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Literature Review Related to Academic Performance among Adolescents

Suvitha¹, S. Kamali², S. Kanimozhi³, M. Kathiyayani⁴, Kokkiligedda Madhuri⁵

How to cite this article:

Suvitha, S. Kamali, S. Kanimozhi et al. Literature Review Related to Academic Performance among Adolescents. Int J Pediatr Nurs. 2024;10(2):57-60.

Abstract

Academic achievement is regarded as a key life accomplishment, shaping prosperity, welfare, and security. Education is pivotal, influencing individual happiness, satisfaction, comfort, and overall well-being. Our study examines the correlation between mental health and academic performance in adolescents aged 17-21 (sample size: 300). Surprisingly, our findings indicate no significant relationship between mental health and academic performance. To enrich our research, we considered three Indian and four international reviews from reputable journals published between 2018-2023, identified through PubMed and Google Scholar, utilizing specific keyword search criteria. This exploration aims to contribute insights into the intricate interplay between mental health and academic success in the adolescent demographic.

Keywords: Academic Performance; Adolescents.

INTRODUCTION

cademic performance is the measurement of Astudent achievement across various academic subjects. Teachers and education officials typically measure achievement using classroom performance,

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graduation rates, and results from standardized tests. Academic performance during adolescence is integral, shaping future opportunities, fostering foundational skills, and impacting long-term career prospects. This period lays the groundwork for educational and career paths, instills discipline and work ethic, and contributes significantly to personal development. Strong academic achievements in adolescence enhance competitiveness, widening the spectrum of choices for higher education and career trajectories, setting the stage for a successful and fulfilling future.

Paul Ratanasiripong et al. (2022) conducted a quantitative study with the objective to assess the psychosocial factor that impacted the academic performance of nursing students. The research design adopted for the study is cross-sectional research design with sample size of 767 nursing college students. The tools used for the study is Counselling centre assessment of psychological symptoms-Thai (CCAPS-Thai), Rosenberg Self-esteem scale (RSES) and self-report overall

grade point average (GPA). The study concluded that familial and individual psychological dynamics (self-esteem, emotional negativity and substance abuse) influencing academic performance for nursing students.¹

Vandana Esht et al. (2023) conducted a study to evaluate the association among sleep quality, mental health, and academic performance among female students of the applied medical sciences college at the Jazan University who were aged between 18-25 within the Jazan region of Saudi Arabia. The research design is cross-sectional study a with a sample size of 84 students. The tools used for the study is Pittsburgh Sleep Quality Index (PSQI); Academic performance scale by Carson Birchmeier (APS) and Depression Anxiety Stress Scales-21 (DASS-21). According to the findings of the study, normal sleep quality is connected with lower levels of mental disorders and better academic achievement, whereas poor sleep quality is associated with higher levels of negative mental health and poor academic performance.²

Priyanshi jain (2023) conducted a quantitative study on effects of achievement motivation and academic procrastination and academic performance among the college students. The research design adopted for the study is correlation research design with sample size of 100 students. The tools for the study is Deo-Mohan Achievement Motivation Scale by Pratibha Deo (Pune) and Asha Mohan (Chandigarh); Academic procrastination scale by Dr Savita Gupta; Academic performance scale by Carson Birchmeier, Emily. Grattan, Sarah Hornbacher, Christopher Mc Gregory. The result shows that achievement motivation serves as a predictor for academic performance but academic procrastination does not serve as a predictor factor for academic performance. The correlations result shows that achievement motivation and academic performance are positive correlated, academic procrastination and academic performance are negatively correlated and achievement motivation and academic procrastination are also negatively correlated.3

Mesfin Tadese *et al.*, (2022) did a research to identify the determinants of good academic performance among University students in Ethiopia, research design is cross-sectional study with sample size of 659 students. The data was collected using a structured, self-administered questionnaire and cumulative grade point average (CGPA). A multistage sampling technique was applied to select study participants. Bivariable and multi variable data analysis were computed and a p-value (≤0.05) was considered statistically significant. The result shows that (66%) of students had a good academic performance. The study concluded that increased odds of good academic performance were observed among non-smokers, adults and medical/health science students, urban residence, government employees' family.⁴

Sandeep Lahiry *et al.* (2019) conducted a quantitative study with the objective to assess the pattern of social media usage among medical students and analyze self-perceived impact on academic performance and interpersonal relation at a tertiary medical center in Eastern part of India. The research design adopted for this study is a cross-sectional study with sample size of 650 students. The data was collected by self-prepared questionnaire. The research concluded that social media usage for academic purpose is high among medical and paramedical students. Students perceived social networking impact on academic performance was inconclusive (positive and negative in nearly equal measures, 45% each).⁵

Thenmozhi. P and D. Divya Bharathy (2019) conducted the qualitative research with the aim to relate the assertiveness with academic performance among arts and science college students. The research design used for this study is non-experimental descriptive study with sample size of 60 students. Tools used for this study are Assertiveness Scale and Academic Performance Scale. The result shows that (6.7%) where situationally assertive, (43.5%) where somewhat assertive, (50%) where assertive. In assessing the academic performance, students (38.3%) had good academic performance, (56.7%) had moderate performance and (5%) had poor performance. The study concluded that the lack of assertiveness among students which directly or indirectly affect their academic performance.6

Siti Nurhafizah Mohd Shafie *et al.* (2022) conducted a qualitative study with the objective to assess the association between lifestyle related behaviour and academic performance among students during the COVID-19 pandemic. The research design used for this study is cross-sectional study. The sample size is 281 students. The tool used for this study is self-prepared questionnaire. The result shows that poor diet, healthy diet and sleep hour statistically significant influence the student's academic performance, meanwhile other variables such as physical activity, screen time and body mass index as no significant impact on their academic performance.⁷

Agus Hariyanto et al. (2023) conducted a qualitative study with the objective to assess the correlation between physical activity and academic performance in University students. The research method used for the study is cross-sectional study with sample size of 377 University students. The tools used for the study are socio demographic variables, International Physical Activity Questionnaire (IPAQ), Grade Point Average (GPA). The results show that most of the students in this study practiced physical activity in moderate level (600-3000 mets/min/ week) and achieved good academic performance (64.6%). The study concluded that their is positive correlation between physical activity and academic performance among university students.⁸

Nipin Kalal et al. (2023) conducted a qualitative research with the objective to assess the smartphone addiction and its impact on quality of sleep and academic performance among the nursing students. The research design adopted for the study is cross-sectional study with sample size of 160. The tool used for the study was Smartphone Addiction Scale Short Version (SAS - SV), Pittsburg's Sleep Quality Index Scale (PSQI) and academic performance scale. The result shows that (388.1%) students were having moderate smartphone addiction. The study concluded that high proportion of nursing students have moderate smartphone addiction, this also associated with an increased risk of poor sleep quality and poor academic performance.9

Matheus dos Santos Fernandez et al. (2023) conducted a qualitative research with the objective to evaluate the factors associated with poor academic performance among undergraduate dental students in Brazil. The sample size is 244 students. The tools used for this study was semi-structured questionnaire (socio-demographic characteristics and Pittsburgh Sleep Quality Index) and Academic performance from institutional records. The result shows that (18.8%) had poor academic performance and also factors associated with poor academic performance was increased age, non-white skin colour, the use medication for anxiety and depression and poor sleep quality.¹⁰

CONCLUSION

From the above reviews it was concluded that majority of the adolescents exhibited moderate academic performance. Healthy habits such as maintaining regular sleep schedule, limited hours of mobile usage, non-smokers, balanced nutrition, regular physical activity, and effective stress management enhance cognitive function, focus, and overall well-being. Prioritizing these habits fosters an optimal environment for learning, supporting students in achieving their academic potential and maintaining overall health.

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A Study to assess the Knowledge, Attitude and Practices Regarding Oral Hygiene of Children (3-5 Years) among Mothers Visiting Paediatric OPD of a Selected Hospital of Ludhiana, Punjab

Mamta¹, Simranpal Kaur²

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Abstract

To maintain a good oral hygiene, both the parent and the child must work together. It is seen that poor attitude of parents generally reflect as a poor oral health in children and vice versa. Mother's oral hygiene knowledge and attitude influence oral hygiene of their children at an early age. The parents with proper oral hygiene knowledge and attitude are likely to positively influence their children's oral hygiene.

Aims: To assess the knowledge, attitude and practices regarding oral hygiene of children (3-5 years) among mothers.

Settings and Design: The study was conducted in Paediatric OPD of Dayanand Medical College and Hospital. Descriptive design was used in the study.

Methods and Material: A descriptive research design was used for present study. Convenience sampling technique was used to select a sample of 100 mothers. Structured questionnaire to assess knowledge, Likert scale to find out attitude and checklist to assess the practices were used as tools.

Statistical analysis used: The data was analysed using descriptive and inferential statistics. Pearson's correlation coefficient was used to assess the correlation between the variables and ANOVA test was used to find out the association between variables.

Results: The findings of present study revealed that 64% mothers had average knowledge regarding oral hygiene of children. 87% mothers have favourable attitude and 97% had satisfactory level of practices regarding oral hygiene of their children. The study reveals that there is positive correlation of knowledge with attitude and practices regarding oral hygiene among mother of children (3-5) years.

Conclusions: It is concluded that majority of mothers exhibited favourable attitude and satisfactory level of practices and have less knowledge regarding oral hygiene of children.

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Keyword: Attitude, Practice; Knowledge; Pediatric; OPD; Oral hygiene; Mothers.

INTRODUCTION

ral health is a key indicator of overall health, well-being and quality of life. It encompasses a range of diseases and conditions that include dental caries, periodontal (gum) disease, tooth loss, oral cancer, orodental trauma and birth defects such as cleft lip and palate.¹ Among different oral health problems, dental caries is one of the major problems in the world. In 2005, WHO reported 60-70% of school children worldwide have experienced dental caries. In India, the prevalence of caries among preschool children was found to be in the range of 40-70% in 2003.²

Dental caries has high prevalence, which varies from 49-83% across different countries.³ Dental knowledge and practices depend on mother's education and demographic inhabitation as research studies consider that mothers with higher education have a better knowledge about oral hygiene and how to modify their children's bad habits of oral health, like poor brushing habits, diet with high sugar intake, tooth decay, drink milk or sweet liquids at bedtime.⁴

Mother's oral hygiene knowledge and attitude influence oral hygiene of their children at an early age.^{5,6} The parents with proper oral hygiene knowledge and attitude are likely to positively influence their children's oral hygiene. For example: if the parent brushes his\her teeth twice a day, their children will also be positively influenced to brush their teeth twice a day. Children with poor oral habits are more prone to early childhood caries and may further more develop associated problems such as local infections, oral pain that also manifests as difficulty in sleeping and eating, reduced growth, increased risk of caries and psycho-social problems in permanent dentition.⁷

Globally, in children aged 3-6 years dental caries is categorized as major public health issue.⁸ It has been observed across various countries that the basic health care workers and parents have limited knowledge about causes and prevention of diseases.^{9,10} Out of 7.5 billion people residing on this planet, a whooping 2.3 billion reportedly suffer from dental caries of permanent dentition. In contrast, more than 530 million children suffer from caries affecting their primary dentition as proclaimed by global burden of disease study in 2017.^{11,12}

Parents need to increase the time children spend with them. Adoption of consistent behavioural habits takes place at home, with parents, especially mothers, being the primary model for the behaviour. Educating mothers on infant dental caries will provide lifelong good oral hygiene habits and will bring down the prevalence of oral diseases considerably. ¹³ It is mostly in children that quality of life is compromised. Severe dental caries which causes pain, discomfort, acute and chronic infections, disfigurement, disruption of sleep and eating habits, greater risk of hospitalization, increased treatment costs which ultimately lead to loss of school days diminishing their ability to learn. The presence of dental caries leads to insufficient nutrition intake, causing weight loss and thus deteriorating growth rate.^{14,15}

Although many studies have been carried out from time to time to assess the knowledge and behaviour of people about oral health, there is still a dearth of education regarding the same especially for rural people, who make up for more than 70% of population in India. Furthermore, even the people living in cities, in spite of having access to dental care, fall prey to dental caries and unhealthy lifestyle.¹⁶ Therefore, the present study was conducted to assess the knowledge, attitude and practices regarding oral hygiene of children (3-5 years) among mothers visiting paediatric OPD of a selected hospital of Ludhiana, Punjab.

MATERIALS AND METHODS

Descriptive research design was used for the study.

Convenience sampling technique was used to select a sample of 100 mothers.

The tool was divided into three parts as follows:

Section A:

Socio demographic profile.

- (i) Mother
- (ii) Child

It was a self-structured questionnaire. It consisted of socio-demographic characteristics of subjects of mother such as age, gender, occupation, habitat, marital status, type of family, religion, dietary pattern and socio-economic status plan.

Socio-demographic characteristics of subjects of child such as age, gender, schooling and sibling.

Section B:

A self-structured questionnaire to assess knowledge of mother regarding oral hygiene. It consisted of 24 questions.

Section C:

A self-structured three-point Likert scale related to assessment of attitude of mothers towards oral

hygiene. It consisted of 12 statements; out of which three statements were negative.

Section D:

A self-structured checklist to assess the practices of mother regarding oral hygiene. The self-structured questionnaire was developed. It consisted of 12 statements; out of which three statements were negative.

RESULTS

The findings of present study revealed that 64% mothers had average knowledge regarding oral hygiene of children. 87% mothers have favourable attitude and 97% had satisfactory level of practices regarding oral hygiene of their children. The study reveals that there is positive correlation of knowledge with attitude and practices regarding oral hygiene among mother of children (3-5) years.

 Table 1(a): Frequency Distribution of Socio-demographic

 variable of mothers of 3-5 years children

	N=100
Sociodemographic Variable of Mother	Frequency
Age*(in years)	
21-25	9
26-30	48
31-35	27
36-40	11
41-45	5
Education	
Illiterate/uneducated	3
Elementary	20
Secondary	30
Graduation and above	47
Occupation	
Non-working	69
Working	31
Habitat	
Urban	70
Rural	30
Type of family	
Nuclear	51
Joint	49
Religion	

Hindu	50
Sikh	45
Muslim	4
Christian	1
Dietary pattern	
Vegetarian	73
Non-vegetarian	23
Lacto-ova veg	4
Socio-economic status of the family (kuppu	iswamy scale)
Upper class	10
Upper middle class	45
Lower middle class	37
Upper lower class	4
Lower class	4

* Mean age of mother (in years) 30.94, 4.661

 Table 1(b): Frequency Distribution of Socio-demographic

 variable of children of 3-5 years

	N = 100
Socio-demographic Variable of Child	Frequency
Age* (in years)	
3	28
4	35
5	37
Gender	
Male	59
Female	41
Schooling	
Private	78
Government	22
Siblings	
Yes	49
No	51

*Mean age of child (in years) SD = 4.09 0.805

Table 2: Mean and mean percentage distribution of mothers as per their level of knowledge regarding the oral hygiene of children

			11-100			
Level of knowledge	Ν	Mean	Mean %			
Below average	5	5	83.30%			
Average	64	10.49	87.40%			
Good	30	14.6	81.10%			
Excellent	1	19	79.10%			
Maximum score of knowledge = 24 Minimum score of knowledge = 00						

Table 3: Mean and mean percentage distribution of mothers as per their level of attitude regarding the oral hygiene of children

			N =100	
Level of attitude	Ν	Mean ± S.D	Mean %	
Unfavourable	13	23.38 ± 3.357	97.41%	
Favourable	87	30.20 ± 2.602	83.8%	
Maximum score of a	ttitude = 36			
Minimum score of attitude = 12				

Table 4: Mean and mean percentage distribution of mothers as per their level of practices regarding the oral hygiene of children

			N=100	
Level of practices	Ν	Mean ± S.D	Mean%	
Unsatisfactory	3	5.00 ± 0.00	83.3%	
Satisfactorty	97	9.73 ± 1.82	81.0%	

Maximum score of practice =12

Minimum score of practice = 00

 Table 5: Rank wise distribution of components of self-structured knowledge questionnaire for assessment of knowledge regarding oral hygiene.

 N=100

				N=100		
Components	Maximum score	Mean ± S. D	Mean%	Rank		
Teething	5	2.71 ± 1.139	54.2%	1		
Brushing technique	10	4.97 ± 1.731	49.7%	2		
Hygiene	9	3.79 ± 1.387	42.7%	3		
Maximum knowledge score =24 Minimum knowledge score = 00						

Table 6: Correlation between knowledge and attitude regarding oral hygiene of children among mothers of 3-5 year old children

					N=100
Variable	Mean ± S.D	Mea	n%	r-value	p-value
Knowledge score	11.48 ± 2.986	47.8	83	0.257	0.010*
Attitude score	29.59 ± 2.954	82.1	19	0.257	0.010"
Maximum knowledge score= 24					
Minimum kno	owledge score =	= 00	*signi	ficant at th	e level of
Maximum att	itude score = 36	, ,	p ≤ 0.	005	
Minimum attitude score = 12					

 Table 7: Correlation between knowledge and practices regarding oral hygiene of children among mothers of (3-5 year) old children

 N=100

				14-100
Variable	Mean ± S. D	Mean %	r-value	p-value
Knowledge score	11.48 ± 2.986	47.83	0.227	0.022*
Practice score	09.59 ± 1.975	79.91	0.227	0.025
Maximum knowledge score = 24 Minimum knowledge score = 00 Maximum attitude score = 12 Minimum attitude score = 00			nificant at tl p≤0.00	ne level of)5

 Table 8: Depicting association of knowledge, attitude and practice of mothers regarding oral hygiene with selected socio

 demographic variable

							N=100
X7 1.1.		Knowledge score		Attitude	e score	Practice score	
variables	IN	Mean S.D	F/p	Mean S.D	F/p	Mean S.D	F/p
Age of Mother							
21-25	9	9.77 ± 3.456	F= 1.621	29.11 ± 2.420	F=0.655	9.55 ± 1.509	F=0.710
26-30	48	11.27 ± 3.337		30.04 ± 2.953		9.54 ± 2.123	
31-35	27	11.66 ± 2.236	0.155	29.00 ± 3.100	0.405	9.66 ± 2.130	0 505
36-40	11	12.54 ± 1.634	p=0.175	29.72 ± 3.133	p=0.625	10.18 ± 1.470	p= 0.587
41-45	5	13.20 ± 3.563		29.00 ± 3.000		8.40 ± 1.140	
Education							
Illiterate	3	9.00 ± 3.606	F=3.863	27.66 ± 2.516	F=0.626	8.00 ± 2.000	F= 1.692
Elementary	20	9.95 ± 2.724		29.20 ± 2.546		9.00 ± 2.406	
Secondary	30	11.50 ± 2.825	P=0.01*	29.73 ± 3.268	p=0.600	9.96 ± 1.809	p= 0.174
Graduation and above	47	12.78 ± 2.910		29.78 ± 2.955		9.70 ± 1.828	

Table Cont. . .

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Occupation							
Non-working	69	11.17 ± 2.869	F= 0.123	2.93 3.028	F=0.478	9.39 ± 2.094	F= 3.798
Working	31	12.16 ± 3.174	t= 0.726	30.12 2.709	t= 0.491	10.03 ± 1.622	t=0.050*
Habitat							
Urban	70	11.81 ± 3.033	F= 0.666	29.82 3.04	F=0.977	9.74 1.831	F= 4.454
Rural	30	10.70 ± 2.76	t= 0.416	29.03 2.709	t= 0.325	9.23 2.269	t=0.037*
Type of family							
Nuclear	51	11.82 ± 3.186	F=1.056	29.49 ± 2.887	F= 0.009	9.56 ± 2.042	F= 0.197
Joint	10	11.12 ± 2.75		00 (0 ; 0 040		0.41.4.000	
	49	t= 0.307	t= 0.307	29.69 ± 3.049	t= 0.923	9.61 ± 1.923	t= 0.658
Religion							
Hindu	50	11.52 ± 3.209	F= 0.343	29.62 ± 3.142	F= 0.320	9.30 ± 2.224	F= 1.058
Sikh	45	11.56 ± 2.519		29.55 ± 2.607		9.82 ± 1.682	
Muslim	4	10.00 ± 5.477	p= 0.799	30.25 ± 4.923	p= 0.811	10.75 ± 1.500	p= 0.371
Christian	1	12.00 ± 0.000		27.00 ± 0.000		9.00 ± 0.000	
Dietary Pattern							
Vegetarian	68	11.38 ± 3.172	F= 0.131	29.72 3.109	F=0.524	9.47 2.112	F= 0.412
Non-vegetarian	15	11.80 ± 2.908	0.077	28.86 2.972	0.054	9.93 1.869	0.442
Lacto-ova	17	11.59 ± 2.347	p=0.877	29.70 2.284	p=0.954	9.76 1.480	p= 0.663
Socio-economic status							
Upper class	62	11.44 ± 0.407	F= 0.123	29.70 ± 3.335	F= 0.581	9.00 + 2.000	F= 0.374
Upper middle class	15	2.908 ± 0.751		29.71 ± 2.881		9.66 ± 1.770	
Lower middle class	17	2.347 ± 0.569	0.074	29.37 ± 2.88		9.62 ± 2.138	0.007
Upper lower class	3	4.041 ± 2.333	p= 0.974	28.25 ± 3.862	p= 0.677	9.25 ± 3.095	p= 0.827
Lower class	3	2.646 ± 1.528		31.25 ± 3.403		10.25 ± 2.061	
Age of child							
3	28	10.85 ± 3.352	F= 1.637	29.21 3.644	F=0.382	9.67 ± 2.294	F= 0.247
4	35	12.17 ± 3.231	0.000	29.60 ± 2.83	0.604	9.40 ± 1.752	0 700
5	37	11.29 ± 2.331	p= 0.200	29.86 ± 2.507	p= 0.684	9.70 ± 1.955	p=0.782
Gender of child							
Male	59	11.66 ± 2.557	F= 1.839	29.69 ± 3.047	F= 0.460	9.72 ± 1.779	F=2.916
Female	41	11.21 ± 3.52	t= 0.178	29.43 ± 2.846	t= 0.499	9.39 ± 2.234	t=0.091
Schooling							
Playway	30	11.70 ± 2.680	F= 1.425	30.16 ± 3.444	F=1.167	9.83 ± 1.464	F= 1.007
Anganwadi	15	10.06 ± 3.769		28.73 ± 2.814		8.80 ± 2.624	
Private school	48	11.66 ± 2.890	p= 0.240	29.35 ± 2.669	p= 0.327	9.64 ± 1.983	p=0.039*
Government school	7	12.28 ± 2.751		30.57 ± 2.699		9.85 ± 2.267	
Sibling							
Yes	49	11.30 ± 2.631	F= 1.455	29.14 ± 2.993	F=0.104	09.67 ± 1.818	F= 1.683
No	51	11.64 ± 3.309	t= 0.231	30.01 ± 2.880	t= 0.748	09.50 ± 2.129	t= 0.198

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Mamta, Simranpal Kaur. A Study to Assess the Knowledge, Attitude and Practices regarding Oral Hygiene of Children (3-5 Years) among Mothers Visiting Paediatric Opd of a Selected Hospital of Ludhiana, Punjab

DISCUSSION

Discussion of the findings of this study has been done in accordance with the analysis and interpretation and the major findings of the present study with other studies conducted in different settings under following sections:

The first major finding shows that majority (64) of mothers had average level of knowledge with mean percentage of 87.4%, followed by less than one third of mothers (30) had good level of knowledge with mean percentage of 81.1%. Findings of the study are supported by a study conducted by Suresh BS. et al. (2010) to assess mother's knowledge about preschool child's oral health, which revealed that majority of mothers had (73.8%) good knowledge regarding oral hygiene of children. The major findings of present study reveals that the correlation between knowledge and attitude score was found to be weakly positive correlation (r = 0.257). Statistically the value was found to be significant (p = 0.010). On the contrary, in a study conducted by Shalini, et al. (2019) the finding of the study revealed that there is negative correlation between the knowledge and attitude of mothers regarding oral hygiene of under five children (r=0.06). The findings of the present study reveal that the correlation between knowledge and practice score was found to be weakly positive (r = 0.227). The value was found to be statistically significant (p = 0.023) and in support of this finding, in a study conducted by Blessy Mohandass et al. to assess knowledge and practice among rural mothers regarding oral hygiene of children, it was found that there was a weak positive correlation (r = 0.119) between knowledge and practice which was not significant.

The study reveals that the association of practices with selected socio demographic variables found to be statistically significant (p= 0.037) mothers who are living in urban habitat. Another finding was (p= 0.050) in which mother who were working has statistically significant and supporting this is a study to analyze data from a large random sample of 392 mothers living in Menoua Governorate, Shebeen Elkom district by Eslam M Konsowa et al. (2020), for the purpose of evaluating the knowledge, attitude, and practice regarding their children's oral health. It was found that association of knowledge with selected socio demographic variables was found to be statistically significant with educational status of mothers having graduate level education and above. The study reveals that the association of practices with selected socio demographic variables found to be statistically significant mothers who are living in urban habitat and mothers who were working has statistically significant.

CONCLUSION

From the findings of study, it is concluded that majority of mothers have favorable attitude and satisfactory level of practices and having less knowledge regarding oral hygiene of children.

Conflict of Interest: Nil

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Effect of Video-Assisted Teaching on Knowledge Regarding Menstrual Hygiene among Girls in Selected Schools

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Abstract

Introduction: The onset of menstruation denotes the landmark event in pubertal development of adolescent girls. It is essential to ensure that the school girls have enough and proper understanding about the hygiene to be maintained during menstruation. A poor knowledge in this aspect may lead to unsafe practices that in turn increase the chances of various Reproductive Tract Infections in the future, leaving risks of far reaching consequences on the wellbeing, dignity and overall health.

Aim: The present study was conducted to assess the effect of Video Assisted Teaching on knowledge regarding menstrual hygiene among girls in selected schools, Kannur District.

Methods: A descriptive & evaluative study, using a self administered questionnaire was conducted. The sample consisted of 234 school girls in classes 5, 6 and 7 in selected schools of Kannur district aged 10-13 years, selected through convenient sampling technique. A structured knowledge questionnaire was used to collect the data. The data were analyzed using descriptive and inferential statistics on the basis of objectives of the study.

Results: The results of the study depicted that there is an increase in the mean scores of knowledge in post test (16.51), than the pre test (12.07), which means that the Video Assisted Teaching was effective.

Discussion: The study conducted among school girls in selected schools revealed that there is lack of knowledge regarding menstrual hygiene among school girls. It is a shocking fact that the girls do not have enough knowledge regarding the most important physiological process of the human female reproductive system. It is the need of the hour to take necessary steps to impart the essential knowledge to the adolescents through various media.

Keyword: Menstrual hygiene; Video Assisted Teaching; Knowledge; School girl.

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INTRODUCTION

enstruation is a normal physiological process in females at their reproductive age. Menarche is an important biological milestone in a woman's life as it marks the onset of reproductive phase of her life. Menstrual hygiene management is defined as women and adolescent girls using a

clean menstrual management material to absorb or collect blood that can be changed as often as necessary for the duration of menstrual period using soap and water for washing body as required and having access to facilities to dispose of used menstrual management material.¹

A cross-sectional descriptive study was carried out to assess the knowledge and practices of menstrual hygiene among adolescent school girls in rural and urban field practice area of Raja Rajeswari Medical College Hospital, Bangalore, India from November 2013 to March 2014. The sample size of 190 is obtained in each group from rural and urban schools that were randomly selected. Convenient sampling was used to select the samples from the schools. A pre-designed, pre-tested questionnaire was used to collect data and the same was analyzed using Chi square test and Fisher exact test. The results showed that mean age of urban girls was 12. 87, whereas of rural girls was 12.85. majority (59. 6%) of the urban girls and 29.25 of the rural girls had the source of information regarding menstruation was mothers and family members before attaining menarche, whereas majority (55.85%) of rural girls and 30.7% of urban girls were aware about the source of information was school teacher. It was observed that 59.5% of the adolescent girls were aware about menstruation before attaining menarche, 62.4% of them knew that it was a normal physiological process. Data also revealed that 55.3% of urban girls and 52.6% of rural girls had dysmenorrhoea during menstruation, followed by 27.9% of urban girls and 32.1% of rural girls had backache. Majority (87.9%) of rural girls and 67.4% of urban girls had food taboos. Around 67.45 of urban girls and 50.5% of rural girls used sanitary pads. The researchers concluded that the knowledge and practices regarding menstrual hygiene among adolescent girls is better in rural area compared to urban area.²

Need for the study

cross-sectional А descriptive study was undertaken to find out the prevalence of adequate menstrual hygiene practices among school-going adolescent girls and to find out common problems faced by them. The study was conducted among 302 adolescent girls, aged between 13-19 years, in school of Kanpur, Nagar, selected by convenient sampling. A pre-tested printed questionnaire was used to collect data and it was analyzed using SPSS. The results depicted that the mean age of menarche was 13.23 years and the mean age of samples was 15.69. Nearly 96.68% of the girls used sanitary pads

whereas 3.31% used clothes. About 70.19% of them changed their absorbent material less than two times a day. Around 22.85% of them had dysmenorrhoea, followed by irregular periods in 12.91%, mood swings in 10.93%, and itching in genitalia for 7.95%. Most (98.34%) of them washed their hands with soap and water while only 2.31% didn't wash their perineum after changing pads. The researchers concluded that the knowledge of school-going girls regarding menstrual hygiene was satisfactory due to various Government schemes like MHM.³

A cross-sectional questionnaire based study was conducted in Sharda Vidyalaya in Hyderabad in August 2015, to assess the knowledge and practices of menstrual hygiene among rural and urban school-going adolescent girls. Two hundred and sixty three adolescent girls in the age group of 13-16 years were included in the study, selected using convenient sampling. Data were collected using a pre-designed, pre-tested semi-structured questionnaire and the same were compiled and analyzed using Epi Info[™] Version 3.5.1. The results revealed that 58.5% of the girls were aware of menstruation before menarche from different sources like grandmothers, friends, sisters and mothers. Most (85.9%) of them was not aware of the cause of bleeding, only 8.3% knew about the source of menstrual bleeding is uterus and 67.6% knew that it's a natural phenomenon. The data on practices during menstruation revealed that 91.2% of the girls used sanitary pads, 6.8% used clothes and 1.9% used tampons. About 5.3% of the girls changed the absorbent materials once a day, 17.1%, twice a day, 49.15, thrice a day and 28.5% of them changed four times a day. The researchers concluded that the menstrual hygiene knowledge among adolescent girls is poor and the hygiene practiced is often not optimal. The girls should be educated about the facts of menstruation and development of secondary sexual characteristics and also proper hygienic practices during menstruation.⁴

The challenges that menstruating girls and women face encompass more than a basic lack of supplies or infrastructure. While menstruation is a normal and healthy part of life for most women and girls, in many societies, the experience of menstruators continues to be pathetic by cultural taboos and discriminatory social norms. This results in lack of information about menstrual hygiene, thus leading to unhealthy and unsafe practices, which can even cause severe consequences in their future life. It should be viewed as the responsibility of everyone to support the women and girls during their periods. Research has shown that approaches that can effectively combine information and education with appropriate infrastructure and menstrual products, in a conducive policy environment, are more successful in avoiding the negative effects of poor menstrual hygiene management. In short, a holistic approach is needed with collaborative & multi-dimensional responses.¹

Problem statement

Effect of video-assisted teaching on knowledge regarding menstrual hygiene among girls in selected schools, Kannur district, Kerala.

The objectives of the study are to;

- Assess the knowledge of menstrual hygiene among schoolgirls.
- Administer video assisted teaching on menstrual hygiene.
- Assess the efficacy of video assisted teaching on menstrual hygiene.
- Associate between knowledge & selected demographic variables.

Hypotheses

All hypotheses will be tested at 0.05 level of significance

- **H**₁: There will be significant difference between the mean pre test and post test knowledge scores on menstrual hygiene among the school girls.
- **H**₂: There will be significant association between the pre test knowledge and selected demographic variables.

Assumptions

The study assumes that:

- Girls will have average knowledge regarding menstrual hygiene.
- Menstrual hygiene practices of girls will be directly related to their knowledge regarding menstrual hygiene.
- The video assisted teaching will improve the knowledge of school girls.
- Improved knowledge will lead to better practices of menstrual hygiene.

MATERIALS AND METHODS

Research Approach

A descriptive and evaluative approach was adopted for this study to assess the effect of Video Assisted Teaching on knowledge regarding menstrual hygiene among girls in selected schools in Kannur district.

Research design

Pre-experimental one group pre-test post-test design (O1 X O2) was adopted for this study.

Setting of study

The present study was conducted in selected upper primary schools, Taliparamba, Kannur.

Variables

In this study, independent variable was Video Assisted Teaching on menstrual hygiene, dependent variable was the knowledge of school girls regarding menstrual hygiene and the extraneous variables were age, year of study, religion, place of residence, education and occupation of father & mother and previous knowledge of the girls regarding menstruation and menstrual hygiene.

Sample and sampling technique

The sample in this study consists of 234 school girls in selected upper primary schools, selected through convenient sampling technique.

Inclusion criteria

- Upper primary school girls who were aged between 10-13 years of age
- Girls of classes 5, 6 and 7
- School girls who attained menarche
- School girls who were available at the time of data collection and during the video assisted teaching

Exclusion criteria

- Upper primary school girls who are not in the age group of 10-13 years
- Upper primary school girls who have not attained menarche
- School girls who were not available at the time of data collection and during the video assisted teaching

Description of the tool

Part A: Baseline characteristics, consisted of 10 items, related to the baseline characteristics of the school girls.

Part B: Preliminary assessment, that included certain aspects of menstrual cycle like the age at menarche, presence of dysmenorrhoea, duration of bleeding and the type of absorbent material used during menstruation.

Part C: Structured knowledge questionnaire, consisted of 20 items, covering the following areas; definition, importance and phases of menstrual cycle and menstrual hygiene and its various aspects. Each correct answer was given a score of 1 and the total score was 20.

RESULTS

Preliminary assessment details

All the girls who participated in the research had attained menarche. Regarding age at menarche, more than half (50.42%) attained menarche at 11

years of age, whereas 32.5% at 12 years. About 15. 38% of them attained menarche at 10 years and very little proportion (1.7%) attained at 13 years. Among the 234 girls, majority (61%) experienced dysmenorrhoea and 39% didn't have any pain during menstruation. Regarding duration of menstrual bleeding, most (72.2%) of the samples had 4-6 days of bleeding while 24.4% had more than 6 days. Very little proportion (3.4%) had bleeding less than 3 days. Among the study samples, most (91.9%) of the girls used sanitary napkins while 4.7% used clothes. Among the girls, only 2.13% used menstrual cups and 0. 85% used both clothes and napkins. Very little percentage (0.42% 0 used tampons.

Table 1: Comparison of grading of pre test - post test knowledge scores of school girls on menstrual hygiene

Grading	Pre	Pre - test		- test
	Frequency	Percentage	Frequency	Percentage
Poor	6	2.6	0	0
Average	56	23.9	5	2
Good	147	62.8	57	24
Very good	25	10.7	172	74



Fig. 1: Comparison between pre and post-test knowledge on menstrual hygiene

Data in the above diagram depict the effectiveness of Video Assisted teaching on knowledge of school girls regarding menstrual hygiene manifested by post test knowledge scores of the girls. Pre-test revealed that there were 2.6% of subjects with poor knowledge while in post test; there was none having poor knowledge. In pre-test, 10.7% had very good knowledge which increased to 74% in post test.

Table 2: Range, mean, median and standard deviation of pre and post test knowledge scores of school girls regarding menstrual hygiene

N÷	=234
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N=234

Knowledge level	Range	Mean	Median	Standard deviation
Pre-test	03 - 19	12.07	12	2.858
Post-test	08 - 20	16.59	17	2.471

Maximum score - 20

Data in the above table show that the range, mean, median and standard deviation of pre-test knowledge scores were 03-19, 12.07, 12 and 2.858 respectively. The mean knowledge score in the post test was increased to 16.59 and standard deviation to 2.471 with a post test knowledge score range of 08–20.

Table 3: Mean, mean difference, standard deviation and't' value of pre and post test knowledge scores of school girls on menstrual hygiene

							N=234
Group	roup Mean knowledge score Me differ		Mean difference	Mean Standard dev difference		tandard deviation 't' value	
	Pre test	Post test		Pre test	Post test		
School girls	12.07	16.59	4. 52	2.858	2. 471	18.28	0.00
t ₍₂₃₃₎ =1.61;	p<0. 05					*5	significant

The significance of difference between the mean pre test and post test knowledge scores were analyzed using paired 't' test. The following null hypothesis was formulated to test the significance.

 H_{01} : There will be no significant difference between the mean pre-test & post-test knowledge scores of the school girls regarding menstrual hygiene at 0. 05 level of significance.

Data in the above table describe that the mean pre test knowledge score was 12.07. In the post test, there was a significant gain as denoted by the mean knowledge score 16.59. The computed 't' value ($t_{233} = 18.28$) is greater than the table value ($t_{233}=1.61$) at 0.05 level of significance. Hence, the null hypothesis was rejected and the research hypothesis was accepted, and it was inferred that the mean difference between pre and post test knowledge scores was statistically significant. This indicated that the Video Assisted teaching was effective in increasing the knowledge of school girls on menstrual hygiene.

 Table 4: Association between pre-test knowledge scores and selected demographic variables

Variable	df	Chi square value	Inference
Age	2	8.72	Significant
Year of study	4	0.022	Not significant
Religion	3	0.001	Not significant
Place of residence	3	0.391	Not significant
Education of parents	4	11.34	Significant
Occupation of parents	4	1.002	Not significant
Previous knowledge	2	9.054	Significant
Source of information	2	0.042	Not significant

To test the association between the two, the following null hypothesis was formulated.

H₀₂: There will be no significant association

between the pre test knowledge scores and selected demographic variables (age, year of study, religion, place of residence, education and occupation of father and mother and previous knowledge of samples regarding menstruation and menstrual hygiene).

Data in the above table depicts that there was no significant association between pre test knowledge scores and selected demographic variables like year of study df(4)=9.49, calculated value = 0.022, religion df(3) = 7.81, calculated value = 0.001, place of residence df(3) = 7.81, calculated value = 0.391, occupation of parents df(4) = 9.49, calculated value = 1.002 and source of information df(2) = 5.99, calculated value = 0.042 except demographic variables like age of the subjects df(2) = 5.99, calculated value = 8.72, education of parents df(4) = 9.49, calculated value = 11.34, and previous knowledge df(2)= 5.99, calculated value = 9.054. Therefore, the null hypothesis was rejected and the research hypothesis was accepted.

DISCUSSION

The results obtained from the study helped the researchers to drive certain implications for nursing profession. This study emphasizes the need of health education and awareness sessions on menstrual hygiene to school children. Nursing students can also educate and impart information on the subject during their clinical and community practical. Nurses as administrators can play a vital role in the education of the public regarding the importance of menstrual hygiene and the ill effects of poor hygiene. The findings of the study have a great scope in the field of research and based on the recommendations, further studies can be undertaken. Practicing nurses are at greater scope to impart education and demonstrate care to the wide variety of people they meet daily. They can provide direct care to people of various age groups and make them aware about the need of proper menstrual hygiene.

CONCLUSION

Menstrual hygiene management (MHM) is essential to the wellbeing and empowerment of adolescent girls. On a given day, more than 300 million women worldwide are menstruating as per a WHO report. In total, an estimated 500 million lack access to menstrual products and adequate facilities for menstrual hygiene management. To effectively manage their menstruation, girls need access to water, sanitation and hygiene facilities, affordable and appropriate menstrual hygiene materials and above all, clear and proper information on good and safe practices and a supportive environment where they can manage the situation without embarrassment & stigma.¹

Ethical clearance: The ethical clearance of this study was obtained from the Institutional Ethical Committee (IEC) of Lourde College of Nursing.

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Retinopathy of Prematurity (ROP): Current Management Strategies

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Abstract

Worldwide, retinal deficiency of prematurity, or (ROP), continues to be a major cause of blindness and visual impairment in preterm infants. Control efforts face substantial obstacles as the frequency of ROP and its associated visual impairment continue to rise in some locations despite breakthroughs in newborn child care. The objective of this article is to present a summary of the current understanding of ROP, including risk factors, screening recommendations, pathophysiology, and therapy approaches. Premature children, especially those delivered before 32 weeks of pregnancy or weighing less than 1500 grammes at birth, are more susceptible to ROP because of aberrant retinal vascular development in these cases. ROP is influenced by a number of risk factors, which can include low birth weight, prolonged oxygen therapy, and systemic disorders. For the proper early detection and treatment of ROP, timely screening with retinal examination is essential. Surgical intervention in severe cases, anti-vascular endothelial growth factor (anti-VEGF) injections, laser therapy, and observation are among the management techniques for ROP. The results for newborns with ROP have improved thanks to developments in ophthalmology and neonatal care; yet, issues like longterm follow-up and access to care still need to be resolved.

Keyword: Retinopathy of Prematurity, premature infants; Incomplete vascularisation; Hypoxia; VEGF; Retinal Detachment; visual impairment.

INTRODUCTION

Premature newborns are the main target of Retinopathy of Prematurity, a proliferative vitreoretinopathy. There are more babies at risk of ROP globally, particularly in middle-income

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nations, as early deliveries rise and survival rates rise as a result of advancements in newborn care. The retinal vasculature in these premature baby's eyes is still developing, exposure of preterm low birth weight newborns to high concentrations of oxygen exceeding 40% is likely linked to the development of retrolental fibroplasia, often known as retinopathy of prematurity. The disease can be stopped in its tracks at any point. Using indirect ophthalmoscopy, the eyes of all newborns who have received supplemental oxygen and were born at or before 32 weeks gestational age or weighing 1.5 kg or less should be checked for ROP.

Epidemiology

ROP is now known to be the main cause of childhood blindness, having been originally reported in 1942. ROP affects 14,000–16,000 preterm infants in the United States each year, according to data from the National Eye Institute. Every year in the USA, ROP causes about 4001600 newborns to become legally blind.

India accounts for about 23.4% of the world's 14. 8 million preterm births per year. Preterm babies survive at a higher rate thanks to the growth and advancement in neonatal care. Retinopathy of prematurity (ROP) is a vaso proliferative retinal illness that can cause blindness in these babies and is more likely to occur in them. ROP treatment is required for about 5000 of the 490,000 preterm children born in India each year with a GA of less than 32 weeks.

In order to build a network of early intervention centres at the district level, Maharashtra's public private partnership (PPP) model was developed through cooperation between the state government, non-governmental organisations, and private service providers. The relevance of primary health care providers in raising parental awareness and enhancing compliance was also brought to light by the experiment. As a result of better coordination between the government and the mentor institute, Odisha state was able to decentralise the project in its entirety and accomplish sufficient infrastructure development and capacity building.

Risk Factors

- 1. Maternal age: Advanced maternal age has been associated with various adverse outcomes including miscarriage, intrauterine growth restriction, preterm births and chromosomal abnormalities. Multiple studies showed increased incidence with increasing maternal age, decreased incidence with increased maternal age.
- 2. **Prematurity:** Currently recognised as the two greatest risk factors for the development of ROP are birth weight and gestational age. The incidence of ROP is higher in infants born before 32 weeks of pregnancy or weighing less than 1500 grammes at birth.
- **3. Oxygen:** Among the most often recognised risk factors for treatment requiring ROP are the use of supplemental oxygen, oxygen concentration, duration, and prolonged mechanical ventilation. Elevated oxygen levels and variations in oxygen saturation are independent risk factors for severe ROP. An increased risk factor for any severe ROP is extended mechanical breathing.

- 4. Anaemia, prolonged mechanical ventilation, respiratory distress syndrome, and variations in oxygen levels are additional risk factors.
- 5. **Pregnancy-related hypertension disorders:** preeclampsia and eclampsia are important risk factors for recurrent obstetric problems (ROP).
- 6. Maternal diabetes mellitus: This condition might affect the development of ROP directly (because of hyperglycemia's elevated retinal vascular endothelial growth factor) or indirectly (due to its link with respiratory distress syndrome).
- 7. Maternal age: Growing older mothers are more likely to experience miscarriages, intrauterine growth restriction, preterm deliveries, and chromosomal abnormalities, among other unfavourable consequences. Many research indicated that as maternal age grew, the incidence either reduced or increased.

Pathophysiology

The pathophysiology of ROP involves several key stages and factors:

- > Prematurity and Incomplete Vascularization
 - *Normal Retinal Development:* In a full-term infant, retinal vascularization progresses from the optic nerve head outwards to the periphery, completing by about 40 weeks of gestation.
 - *Premature Birth:* When a baby is born prematurely, this vascularization process is incomplete, leaving parts of the retina avascular (lacking blood vessels).

> Hyperoxia and Vaso-obliteration

- *Oxygen Therapy:* Preterm infants often require supplemental oxygen, which can lead to hyperoxia (high oxygen levels in the blood).
- *Vaso-obliteration:* High oxygen levels inhibit vascular endothelial growth factor (VEGF), essential for blood vessel growth. This inhibition causes the regression or obliteration of existing retinal blood vessels.

> Hypoxia and Vaso-proliferation

• *Phase of Hypoxia:* As the infant's oxygen levels are normalized, the avascular regions of the retina become hypoxic (low oxygen levels), triggering a pathological response.

• *VEGF Surge:* Hypoxia stimulates an overproduction of VEGF, leading to the formation of abnormal, fragile new blood vessels (neovascularization).

> Pathologic Angiogenesis and Fibrosis

- *Abnormal Vessels:* The newly formed blood vessels are prone to leakage and do not form normal vascular networks. They can extend into the vitreous, the gel-like substance filling the eye.
- *Fibrovascular Proliferation:* Alongside neovascularization, fibrous tissue can also form, leading to fibrosis.
- Retinal Detachment and Vision Loss
 - *Traction:* The abnormal blood vessels and fibrous tissue can exert traction on the retina.
 - *Retinal Detachment:* This traction can cause the retina to detach from the underlying tissue, leading to severe vision impairment or blindness if not treated promptly.

CLASSIFICATION

Table 1: International classification of retinopathy of prematurity

Stage	Features
Stage IA	Demarcation line between the vascularized and avascular retina.
Stage IIA	Ridge in place of the line.
Stage IIIA	Ridge plus extraretinal fibrovascular tissue.
Stage IVA	Subtotal retinal detachment. Phase I – when macula is spared. Phase II – when macula is involved.
Stage V	Total retinal detachment

Diagnosis and Screening

For prompt intervention and visual loss prevention, an early diagnosis of ROP is essential. exams should begin about 4-6 weeks after birth and continue until retinal vascularization is complete or the risk of retinal ophthalmoscopy has passed, according to screening guidelines. To evaluate the growth of the retinal blood vessels and spot any indications of ROP, ophthalmologists do routine eye exams.

TREATMENT OPTIONS

Depending on the severity and stage of the disease, there are many treatment options for ROP.

The following are the main forms of treatment:

Observation

• Stages 1 and 2: These are the milder stages of ROP, which frequently don't need medical attention right away and can go away on their own. To make sure the issue doesn't worsen, it must be regularly monitored with eye exams.

Laser Therapy

- *Stage 3:* Photocoagulation, or laser therapy, is frequently used to treat Stage 3 ROP. By burning and sealing the retina's borders with laser beams, this procedure stops the growth of aberrant blood vessels that could otherwise lead to retinal detachment.
- *Procedure:* It is usually carried out at a hospital or speciality eye clinic while under anaesthesia.

Cryotherapy

- *Stage 3:* Another method for treating Stage 3 ROP is cryotherapy, which involves applying extremely cold temperatures to the retina to cause scarring. This aids in halting aberrant blood vessel expansion.
- *Procedure:* Cryotherapy is done under anaesthesia, just like laser therapy.

Anti-VEGF Injections

- *Stages 3 and 4:* Anti-vascular endothelial growth factor (anti-VEGF) injections administered intravitreal are used to prevent the formation of aberrant blood vessels. One such medicine is bevacizumab (Avastin).
- Procedure: These injections can be used either alone or in combination with laser therapy, and they are given straight into the eye.

Surgical Intervention

- *Stage 4 and 5:* Surgery might be required in severe situations (Stages 4 and 5) where there is a partial or complete retinal detachment.
- *Scleral Buckling:* The detached retina is gently pushed back into place during this surgery by wrapping a silicone band around the eye.
- *Vitrectomy:* To reconnect the retina, the vitreous gel that fills the eye is removed during this procedure and replaced with a saline solution or gas bubble.

Follow-Up and Long-Term Care

- 1. Regular follow-up checks are necessary for infants receiving ROP treatment to assess their visual progress and make sure no issues or recurrences occur.
- 2. Children who have visual impairments or other disorders related to their eyes may require further treatments or interventions as they get older.

Prevention and Screening

- 1. Preterm Birth: Reducing the incidence of ROP mostly involves preventing preterm birth through appropriate prenatal care.
- 2. Screening: For early detection and prompt treatment, routine eye exams are essential for premature newborns. These examinations should begin 4-6 weeks after delivery or before the infant reaches the postmenstrual age of 31 weeks.

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Case Report On: Dandy Walker Malformation as Congenital Defect

Switi Besekar¹, Prachi Falke², Nikita Bhokare³

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Abstract

Introduction: The Dandy Walker Malformation is a congenital defect affecting the cerebellum, the back part of the brain that controls movement, behaviour and cognitive ability. The central part of the cerebellum (the vermis) is absent or very small and may be abnormally positioned. The incidence rate is approximately 1 per 25,000 – 35,000 live births and the male and female ratio is 1:3.

Patient history: Master Rupesh aged 8 years was admitted in A.V.B.R.H. on 18/08/2019 is diagnosed with a known case of dandy walker malformation and came with the complaints of headache since 4 days, fever since 3 days, vomiting since 5 days and 3 episodes of seizures for which he has been taking ayurvedic medication.

Clinical finding: The patient has undergone various kind of blood test, CSF examination, CT scan, EEG record and MRI brain. The CBC reports were found as Hb% - 14.2 gm%, RBC - 5.23 M/cu. mm, WBC- 10800/cu.mm, platelets - 2.85 lacs/cu.mm; whereas the CSF reports were found with increased protein-CSF, i.e. 300mg/dl and the CT scan as well as MRI reports has shown that a large posterior fossa cyst with open communication with fourth ventricle with hypoplastic left cerebellar hemisphere and non visualized cerebellar vermis S/O dandy walker malformation and mild to moderate hydrocephalus.

Pharmacology: The patient was treated with NSAIDs, anti-biotics, anticonvulsant, antiemetic and antacid.

Surgical Management: The patient underwent V.P. shunt.

Nursing management: Checked for head circumference regularly, vital signs hourly, provided vitamins enriched diet as per dietician's order and assisted dressing for drainage.

Conclusion: The patient was admitted in A.V.B.R.H. in a critical condition with the chief complaints of headache since 4 days, fever since 3 days, vomiting since 5 days, 3 episodes of seizures, poor muscle tone and ataxia due to developmental delay, but after providing the required treatment by the health care team members of A.V.B.R.H., the patient's condition was improved and satisfactory.

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Keyword: Dandy walker malformation; Congenital defect; NSAID; Cerebellar Vermis.

INTRODUCTION

andy Walker syndrome is the rare congenital brain malformation involving the cerebellum (an area in the back of the brain which controls the movement) and the fluid filled spaces around it. The key feature of this syndrome is an enlargement of fourth ventricle (a small channel allow the fluid to flow between upper and lower areas of brain and spinal cord). A partial or complete absence of cerebellar vermis (the area between the two cerebellar hemisphere), a cyst formation near the internal base of skull. An increase in the size of fluid spaces surrounding the brain as well as increase the pressure may also be present. The syndrome appear dramatically or develop unnoticed.

Incidence

The incidence rate of Dandy Walker Syndrome was 1.0 per 100,000 live births per year. The incidence by sex per 100,000 live births per year was 1.24 for males and 0.78 for females. Dandy Walker Syndromeformed 3.5% of our cases of infantile hydrocephalus.

OBJECTIVE

- 1. To know general idea regarding disease condition.
- 2. To explore knowledge regarding pharmacology, medical and nursing management.

Patient Information

Patient history: Master Rupesh, aged 8 years was admitted in A.V.B.R.H. on 18/08/2019 is diagnosed with a known case of dandy walker malformation and came with the complaints of headache since 4 days, fever since 3 days, vomiting since 5 days and 3 episodes of seizures for which he has been taking ayurvedic medication. The patient has undergone various kind of blood test, CSF examination, CT scan, EEG record and MRI brain. The CBC reports were found as Hb% - 14.2gm%, RBC - 5.23 M/ cu.mm, WBC - 10800/cu.mm, platelets - 2.85 lacs/ cu.mm; whereas the CSF reports were found with increased protein-CSF, i.e. 300mg/dl and the CT scan as well as MRI reports has shown that a large posterior fossa cyst with open communication with fourth ventricle with hypo plastic left cerebellar hemisphere and non visualized cerebellar vermis-S/O dandy walker malformation and mild to moderate hydrocephalus.

Past history: He was diagnosed with dandy walker malformation five years back.

Causes

In most cases, the exact cause of Dandy-Walker complex is unknown. It is thought that most cases are caused by a combination of genetic and environmental factors that affect early development before birth. In some cases, exposures that occur during pregnancy, such as a pregnant woman having diabetes or an infection such as rubella, are thought to cause an increased risk for the developing baby to have Dandy-Walker complex. In some cases, Dandy-Walker complex is caused by an underlying genetic change. For example, some people with Dandy-Walker complex have extra or missing pieces of chromosomes in each cell of the body (chromosome abnormalities). Dandy-Walker complex can also occur as a symptom of another genetic syndrome. For example, people with Dandy-Walker complex may have a change in a gene that causes them to develop Dandy-Walker complex as well as other health problems.

Classification of complete heart block

- Dandy walker malformation (cystic dilation of the 4th ventricle, partial or complete agenesis of cerebellar vermis and an enlarge posterior fosse.
- Dandy walker variant (cystic posterior fossa mass with variable hypoplasia of cerebellar vermis and no enlargement of posterior fossa).
- Mega cistern magna (enlarge cistena magna with normal cerebellar vermis).

Clinical Finding

- Developmental delays in motor and language skills such as sitting up, walking, and talking.
- Poor muscle tone, balance, and coordination.
- Problems with eye movement, mainly jerky eye movement.
- Vision and hearing impairment.
- Seizures.

Diagnosis evaluation

- **1. History collection**: Done (history of Hydrocephalus and V.P. Shunt).
- **2. Physical examination:** Done (poor muscle tone and ataxia due to developmental delay).
- 3. CBC test: Done
- 4. ECG: Done

- 5. **CSF Study:** Report were found with increased protein
- 6. CT scan: Done
- 7. MRI scan: Its hows that a large posterior fossa

Blood Investigation Report

cyst with open communication with fourth ventricle with hypoplastic left cerebellar hemisphere and non visualized cerebellar vermis

Investigation	Normal Value	Patient Value	Justification
Biochemistry			
Kidney function test			
Urea serum	25 mg%	18-40 mg%	Normal
Creatine serum	0.96 mg%	0.7-1.5 mg%	Normal
Sodium serum	142 meg/l	142-136 meg/l	Normal
RBS	172 mg%	70-150 mg%	Increase
Potassium	4.8 meg/g	3-5 meg/1	Normal
Pathology complete blood cour	ıt		
HB%	14.2 gm%	13-15.5 gm%	Normal
MCV	77 cub.micro	80-90 cub	Decrease
MCH	22.3 pico.gm	26.5 - 33.5 picogm	Decrease
MCHC	33.8%	30.36.5%	Normal
RBS count	4.13 millioncumm	4.5-6 million cumm	Normal
RDW	12.3%	10-15%	Normal
HCT	36.5%	40.50%	Increase
WBC count	5000-10000/cumm	6000-10000 cumm	Normal
Total platelet count	150000-450000/micro liter	420000/micro liter	Normal
Monocytes	02%	06%	Increase
Granulocytes	60%	40-60%	Normal
Lymphocytes	36%	17-48%	Normal
Esosinophils	0.2%	0.5%	Increase

Treatment

Pharmacologic Therapy

- NSAIDs
- Antibiotic
- Anticonvulsant
- Antiemetic
- Antacid

Medical Management: As follow by:

- Tablet Atorin 10mg
- Tablet Alprax 0.25mg
- Tablet Telma 20mg
- Tablet Chymoral forte 1mg
- Injection Ceftrazone 1gm
- Injection Amikacin 500mg-2ml

General Measures for the management of Dandy Walker Malformation

- Explanation of nature of disease, treatment and self help strategies
- Good general nutrition
- Speech therapy to help with speech and language
- Physical therapy to improve the muscle tone and coordination
- Surgical insertion of ventriculoperitonial shunt in case of severe or worsening hydrocephalus
- Occupation al therapy to help build the self car and mobility skills such as eating, getting dressed and walking
- Special education as necessary for cognitive and learning problems

Surgical Management

- Ventriculoperitonial shunt
- Cystoperitonial shunt

Nursing Management: The nurse is responsible for administering the medications and for assessing their beneficial and detrimental effects to the patient. It is the balance of these effects that determines the type and dosage of pharmacologic therapy. Nursing actions to evaluate therapeutic effectiveness include the following:

- Keeping an intake and output record to identify a negative balance (more output than input).
- Weighing the patient daily at the same time and on the same scale.
- Physical examination to check muscle tone, mobility, head circumference *etc*.
- Monitor head circumference and vital signs.
- Provide vitamins rich diet as per dietician.
- Assisted dressing for drainage.

Monitoring and Managing Potential Complications: Profuse and repeated diuresis can lead to hypokalaemia (ie, potassium depletion). Signs are weak pulse, faint heart sounds, hypotension, muscle flabbiness, diminished deep tendon reflexes, and generalized weakness. Hypokalaemia poses new problems for the patient with HF because it markedly weakens cardiac contractions. In patients receiving digoxin, hypokalemia can lead to digitalis toxicity. Digitalis toxicity and hypokalemia increase the likelihood of dangerous dysrhythmias (see Chart 30-3). Low levels of potassium may also indicate a low level of magnesium, which can add to the risk for dysrhythmias. Hyperkalaemia may also occur, especially with the use of ACE-Is or ARBs and spironolactone.

Nursing Diagnoses: Based on the assessment data, major nursing diagnoses for the patient with HF may include the following:

- Activity intolerance (or risk for activity intolerance) related to imbalance between oxygen supply and demand because of decreased CO
- Excess fluid volume related to excess fluid or sodium intake and retention of fluid because of HF and its medical therapy
- Anxiety related to breathlessness and restlessness from inadequate oxygenation

- Powerlessness related to inability to perform role responsibilities because of chronic illness and hospitalizations.
- Non compliance related to lack of knowledge.⁵

Collaborative Problems/ Potential Complications Based on the assessment data, potential complications that may develop include the following:

- Cardiogenic shock
- Dysrhythmias
- Thromboembolism
- Pericardial effusion and cardiac tamponade

Continuing Care: Depending on the patient's physical status and the availability of family assistance, a home care referral may be indicated for a patient who has been hospitalized. Elderly patients and those who have long-standing heart disease with compromised physical stamina often require assistance with the transition to home after hospitalization for an acute episode of HF. It is important for the home care nurse to assess the physical environment of the home. Suggestions for adapting the home environment to meet the patient's activity limitations are important. If stairs are the concern, the patient can plan the day's activities so that of stairs climbing is minimized; for some patients, a temporary bedroom may be set up on the main level of the home. The home care nurse collaborates with the patient and family to maximize the benefits of these changes. The home care nurse also reinforces and clarifies information about dietary changes and fluid restrictions, the need to monitor symptoms and daily body weights, and the importance of obtaining follow-up health care. Assistance may be given in scheduling and keeping appointments as well. The patient is encouraged to gradually increase his or her selfcare and responsibility for accomplishing the therapeutic regimen.⁵

Evaluation

Expected Patient Outcomes

Expected patient outcomes may include:

- 1. Demonstrates tolerance for increased activity
 - a. Describes adaptive methods for usual activities.
 - b. Stops any activity that causes symptoms of intolerance.

- c. Maintains vital signs (pulse, blood pressure, respiratory rate, and pulse oximetry) within the targeted range
- d. Identifies factors that contribute to activity intolerance and takes actions to avoid them
- e. Establishes priorities for activities
- f. Schedules activities to conserve energy and to reduce fatigue and dyspnea

2. Maintains fluid balance

- a. Exhibits decreased peripheral and sacral oedema
- b. Demonstrates methods for preventing oedema

3. Is less anxious

- a. Avoids situations that produce stress
- b. Sleeps comfortably at night
- c. Reports decreased stress and anxiety
- 4. Makes decisions regarding care and treatment
 - a. States ability to influence outcomes

5. Adheres to self-care regimen

- a. Performs and records daily weights
- b. Ensures dietary intake includes no more than 2 to 3 g of sodium per day.⁵

DISCUSSION

CHB occurs when auricular and ventricular contractions are not communicated to each other beating at their own paces to result in a negative effect in cardiac function. CHB may occur in AV node, intra-Hisian, or infra-Hisian sites. Intranodal or intra-Hisian blocks almost always feature escape rhythms with narrow QRS complexes in the mean while infra-Hisian block often presents with wide QRS complex escapes.

Strength: Patient was 71 year male patient tolerate all the medication and well response within seven days to the therapeutic treatment of the hospital which was given as a treatment.

Informed Consent

Before taking this case, information was given to the patients and their relatives and Informed consent was obtained from patient as well as relatives.

CONCLUSION

Treatment of asymptomatic CHB with narrow complex escape rhythm is challenging. Those patients are often very young, and implanting a permanent PM is not always an easy decision. The likelihood of renewing multiple generators, potential of developing infections, and vascular complications sometimes outweigh the benefits of early intervention, and the ideal time for implanting a PM in those patients still remains a subject for further investigation. Nevertheless, the select group will benefit from close follow-ups, annual echocardiography, and rhythm monitoring by a loop recorder when they opt for a conservative approach without PM therapy.

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