used to associate the

grade with splint and without splint with the selected demographic variables.

**Results and Discussion**

**Section A: Description of the demographic variables of children**

Experimental group (without splint), most of the children 13(52%) were in the age group of 2-4 years, 13(52%) were male, 17(68%) were Hindus, 14(56%) belonged to nuclear family, 13 (52%) of children were staying for 1 day in hospital, 13(52%) had 2 days for duration of iv cannulation and 14(56%) had only one child in the family.

Control group (with splint) most of the children 10(40%) were in the age group of 2-4 years, 14(56%) were male, 12(48%) were Hindus, 15(60%) belonged to nuclear family, 14(56%) of children were staying for 1 day in the hospital, 14(56%) had 2 days for duration of iv cannulation and 13(52%) had only one child in the family.

**Section B:** Assessment and comparison of efficacy of peripheral intravenous cannula functional duration in experimental (without splint) and control group (with splint).

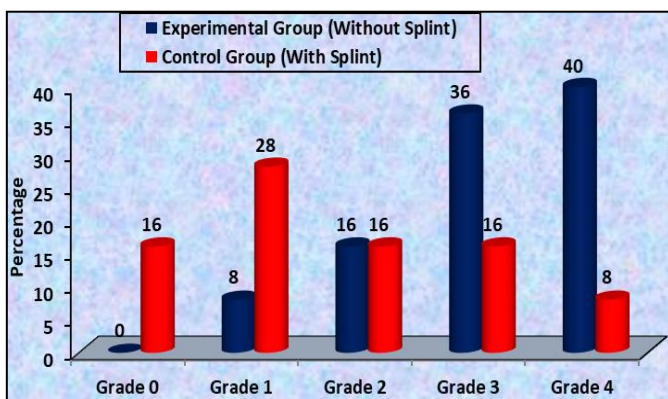
**Table 1:** Frequency and percentage distribution of efficacy of peripheral intravenous cannula functional duration in the experimental (without splint) and control group (with splint). N = 50(25+25)

Group	Grade 0		Grade 1		Grade 2		Grade 3		Grade 4		Chi-Square Test
	No.	%	No.	%	No.	%	No.	%	No.	%	
Experimental Group (without splint)	0	0	2	8.0	4	16.0	9	36.0	10	40.0	$\chi^2=18.034$ d.f=4 p = 0.001 S***
Control Group (with splint)	8	16.0	7	28.0	4	16.0	4	16.0	2	8.0	

\*\*\*p<0.001, S – Significant.

The above table 1 shows that in the pretest of experimental group (without splint), most of them 10(40%) were Grade 4, 9(36%) were Grade 3, 4(16%) were Grade 2 and 2(8%) were Grade I whereas in the control group (with splint), most of them 8(16%) were Grade 0, 7(28%) were Grade 1, 4(16%) were Grade 2, 4(16%) were Grade 3 and 2(8%) were Grade 4.

The chi-square was computed to find the differences between the distribution in the two groups. The calculated values of chi-square 18.034 was found to be statistically highly significant which clearly infers that there was significant difference between the two groups



**Fig 1:** Percentage distribution of efficacy of peripheral intravenous cannula functional duration in the experimental (without splint) control group (with splint).

**Section C:** Association of efficacy of peripheral intravenous cannula functional duration with selected demographic variables

Demographic variables religion and family type had shown statistically significant association with efficacy of peripheral intravenous cannula functional duration among children in the experimental group (without splint) at P<0.05 level and other demographic variables had not shown statistically significant association with efficacy of peripheral intravenous cannula functional duration among children in the experimental group (without splint).

**Section 4:** Association of efficacy of peripheral intravenous cannula functional duration among children with selected demographic variables in the control group (with splint)

The demographic variables number of children in the family had shown statistically significant association with efficacy of peripheral intravenous cannula functional duration among children in the control group (with splint) at P<0.05 level and other demographic variables had not shown statistically significant association with efficacy of peripheral intravenous cannula functional duration among children in the control group (with splint)

**Conclusion**

The indicates that with splint is more effective functional of during in peripheral intravenous cannula. With splint also help to prevent to complication of intravenous cannula.

## References

1. Dala S, Chawal D, Singh J, Agarwal R, Dedrari A, Paul V limb splinting for intravenous cannula in neonates a randomized controlled trid arch Dis childhood-fetal and neonatal ED 2009-94.
2. Daniel G, Batton M, Jeffrey Maisels, Peter Appelbaum. pediatrics September 1982;70(13)487-490.
3. Gupta P, Rai R, Basus S, Faridi M. life span of peripheral intravenous cannula in neonatal intensive care unit of a developing ountry J pediater Nurs 2003, 18(14)
4. Johnson CC, Strevens BJ. Experience in neonatal intensive care unit affects pain response pediatrics 1996-98.
5. Lorelle Malyon, Amenda Jullman, Natalie Philips, Jeanine, Tricia, Kledien, Jenny Murfield, Clarire M Rickard, 23 oct 2014.
6. Megha Raghavan, Praveen BK. Effect of joint immobilization of life span of intravenous cannula; A Randomised controlled trial. Int j centemp pediatric 2015;2;411-14
7. Robert V, Johnson MD, Steven M, Donn MD, AMJ dis child 1988;142(191);968-971
8. Sandeep Tripathi, Vidhu Kaushilk Varinder Singh, journal of infusion nursing 31(3)182-188,2008.
9. Shamsheer Singh Dala, Deepak Chavla, Jyoti Singh Ramesh K Agarwal, Ashek Kumar. archies edition 2009;94(6):f394-f396.