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EFFECT OF PLANNED TEACHING PROGRAM AND INSTRUCTIONAL VIDEO ON THE KNOWLEDGE AND COPING SKILLS OF NURSING STUDENTS REGARDING UNDERSTANDING AND INTERPRETATION OF YOUNG INFANTS COMMUNICATION PATTERNS. [A DOCTORAL STUDY]

Nursing

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ABSTRACT

A quantitative, evaluative, Quasi- experimental study with Interrupted Time series research design to evaluate the effect of PTP and Instructional Video (IV) was conducted from Aug to Sep 2018 to assess the Knowledge and Coping skills of 100 Nursing students related to the understanding and interpretation of the young infants communication patterns in selected Nursing Institutions of Patna, through Non Probability, Convenience Sampling Technique. "General Systems Theory" and "Child Health Assessment Interaction Model (CHAIM)" also known as "Parent Child Interaction Theory" was adopted as the theoretical base for the framework of the study. Reliability was determined by Cronbach's alpha test using test retest and inter rater method.. The reliability for the self structured questionnaire was 0.853, standardised Modified COPE questionnaire was 0.827 and self structured Anxiety scale was 0.807 respectively which were all found to be acceptable and good. **RESULTS:** The major findings of the study showed that there was a surge in Knowledge score as 3% in pre test, 36% in post test 1 and 49% in post test 2. Coping skills too kept enhancing from good to very good as 18% in pre test, 33% in post test 1 followed by 44% in post test 2. Majority of Nursing students Anxiety level scores decreased in severity from 49% in pre test to 35% in post test 1 followed by 23% in post test 2. There was a significant association between the Knowledge, Anxiety level and Coping skills scores of Nursing students with the demographic variables like "*nature of experience, institute from where undergoing training and feel adequately knowledgeable*" at $p < 0.05$ rejecting null hypothesis. But there was undoubtedly higher significant association with demographic variables like "*past experience of caring a healthy young infant, study about young infant's communication patterns, ever provided any teachings to parents or anyone on how to understand and decode the various communication patterns used by the young infants*" at p-value < 0.01 accepting alternate hypothesis. The comparison of Knowledge, anxiety level and coping skills between Degree and Diploma Nursing students showed that B.Sc Nursing students had better knowledge and enhanced coping skills than DGNM students while the anxiety level of the students in both the programs were same. **CONCLUSION:** The study concluded that PTP and IV were not only effective in increasing the Knowledge and Coping skills of the Nursing students but it also decreased the Anxiety level further. Though a marginal difference in the mean score of coping skills between the post test 1 and 2 (Fig 6) indicated that IV didn't have much impact in improving the coping skills of the nursing students.

KEYWORDS

Communication, Coping, Effect, Knowledge, Patterns, Young infants.

The birth of a baby is one of life's most wondrous moments. Newborn babies have amazing abilities, yet they are completely dependent on others for every aspect - feeding, warmth, and comfort. Because the newborn infant is helpless, hence his/her needs must be met initially by the Nursing personnel. [1] A lot of researches needs to be conducted concerning the young infants, which enables us to have a better and clear understanding of the issues concerning the interaction of infants with the caregivers and how to deal with them effectively. Lack of Knowledge related to the understanding and interpretation of the young infant's communication patterns are one of the greatest cause of poor language and speech development giving rise to dangerous sequels like shaken baby syndrome.

Babies' means of communicating become more sophisticated very rapidly, and hence one needs to learn quickly what the baby's signals mean, as they get more complex. These are often called 'cues' as they are meant to prompt you to take action. Common baby cues indicate needs like hunger and sleep. [2]

That's why every time anyone speaks, the baby stares back at and makes cooing sounds in response. It is in this fashion that babies communicate with their parents and their caregivers. By the time the little one turns six months old, they typically begin to babble comprising of vowels initially.

Background of the study:

Although communication is often considered to mean words and sentences, it also includes any and all ways that a baby lets us know what they need and how they are feeling. That can be seen with facial expression, body language, crying, eye contact or sounds. [3]

It is often said that babies have different cries for different purposes. Mothers are able to identify their infant's needs based on the type of cry they hear. These different cries are a type of preverbal communication. Preverbal communication is an incredibly important mode of interaction that infants use to navigate the world. Babies use different cries to alert their caregivers that they need something, whether it's a diaper change, food, or sleep. However, vocalizations don't only come in the form of crying. One may also hear infants making different noises that aren't outright cries. These noises also serve to convey a message to caregivers. Vocalizations like this may be used to indicate discomfort, contentment, that infants use to interact with people around them, primarily their parents or caregivers. These communications are not in the form of spoken words (hence the name 'preverbal') but instead through vocalizations, gestures, or eye movements/gazes. [4]

Nurses and other health care workers generally are not reported to have sufficient knowledge on understanding and interpreting/ decoding the various young infant's communication patterns. As per the records available, the relationship between the dyad of young infant's communication and nurses or other health care providers has not been explored to the same extent as mothers or fathers. Health care providers' experience of a crying baby and how they cope when caring for an inconsolable, fussy young infant is explored in this study.

Need of the study:

Babies cannot meet their own needs directly, all they can do is express it and generally this is through crying. By remaining alert and close to the baby, parents and caregivers may have opportunity to tune in and notice his/her pre-cry cues and signals. [5]

Since the young infants cannot verbally communicate, the nurse must be able to read the cues of the baby, to determine how the young infant is feeling. Obviously, babies unlike adults cannot tell us what they are feeling (Dabaja, 2015).

With a little experience, identification of infant behaviours and cues becomes an automatic response, so whenever the nurse works with an infant, s/he can anticipate the way the infant may respond and what activities may be most appropriate with the infant at that time. (Brazelton & Nugent, 1996) [6]

The birth of a baby itself is an Anxiety producing situation for everyone who are left with feelings of guilt if unable to care for the baby henceforth shows hesitance in handling the babies. Also the Nursing students lacks the Knowledge, skills in understanding the young infant's which leave these babies more vulnerable to the various devastating sequels in future. Nursing students are left perplexed as to how to take care for the little ones especially without any qualified, expertised, professional support. Keeping this in view, a study was undertaken to develop a PTP and Instructional Video to educate the Nursing students which enabled them to take self responsibility for the young infant's.

OBJECTIVES:

1. Assess and evaluate the existing Knowledge, Anxiety and Coping skills of Nursing students regarding young infant's communication patterns before the administration of PTP and Instructional Video.
2. Assess and evaluate the Knowledge, Anxiety and Coping skills of Nursing students regarding young infant's communication patterns after the administration of PTP and Instructional Video.
3. Compare the pre and post Knowledge, Anxiety and Coping skills of Nursing students regarding young infant's communication patterns.
4. Determine the relationship between the Nursing students' Knowledge, Anxiety and Coping skills to understand and interpret the young infant's communication patterns used as a means of communication.
5. Compare the Knowledge, Anxiety and Coping skills of Nursing students from different programs.
6. Find the association between the Knowledge, Anxiety and Coping skills of Nursing students understanding and interpretation regarding young infant's communication patterns with selected demographic variables.

Hypotheses:

H_0: There will be no significant difference of PTP and Instructional Video on the Knowledge, anxiety and Coping skills of Nursing students regarding the understanding and interpretation of the young infant's communication patterns.

H_1: There will be significant difference of PTP and Instructional Video on the Knowledge, anxiety and Coping skills of Nursing students regarding the understanding and interpretation of the young infant's communication patterns.

H_{01}: There will be no significant difference in the level of Knowledge, anxiety and Coping skills of Nursing students with regards to understanding & interpretation of young infant's communication patterns between diploma and degree Nursing students.

H_2: There will be significant difference in the level of Knowledge, anxiety and Coping skills of Nursing students with regards to understanding of young infant's communication patterns between diploma and degree Nursing students.

H_{02}: There will be no significant association between the Knowledge, anxiety and Coping skills of Nursing students regarding the young infant's communication patterns with the selected demographic variables.

Logic Diagram: Bloom's Taxonomy was used to explain the understanding & interpretation of young infants communication patterns. It was modelled on the assumption that the young infant's behavioural signals (i.e. communication: crying & cues) elicits care by physiologically aroused health care workers/ caregivers (i.e. student nurses); thus mediating the health care workers/ caregivers' response. The health care workers/ caregivers' understanding and interpretation of young infant's signals as communication, is therefore filtered through their attachment schema (mutual bonding) thus activating associated behavioural responses and patterns thought to be universal and based on individual differences.[7,8,9]

Review of Literature: Related to

i. Young infant's communication patterns.
ii. Knowledge regarding understanding and interpretation of young infant's communication patterns.
iii. Anxiety/stress level, coping skills and its effects regarding understanding and interpretation of young infant's communication patterns.
iv. Management regarding soothing and calming a crying and fussy young infant's
v. Effect of PTP and Instructional Video.
vi. Socio demographic variables and young infant's communication.
vii. Experiences of caregivers regarding young infant's communication patterns.

Research Methodology:

1. **Research Approach:** Quantitative, Evaluative
2. **Research Design:** Quasi Experimental Interrupted Time Series
3. **Procedure for data collection: (O_1 X O_2X O_3)**
4. **Day 1: Pretest:** Anxiety Scale 1, Knowledge Questionnaire 1, Coping Skills 1; PTP
5. **Day 5/6: Post test 1:** Anxiety Scale 2, Knowledge Questionnaire 2, Coping Skills 2; Instructional Video
6. **Day 10: Post test 2:** Anxiety Scale 3, Knowledge Questionnaire 3, Coping Skills 3
7. **Sample & size:** 3rd year B.Sc Nursing students and 2nd/3rd year DGNM students; 100
8. **Sampling technique:** Non probability convenience sampling

Variables:

9. **Independent:** Planned Teaching Program (PTP) and Instructional Video (IV)
10. **Dependant:** Knowledge and Coping skills

Validity of the tool: Content Validation of Tools (3), PTP and Plans on Instructional Video was done by 23 experts

Method of data collection:

11. **Data collection technique and tool:** Self structured Knowledge questionnaire, Self structured Anxiety Scale, Standardised COPE questionnaire (Modified); pre test, post test and concealment observation.
12. **Development of the instruments:**
13. PTP of 55 minutes
14. Plan on standardised Instructional Video of 45 minutes: Dunstan Baby Language

15. **Description of the tool:** **TOOLI:**

Self Structured Knowledge questionnaire consisting of 2 sections:
Section 1 consisting of **21 questions:**

A) Demographic Performa
B) General Information's on young infant's communication patterns

16. **Section II: - Knowledge Questionnaire: 28 MCQ's**
17. Part A: Knowledge on general information about young infant's communication patterns (5 Questions).
18. Part B: Knowledge regarding Crying (12 Questions).
19. Part C: Knowledge regarding Cues (4 Questions).
20. Part D: Knowledge regarding soothing a crying and fussy baby (7 Questions).

The level of Knowledge was classified and scored as: **Poor (0-8), Average (9-18), Good (19 – 28)**

TOOL II: Self Structured Anxiety Scale consisting of 28 items. The Anxiety level was classified and scored as: **Severe (94 - 140), Moderate (47 – 93) and Mild (0 – 46)**

TOOL III: Standardised COPE questionnaire (Modified) consisting of 34 items. The Coping level was classified and scored as: **Very Good (103 - 136), Good (69 – 102), Satisfactory (35 – 68) and Unsatisfactory (0 – 34)**

Ethical clearance was taken from the Institute Ethical Committee, prior to the conduction of the study.

RESULTS:

Table 1: Knowledge of Nursing students regarding understanding and interpretation of young infant's communication patterns before and after the administration of PTP and Instructional video. **N=100**

Knowledge Scores	Before PTP	After PTP	After Instructional Video
	Frequency (%)	Frequency (%)	Frequency (%)
Poor (0 – 8)	17 (17)	2 (2)	1 (1)
Average (9 – 18)	80 (80)	62 (62)	50 (50)
Good (19 – 28)	3 (3)	36 (36)	49 (49)

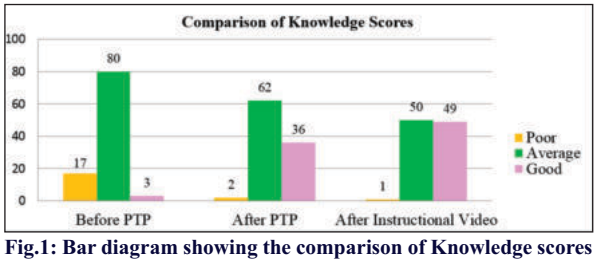

Fig.1: Bar diagram showing the comparison of Knowledge scores in Pre test and Post test

Table 2: Anxiety level of Nursing students before and after the administration of PTP and Instructional video **N=100**

Anxiety level Score	Before PTP	After PTP	After Instructional Video
	%	%	%
Mild (0 – 46)	0	0	0
Moderate (47 – 93)	51	65	77
Severe (94 – 140)	49	35	23

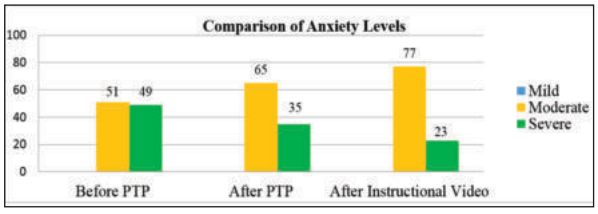

Fig.2: Bar diagram showing the comparison of Anxiety level Scores in Pre test and Post test

Table 3: Coping skills of Nursing students before and after the administration of PTP and Instructional Video. **N=100**

Coping Skills Score	Before PTP	After PTP	After Instructional Video
	%	%	%
Unsatisfactory (0 – 34)	0	0	0
Satisfactory (0 – 46)	3	2	1
Good (47 – 93)	79	65	55
Very Good (94 – 140)	18	33	44

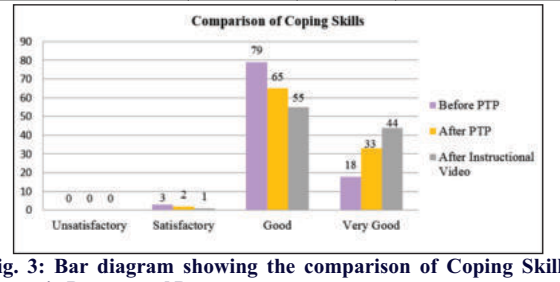

Fig. 3: Bar diagram showing the comparison of Coping Skills Scores in Pre test and Post test

Table 4: Description of mean and standard deviation of Pre test & Post test for Knowledge, anxiety and coping skills score

	Knowledge	Anxiety Level	Coping Skills
	Mean ± Std. Deviation		
Before PTP	11.83 ± 3.49	94.4 ± 12.70	92.59 ± 11.64
After PTP	16.6 ± 4.64	90.55 ± 10.69	95.53 ± 11.95
After Instructional Video	17.52 ± 4.61	86.52 ± 10.72	95.09 ± 11.76

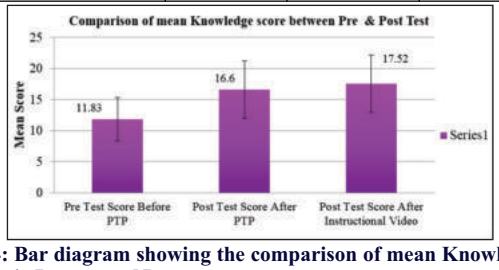

Fig.4: Bar diagram showing the comparison of mean Knowledge scores in Pre test and Post test

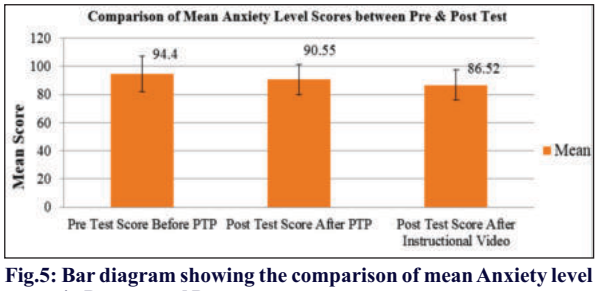

Fig.5: Bar diagram showing the comparison of mean Anxiety level scores in Pre test and Post test

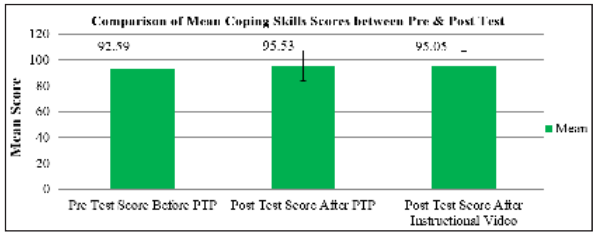

Fig.6: Bar diagram showing the comparison of mean Coping skills scores in Pre test and Post test

Table 5: Statistical difference between mean and standard deviation of pre test and post test Knowledge Scores 1st, 2nd, 3rd Observations

Knowledge score	Paired Differences	t	df	p-value	Significance
	Mean ± S.D.				
Before PTP –After PTP	5.35 ± 3.14	11.98	99	0.00*	**HS**
After PTP –After Instructional Video	3.08 ± 2.28	2.46	99	0.015*	**S**
Before PTP –After Instructional Video	6.13 ± 3.73	12.98	99	0.00*	**HS**

***p < 0.05 (5%) S – Significant HS – Highly significant**

Table 6: Statistical difference between mean and standard deviation of pre test and post test Anxiety Level Scores 1st, 2nd, 3rd Observations.

Anxiety Level score	Paired Differences	t	df	p-value	Significance
	Mean ± S.D.				
Before PTP –After PTP	9.81 ± 7.98	3.18	99	0.001*	**HS***
After PTP –After Instructional Video	7.55 ± 7.97	3.93	99	0.00*	**HS***
Before PTP –After Instructional Video	12.08 ± 9.07	6.09	99	0.00*	**HS***

***p < 0.01(1%)**

Table 7: Statistical difference between mean and standard deviation of pre test and post test Coping Skills Score 1st, 2nd, 3rd Observations.

Coping Skills score	Paired Differences	t	df	p-value	Significance
	Mean ± S.D.				
Before PTP –After PTP	8.66 ± 7.36	2.67	99	0.008**	**HS**
After PTP –After Instructional Video	7.22 ± 6.75	0.444	99	0.65***	**NS**
Before PTP –After Instructional Video	9.86 ± 6.90	2.11	99	0.03*	**S**

***p<0.05 **p < 0.01 ***p>0.05 NS – Not Significant**

Table 8: Comparison of Knowledge level between Degree and Diploma Nursing students **N=100**

Education	Pre test Knowledge Score	Z Test	p	Significance
	Mean ± SD			
DGNM	10.80 ± 2.93	3.86	0.00	HS
B.Sc Nursing	13.56 ± 3.71			
Post test – 1				
DGNM	15.28 ± 4.12	3.83	0.00	HS
B.Sc Nursing	18.83 ± 4.66			
Post test – 2				
DGNM	16.30 ± 4.39	3.67	0.00	HS
B.Sc Nursing	19.59 ± 4.29			

p < 0.01

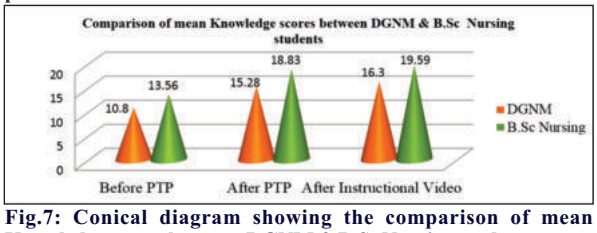

Fig.7: Conical diagram showing the comparison of mean Knowledge scores between DGNM & B.Sc Nursing students

Table 9: Comparison of Anxiety level between Degree and Diploma Nursing students

Education	Pre test Anxiety Level Score Mean ± SD	Z Test	p	Significance
DGNM	94.58 ± 13.06	0.19	0.42	NS
B.Sc Nursing	94.08 ± 12.25			
Post test – 1				
DGNM	90.33 ± 11.18	0.27	0.39	NS
B.Sc Nursing	90.91 ± 9.95			
Post test – 2				
DGNM	87.03 ± 10.67	0.61	0.26	NS
B.Sc Nursing	85.64 ± 10.91			

p > 0.05

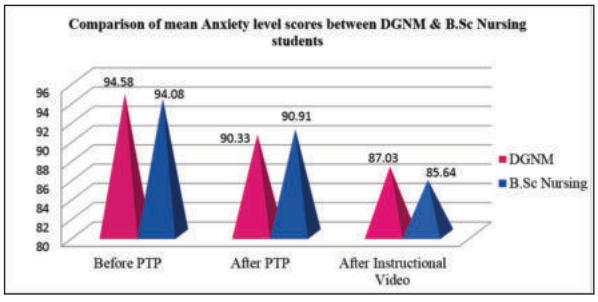

Fig. 8: Pyramid diagram showing the comparison of mean Anxiety level Scores between DGNM & B.Sc Nursing students

Table 10: Comparison of Coping skills between Degree and Diploma Nursing students

Education	Pre test Coping Skills Score Mean ± SD	Z Test	p	Significance
DGNM	93.63 ± 12.0	0.051	0.47*	NS
B.Sc Nursing	92.51 ± 11.15			
Post test – 1				
DGNM	93.04 ± 12.30	2.94	0.001**	HS
B.Sc Nursing	99.75 ± 10.13			
Post test – 2				
DGNM	92.46 ± 12.13	3.21	0.00**	HS
B.Sc Nursing	99.56 ± 9.71			

***p > 0.05** ****p < 0.01**

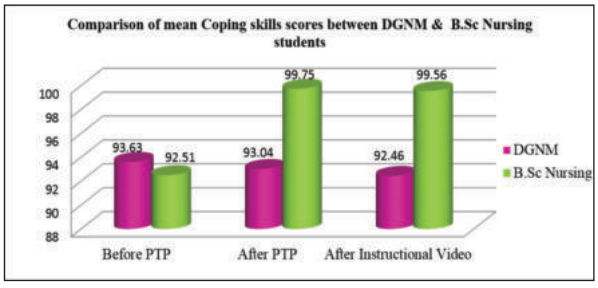

Fig. 9: Cylindrical diagram showing the comparison of mean Coping skills Scores between DGNM & B.Sc Nursing students

DISCUSSION:

1. Effect of PTP and Instructional Video in terms of gain in knowledge and coping skills and reduced level of anxiety regarding understanding and interpretation of young infant's communication patterns.

a) Mean post test knowledge scores (16.6, 17.52) in all the areas were higher than the mean pre test knowledge scores (11.83). Mean post test anxiety level scores (90.55, 86.52) were lower than the mean pre test anxiety level scores (94.4). Mean post test coping skills scores (95.53, 95.09) in all the areas were higher than the mean pre test coping skills scores (92.59). Gain in knowledge and coping skills score regarding understanding and interpretation of young infant's communication patterns was significant & not by chance. Null hypothesis rejected.

b) Study was supported for "increased knowledge and confidence level" with studies undertaken by:

i) Alden Dr. Kathy (2016) (PTP & Instructional Video) [10]

ii) Touger Gale, Mozafarinia Maryam (2013) [PTP] [11]

iii) Chaiwachiragompol Anyawee and Nattawoot Suwannata (2016) [CD- ROM (Dunstan Baby Language) as Instructional video] [12]

iv) Bryanton J, Beck CT, Montelpare W (2013) [PTP] [13]

v) Gladding ST (1979) [PTP] [14]

vi) Murtagh Hannah, Roberts Sally (2010) [DVD] [15]

2. Association between the knowledge, coping skills and anxiety level of Nursing students regarding understanding and interpretation of young infant's communication patterns with selected demographic variables

a) Significant association between the knowledge, anxiety level and coping skills scores of Nursing students with selected demographic variables like *nature of experience, institute from where undergoing training and feel adequately knowledgeable* at $p < 0.05$. Highly significant association with demographic variables like "past experience of caring a healthy young infant," "study about young infant's communication patterns," "ever provided any teachings to parents or anyone on how to understand and decode the various communication patterns used by the young infant's" with Knowledge, Anxiety & coping skills scores of Nursing students at p-value < 0.01. Null hypothesis rejected

b) Study supported by:

i) Al-Maadadi Fatima, Ikhlef Atmane (2014) [Marital Status – No significant association with knowledge, anxiety or coping skills] [16]

ii) Papoušek Mechthild (1989) [Nature of experience – significant association with knowledge] [17]

CONCLUSIONS:

i. There was significant gain in the knowledge and coping skills with sharp decline of anxiety level score of Nursing students who were given PTP. But marked change in the knowledge, anxiety level and coping skills score was seen when appended with Instructional Video.

ii. Interactive method of teaching with the help of PTP and Instructional video was an effective method of enhancing the knowledge and coping skills of the subjects under study.

iii. The results supported the General systems theory and the Child health assessment interaction model indicating that every individual has an innate ability to learn and cope/overcome efficiently, the deficiencies with reasonably fair confidence building strong nurse – baby interaction bond.

Implications: The findings of the study have valuable implications towards Nursing education, Nursing practice, Nursing administration and Nursing research with the aim to translate the evidence of this study into guidance which healthcare professionals can give to parents to help them make informed choices to manage the crying, unsoothable and fussy babies during early infancy.

The Nurse educators can use the result of the study as an informative illustration for imparting education in an effective way by imparting various informations, assisting the community in developing potentials and utilising the informatics.

Nursing practice requires a blend of the most current Knowledge and practice standards with an insightful and human approach to client care, so the researcher's generally integrate findings into practice which should be research based in order to meet the social challenges. Crying patterns and other behaviours associated with the various young infants communication patterns should be included in the nurse's assessment of infants from birth to six months. The strength of the nurses lies in the assessment of the infant and in providing guidance & support for parents and families related to the understanding and interpretation of the young infants communication patterns. In a right manner to reduce distress not only for themselves but also for the young infants.

The health care administrators should be able to motivate and initiate the health professionals in organising, conducting and participating in various educational programs that would contribute to better health care delivery system. There is a need for well established programmes to tackle the issues pertaining to the understanding and interpretation of the young infant's communication patterns. The hospital settings should have adequate facility to provide interventions, educating not only the parents but also catering to the growing demands of educating the other healthcare professionals and caregivers on the same.

Nursing research plays an essential aspect. There is scope in this area to prevent the further disastrous sequels to poor addressing of the needs

of the young infant's; by providing evidence based care in a cost effective way thus increasing the success of such interventions.

Recommendations:

1. A study can be done to assess the practices of Nursing students regarding the understanding and interpretation of young infant's communication patterns.
2. Similar study can be done to study the abnormal crying patterns.
3. Similar study can be replicated to a larger sample with a control group.

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Conflict of Interests: The author declares no conflict of interests.

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