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Role of Scaffold in Pediatric Scald Burns

Jackson Nuli¹, Ravi Kumar Chittoria², Neljo Thomas³

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Abstract

Collagen is the main structural protein of most hard and soft tissues in animals and the human body, which plays an important role in maintaining the biological and structural integrity of the extracellular matrix (ECM) and provides physical support to tissues. Collagen can be extracted and purified from a variety of sources and offers low immunogenicity, a porous structure, good permeability, biocompatibility and biodegradability. Collagen scaffolds have been widely used in tissue engineering due to these excellent properties. However, the poor mechanical property of collagen scaffolds limits their applications to some extent. To overcome this short coming, collagen scaffolds can be cross-linked by chemical or physical methods or modified with natural/synthetic polymers or inorganic materials. Biochemical factors can also be introduced to the scaffold to further improve its biological activity. Here we present the use of scaffold in the management of paediatric thermal injury.

Keywords: Pediatric Scald Burns; Scaffold.

INTRODUCTION

Tissue engineering aims to reconstruct living tissuesfor replacement of damaged or lost tissue/ organs, hoping to maintain, restore or enhance part or whole organ function of living organisms.⁴ An ideal scaffold for tissue engineering is integral to achieve this goal. In natural tissue, extracellular matrix (ECM) is a collection of extracellular molecules secreted by cells that provides spatial

Author Affiliation: ¹International Visitor, ³Senior Resident, ²Professor & Head, Department of Plastic Surgery & Telemedicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry 605006, India.

Corresponding Author: Ravi Kumar Chittoria, Professor & Head, Department of Plastic Surgery & Telemedicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry 605006, India.

E-mail: drchittoria@yahoo.com

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and mechanical signals to cells and physical support to tissues.^{5,6} It acts not only as a benign scaffold for arranging cells within the connective tissue, but also has a dynamic and flexible role that defines cellular behaviors and tissue function.5,6 Therefore, it is a rational strategy to fabricate a scaffold that can mimic the ECM of damaged tissue or organ to repair it sequentially^{5,6} Collagen is the most abundant protein in the ECM and has been considered to be a group of proteins with a characteristic molecular structure fibrillar structure, which contributes to the extracellular scaffolding.5 That is to say, collagen plays an important role in maintaining the biological and structural integrity of ECM and provides physical support to tissues. Collagen possesses extensive sources (such as bone, cartilage, tendon, ligament, blood vessel, nerve, skin), as it is the main structural protein of most hard and soft tissues.6 In addition, collagen offers low immunogenicity, a porous structure, permeability, biocompatibility and biodegradability good and has functions to regulate the morphology,

adhesion, migration and differentiation of cells.^{7,8} All of these good performances make this natural polymer seem to be a promising biomaterial for scaffolds in tissue engineering. However, the collagen scaffolds lack mechanical strength and structural stability upon hydration, which limit their applications in particular tissues. Intermolecular cross-linking of collagen scaffolds can be achieved by physical or chemical methods, which can improve the mechanical properties of the scaffold. Besides, blending collagen with other materials, such as natural, synthetic polymers and inorganic materials is also frequently used to enhance the mechanical strength of collagen scaffolds. Meanwhile, biochemical factors could be added into or modified onto the scaffold selectively according to the damaged region to improve the cellular outcome.

MATERIAL AND METHODS

This study was conducted in the Department of Plastic Surgery in a tertiary care institute. Informed consent was obtained from the patient under study. Department scientific committee approval was obtained. It is a single center, non-randomized, non-controlled study. The patient under study was a 1-year old male child, (Fig. 1) with no other known



Fig. 1: Child with superficial burns on presentation.

co morbidities. Patient was analyzed systematically and was found to have second degree superficial burns to his chest, abdomen and right upper limb. Wound bed was prepared in accordance with TIME concept mentioned in the guidelines, the ulcer was serially assessed and documented according to bates – Jensen wound assessment tool. Non-viable necrotic tissue was managed with multiple sessions of surgical & hydro debridement. Infection was managed with local antimicrobials & antibiotics according to culture sensitivity. Scaffold was applied on the wounds during dressing. (Fig. 2)



Fig. 2: Scaffold dressing.

RESULTS

Wound bed gradually improved, clinical decision was taken to reconstruct with skin grafting. (Fig. 3)



Fig. 3: Skin graft, after wound bed preparation.

DISCUSSION

Since its emergence in the mid-1980s, tissue engineering has continued to evolve as an exciting and multidisciplinary field aiming to develop biological substitutes to restore, replace or regenerate defective tissues. Cells, scaffolds and growth stimulating signals are generally referred to as the tissue engineering triad, the key components of engineered tissues. By virtue of their inherent mechanical, biological and architectural properties, scaffolds assist in tissue engineering and regeneration by providing a support matching the original extracellular material in terms of its mechanical properties, promote specific cellular lineage regeneration and differentiation by using the principle of durotaxis, and can, be engineered to contain adhesion lig ands establishing topography and promote correct cell deposition and alignment, or biological cues such as growth factors, nucleic acids, and cytokines that promote tissue proliferation,¹ In breast surgery, a cellular dermal matrix improves surgical and aesthetic outcomes by providing tissue support to the mastectomy skin flaps.1

Scaffolds are effective when they inhibit wound contraction and its sequelae, scar formation, and

their effectiveness can be modified by varying their pore structure, degradation rate, and surface biochemistry. Hence, they have been used in the treatment of partial and full thickness wounds, pressure ulcers, diabetic foot ulcers, chronic vascular ulcers, surgical wounds, venous lower extremity ulcers, and burns. In breast surgery, a cellular dermal matrix improves surgical and aesthetic outcomes by providing tissue support to the mastectomy skin flaps. It can minimize peri-prosthetic fibrosis and appears to lessen the inflammatory response associated with prosthetic devices1Use of a cellular dermal matrix in the setting of radiation therapy is useful in the shortterm but may not ameliorate soft tissue related morbidities in the long term. In abdominal surgery, the use of biological meshes in the repair of hernias is a matter of debate. As an advantage, it carries lower risk of infection,¹ it can be used in the management of parastomal hernia,² and can be used in the management of hiatal hernia. However biological meshes are expensive, recurrence rates are high³ and long-term results are not favorable in terms of abdominal wall laxity.

CONCLUSION

Scaffolds and growth stimulating signals are generally referred to as the tissue engineering triad, the key components of engineered tissues. Hence, they have been used in the treatment of partial and full thickness wounds, pressure ulcers, diabetic foot ulcers, chronic vascular ulcers, surgical wounds, venous lower extremity ulcers, and burns. Hence we were able to manage a case of pediatric scald burns using scaffold successfully however it needs large scale randomized trials for application in clinical practice.

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A Descriptive Study to assess the Knowledge Regarding Behavioural Problems among Mothers of Preschool Children in Selected Rural Areas

Kunal Sanap¹, Elishiba Mire², Shivani Rathod³, Sadik Sheikh⁴, Vishal Raut⁵, Alisha Sawale⁶, Aachal Rathod⁷

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Abstract

Background: Behavioural habits develops from adult through imitation where as other as purposeful movements. Where children cannot adjust to complex environment around them, they are unable to grow in the socially acceptable way resulting in the exhibition of particular behaviour and this is known as behavioural problems.

Objective: (1) To assess knowledge regarding behavioural problems among mother of preschool children in selected rural areas. (2) To associate the knowledge score with their selected demographic variable.

Methodology: Quantitative Descriptive research design was selected to conduct study. 60 mothers of preschool children were selected as samples based on exclusion and inclusion criteria through non-probability purposive sampling technique.

Result: The 91.7% of mothers of preschool children had poor level of knowledge score, 8.3% of mothers of preschool children had average level of knowledge score. No mother of preschool children had a good or very good level of knowledge score. The result also reveals that the mean is 3.61 and standard deviation 1.29. Analysis also reveals that there is no association of knowledge score with age, education, occupation, religion, monthly family income, number of children, type of family and source of information.

Conclusion: Thus, it was concluded that, majority of mothers of preschool children have a poor knowledge score regarding behavioural problems of children, hence it is suggested that the interventional studies can be conducted in future to raise the knowledge of mothers regarding behavioural problems of preschool children.

Keywords: Mother of preschool children; Rural areas; Behavioural Problems.

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INTRODUCTION

To predict the future of a nation, it has been remarked, one need not consult the stars, it can more easily and plainly be read in the faces of it 's children.¹ According to Merriam Webster, "Behavioural problems refers to, symptomatic expression of emotional or interpersonal maladjustment in the children like temper tantrum,

Author Affiliation: ^{1,3-7}Student, ²Tutor, Nazarene Nurses Training College, Pusad Road, Washim 444505, Maharashtra, India.

Corresponding Author: Elishiba Mire, Tutor, Nazarene Nurses Training College, Pusad Road, Washim 444505, Maharashtra, India.

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nail biting, pica, thumb sucking and enuresis.² The common behavioural problems of preschool children are temper tantrum, breath holding spell, thumb sucking, nail biting, enuresis, encopresis, pica, tics, stuttering or stammering, delayed speech and attention deficit hyperactive disorder. The age range normally understood as the preschool age is after age three and up to about six. As the young child changes from a toddler in a pre-schooler, it is important to understand and promote positive growth through multiple domains. This includes cognitive, emotional, social and physical development.3 The causes for all behavioural problems in preschool children are due to parents negligence, poor supervision or poor attention, family conflict and maladjustment. Example, too strict parents, rejection, sibling rivalry, unconscious anger and insecurity, conflict, aggressions, neurotic attitudes of the mother.4

A. Background

Behavioural habits develops from adult through imitation where as other as purposeful movements.⁵

Where children cannot adjust to complex environment around them, they are unable to grow in the socially acceptable way resulting in the exhibition of particular behaviour and this is known as behavioural problems.⁶

B. Need of study

As per ICMR 2001, overall prevalence of behavioural disorders in Indian children is 12.5% temper tantrum occurs in 20-25%.⁷

A study conducted in National Institute of Mental Health and Neuroscience, Bangalore resulted that all behavioural problems in the state of Gujarat and Andhra Pradesh which together account for more than 15% of Indian's population. Total of 40,541 cases of behavioural problems were recorded in which most victims from poor socioeconomic status [93%] rural areas [74%] backward caste [43%].⁸

A prevalence study conducted in 12 districts of Karnataka states were shows that current incidence of behavioural problems in children were 4.9%.⁹

2.7 Million children are with behavioural problems. Boys were more likely than girls to have definite or severe behavioural problems. Children from poor family were more likely to have emotional or behavioural problems. In general child population the prevalence of behavioural problems has been estimated at between 3% and higher incidence among preschool children from low-income families that is 30%.¹⁰

A study to assess the knowledge regarding behavioural problems of school children among mothers at Patteswaram rural community in Thanjavur district. A cross sectional descriptive design was adopted for the study. 100 mothers were selected by using purposive sampling technique. All participants were given questionnaire on behavioural problems. The finding reveals that knowledge of mothers 61% of mother had inadequate knowledge, 37% of mother had moderate, 2% of mother had adequate knowledge on behavioural problem. In conclusion mothers are having very poor knowledge regarding behavioural problems.¹¹

Based on above statistical findings the prevalence of behavioural problems in India among preschool children is high as well the knowledge of mothers of preschool children is also low, hence researcher felt the need of doing research on a descriptive study to assess the knowledge regarding behavioural problems among mothers of preschool children in selected rural areas.

C. Problem Statement

A descriptive study to assess the knowledge regarding behavioural problems among mothers of preschool children in selected rural areas.

D. Objectives of the study

Primary objectives:

• To assess the knowledge regarding behavioural problems among mothers of preschool children in selected rural areas.

Secondary objectives:

• To assess the knowledge regarding behavioural problems among mothers of preschool children in selected rural areas.

E. Operational Definitions

- 1. *Assess:* In this study assess means, to evaluate the level of knowledge of mothers regarding behavioural problems in the preschool children in selected rural areas.
- 2. *Behavioural problems:* In this study behavioural problem refers to, temper tantrum, breath holding spell, thumb sucking, nail biting, enuresis, encopresis, pica, tics, somnambulism, somniloquism, nightmare, stuttering or stammering, delayed speech and attention deficit hyperactive disorder.
- 3. *Mother:* In this study mother refers to, a female

parent of preschool child.

- 4. *Rural:* In this study rural means, a selected rural area.
- 5. *Study:* In this study, study refers to, the investigation to knowledge regarding behavioural problem amongmother of preschool children of selected rural area.
- 6. *Preschool:* In this study preschool refers to, the children who are between three and five years.

F. Scope of study

- 1. This study will help the researcher to assess the knowledge of mother regarding behavioural problem in selected area.
- 2. Further, other studies can be conducted by using other research designs on behavioural problems among preschool children based on the research findings of this study.

G. Assumption

- 1. Mothers may have less knowledge regarding behavioural problem of preschool children.
- 2. There will be association between knowledge score with their selected demographic variables.

H. Delimitation

Present study is delimited to mothers of preschool children residing in selected rural areas.

I. Ethical Consideration

The study proposal was accepted by the ethical committee of the institution. Permission was obtained by the concerned authorities before conducting the study. Consent letter was obtained by individual samples after explaining them the research process in their own language. Confidentiality regarding the participants information was maintained by using code number by the investigator.

J. Review of Literature

In the present study the literature reviewed has been organized into the following categories:

- 1. Literature related to behavioural problems.
- 2. Literature related to knowledge of mothers regarding behavioural problems.

K. Conceptual Framework

The conceptual framework selected for the study was based on Rosenstock and Becker's health belief model [HBM] Rosenstock [1994], Becker's and Minman [1975]. This model addresses

the relationship between a person's belief and behaviour. The HBM is know as a 'Single Model' with components that interact to explain health behaviour. The HBM has been continuouslyrefined and modified to help identify and explain the behaviour of those who accessed the health care system to prevent illness. More recently, the HBM has be adopted for a much broader use to explain a variety to health behaviour and to design intervention that would improve client access to preventive measure.

MATERIAL AND METHOD

- A. *Research approach:* Quantitative research approach
- B. Research Design: Descriptive research design
- C. Research setting: Selected rural area
- D. Variables
- 1. *Research variable:* Knowledge regarding Behavioural problems among mothers of preschool children in selected rural area.
- 2. *Demographic variable:* Age of mother (in years), Education of mother, Occupation of mother, Religion, Monthly family income (in Rs), Number of children, Type of family, Source of information.
- E. *Population:* All mothers of preschool children.
- 1 *Target population:* All mothers of preschool children residing in selected rural area
- 2. *Accessible population:* The mothers of preschool children residing in selected rural areas and are available at the time of data collection.
- F. Sampling
- 1. *Sample size:* 60 mothers of preschool children
- 2. *Sampling technique:* Non-probability purposive sampling technique
- G. Sampling criteria
- 1. *Inclusive criteria:* In this study, inclusive criteria is, mothers.
 - Of preschool children
 - Residing in rural areas
 - Who are available at the time of data collection
 - Who are able to read and write Marathi, Hindi, English
- 2 Exclusive criteria: In this study, exclusive

criteria is, mothers who are

- Not willing to participate in the study
- Having mentally retarded children
- Having physically retarded children
- Health professionals
- H. Description of Tools
- 1. *Section A:* Demographic variables
- 2. *Section B:* Self-structured knowledge questionnaires

I. Content Validity

To ensure the content and construct validity, the tool was distributed to 6 experts including child health nursing subject experts, medical surgical nursing subject experts, Obstetrics and gynecology subject experts. 20 tools were received after validation from the experts.

J. Feasibility of the study

The investigator did not find much difficulty in getting the subjects because accessible population and sample size was 60 respective to the inclusive criteria.

K. Data Collection

- The main study data was gathered from 07/02/2022 to 12/02/2022.
- Permission was obtained from the Sarpanch of concerned gram panchayat.
- The samples were approached in small groups on a daily basis.
- Before giving the questionnaire, selfintroduction was given by the investigator
- The purpose of the study mentioned.
- Consent of the samples were taken.
- Test was conducted by self-administered questionnaire.
- Questionnaire were distributed to the sample and collected back after 30 mins.

RESULT

Section I: Percentage wise distribution of mothers of preschool children in selected rural areas with regards to selected demographic variables.

Table: Percentage wise distribution of mothers of preschool children according to their demographic variables.

Demographicvariables	Frequency	Percentage (%)
Age (yrs)		
20-24 yrs	14	23.3
25-29 yrs	30	50
30-34 yrs	16	26.7
35 and above	0	0
Education of Mother		
Primary	24	40
Secondary	29	48.3
Higher	5	8.3
Graduation	1	1.7
Post-graduation	1	1.7
Illiterate	0	0
Occupation of mother		
Government service	2	3.3
Private service	4	6.7
Housewife	44	73.3
Self employed	9	15
Labourer	1	1.7
Other	0	0
Religion		
Hindu	40	66.7
Muslim	5	8.3
Buddhist	15	25
Christian	0	0
Others	0	0
Monthly Family Income (i	n Rs)	
Below-10,000	20	33.4
10,000-20,000	17	28.3
15,000-20,000	20	33.3
Above 20,000	3	5
Number of Children		
One	11	18.3
Two	37	61.7
Three	9	15
More than three	3	5
Types of Family		
Joint	27	45
Nuclear	26	43.3
Extended	7	11.7
Source of Information		
Radio	1	1.7
Television	36	60
Newspaper	9	15
Others	14	23.3

Section II: Assessment of knowledge score of mothers of preschool children in selected rural areas.

Following table showing frequency percentage wise distribution of assessment of knowledge score among mothers of preschool children in selected rural area regarding behavioural problems.

 Table 2: Frequency percentage wise distribution of assessement of knowledge score among mothers of Preschool Children in selected rural area regarding behavioural Problems.

 n=60

Loval of knowledge Score Pange		Level of Kno	nowledge Score		
Level of knowledge	Score Kange	Frequency (f)	Percentage (%)		
Very Good	75-100% (16-20)	0	0		
Good	50-75% (11-15)	0	0		
Average	25-50% (6-10)	5	8.3		
Poor	0-25% (0-5)	55	91.7		
Minimum score		1			
Maximum score		7			
Mean knowledge score		3.61±1.290			

Section III: Association of knowledge score in relation to selected demographic variable

						n=60	ĺ
Demographic Variables	Mothers of preschool children	Calculated f-value	DF	Tabulated value	Level of significance	Significance	
1. Age (yrs)							
20-24 yrs	14						
25-29 yrs	30	1 1 2 2	50	0.220	>0.05	Not	
30-34 yrs	16	1.132	1.152 59	0.329	>0.05	significant	
35 and above yrs	0						
2. Education of mother							
Primary	24						
Secondary	29						
Higher	5	1 666	50	0.100	>0.05	Not	
Graduation	1	1.555	59	0.199	>0.05	significant	
Post-graduation	1						
Illiterate	0						
3. Occupation of mother							
Government service	2						
Private service	4						
Housewife	44	1.026	50	0.402	>0.05	NT-t-iifit	
Self-employed	9	1.026	59	0.402	>0.05	Not significant	
Labourer	1						
Other	0						
4. Religion							
Hindu	40						
Muslim	5						
Buddhist	15	0.717	59	0.493	>0.05	Not	
Christian	0					Significant	
Others	0						

Table 3: Association of knowledge score in relation to selected demographic variable

5. Monthly family income in	(Rs)					
Below-10,000	20					
10,000-15,000	17	0 552	EO	0.649	>0.05	Not
15,000-20,000	20	0.555	59	0.040	~0.05	Significant
Above-20,000	3					
6. Number of children						
One	11					
Two	37	0.871	50	0.462	>0.05	Not
Three	9	0.871	59	0.402	-0.05	Significant
More than three	3					
7. Type of family						
Joint	27					NT 1
Nuclear	26	1.561	59	0.219	>0.05	Not Significant
Extended	7					Significant
8. Source of information						
Radio	1					
Television	36	2 242	50	0.083	>0.05	Not
Newspaper	9	2.343	57	0.005	~0.05	Significant
Others	14					

NS- Not significant

DISCUSSION

In 2017 Jayashree Godara and Sunita Chouhan conducted to assess knowledge about the behavioural problems of preschool age (3-6 years) of non-employed mothers. The total sample for the present study consisted of 40 randomly selected (lottery) mothers from four randomly selected residential colonies of Bikaner city.10 nonemployed mothers were selected randomly (lottery) from each selected colony. The data were collected through interview schedule prepared by Gupta (2006). Frequency, percentage, was computed to assess the aspects of the behavioural problems of pre-schoolers of non-employed mothers. The assessment of knowledge of non-employed mothers revealed that majority of 60% non-employed mothers had low knowledge, followed by 37.50% had moderate level of knowledge and only 2.50 per cent mothers had high knowledge about the overall programme.12

In the above study it is shown that the nonemployed mothers of preschool children had low and moderate level of knowledge score which is equal as the poor and average knowledge score in the present study.

Hence it is proven that the majority of mothers of preschool children have a poor knowledge score regarding behavioural problems of children.

CONCLUSION

Thus, it was concluded that, majority of mothers of preschool children have a poor knowledge score regarding behavioural problems of children, hence it is suggested that the interventional studies can be conducted in future to raise the knowledge of mothers regarding behavioural problems of preschool children.

S-Significant

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I, **Dinesh Kumar Kashyap**, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd/-

(Dinesh Kumar Kashyap)

Impact of COVID-19 Pandemic on School Life

Johnson L. K¹, Senthil kumar. T², Akhila Shiju³, Aleena Emmanuel⁴, Anjana Raju⁵, Christina M F⁶, Najiya Shirin P⁷

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Abstract

Introduction: The pandemic COVID-19 has spread over whole world and compelled the human society to maintain social distancing. The outbreak of COVID-19 has impacted students' education across the universe. An unexpected temporary suspension of classes had become indefinite due to the severity of COVID-19 all over the world. Thus, the lockdown destroyed the schedules of every student. The students from less privileged backgrounds have experienced large negative impact due to COVID-19 outbreak. The aim of this study was to assess the impact of school life due to COVID-19 pandemic.

Methods: A quantitative approach with descriptive survey design was used. The sample consists of 348 high school students, aged 11 to 16 years, were selected by convenient sampling technique. The impact of school life due to COVID-19 pandemic scale was prepared by the investigator to collect the data.

Results: Descriptive and inferential statistics were tailored to analyse the data and the analyses were carried out on the basis of the objectives and hypothesis of the study. The mean score of the impact of school life due to COVID-19 pandemic was 108, median 112 and the standard deviation 20.11. The school life was moderately and severely affected at 68.6% and 22.4% respectively. There were a correlation between mean scores of curriculum and co-curricular, behavioural mean scores and 'r' value 0.947 and 0.921 were highly positively correlated. There were no associations with the impact of school life due to COVID-19 pandemic and selected demographic variables at 0.05 levels.

Discussion: The study showed that, moderate and severe level of impact had identified on high school students due to COVID-19 pandemic. The impact may deteriorate very badly if pandemic continues for a year.

Keywords: School life; COVID-19 pandemic; Impact.

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INTRODUCTION

When news of an epidemic began to spread in a Chinese city in early 2020, no one anticipated the scope of the epidemic for the entire world in a very short period. From Wuhan (China) to New York (USA) through Africa, South America, Asia, and Europe, the new coronavirus, coronavirus disease 2019 (COVID-19) or severe acute respiratory

Author Affiliation: ¹Vice Principal, ²Principal, ³⁻⁷Final Year B.Sc Nursing Students, Department of Mental Health Nursing, Lourde College of Nursing, Taliparamba, Kannur 670143, Kerala, India.

Corresponding Author: Senthil kumar. T, Principal, Department Medical Surgical Nursing, Lourde College of Nursing, Taliparamba, Kannur 670143, Kerala, India.

syndrome coronavirus 2 (SARS-CoV-2), has paralyzed, to a greater or lesser extent, the life in many countries, causing thousands of deaths and about 6 million infections.¹

The pandemic COVID-19 has spread over whole world and compelled the human society to maintain social distancing. The outbreak of COVID-19 has impacted more than 120 crores of students and youth across the planet. The education sectors including schools, colleges and universities became closed. Classes suspended and all examination of schools, colleges' universities including entrance examination postponed it indefinitely. Thus, the lockdown destroyed the schedules of every student.² The students from less privileged backgrounds have experienced large negative impact due to COVID-19 outbreak.³

The lockdown hascompelledmany educational institutions to cancel their classes, examination and to choose the online mode. Initially, the educators and the students were quite confused and didn't understand how to cope up with the situation of this sudden crisis that compelled closure of educational activities. But later on all realized that the lockdown has taught so many lessons to manage the emergence of such pandemics. Thus, COVID-19 has created many challengesand opportunities for the educational institutions to strengthen their technological knowledge and infrastructure. The lockdown has given them a ray of hope for teachers & student to continue the educational activities through online. The teachers assigned works to the students through online, delivered lectures through video conferencing using different apps.4

With this sudden shift away from the classroom in many parts of the globe, some are wondering whether the adoption of inline learning will continue to persist post-pandemic and how such a shift would impact the world wide education market.⁴

Need for the study

As online classes have became a reality in the corona virus infected world, a survey in Delhi and Mumbai shows that 74% of school students find the online classes to be good. But they prefer the classroom study. As per the survey conducted by New Delhi researcher Suranjana Bhadwas and Mumbai based researcher Kalpana Bindu in Mumbai and Delhi shows that 85% of students preferred classroom classes for different reasons and they miss their classroom environment.⁶

The other study says that: An overwhelming 88% of the students covered in the survey said that they were missing out an interactions with their teachers, peers and friends. As many as 51% students missed their extracurricular activities such as physical education, arts, music and dance.

One of the survey said that high school students delayed food and wake up time and shifted Chrono type toward evenings during this COVID-19 pandemic and during the pandemic the physical and physiological domains are not attended.⁷

Problem statement

A study to assess the impact of COVID-19 pandemic on school life among high school students in a selected community, Kannur.

OBJECTIVES

The objectives of this study are to:

- Assess the impact of COVID-19 pandemic on school life among high school students.
- Find the correlation between impacts on school life variables.
- Find the association between the impacts on school life and selected demographic variables.

Hypotheses

To achieve the stated objectives the hypothesis will be tested at 0.05 level of significance.

- **H0**₁: There is no significant correlation between mean curricular score and mean cocurricular, behavioural score.
- **H0**₂: There is no significant association between impact of school life due to COVID-19 pandemic mean scores and selected demographic variables.

Assumption

The study assumes that:

- The COVID-19 pandemic has any form of effects on high school students.
- Children prefer offline classes than online classes.
- Online academic session reduces the students' performance.

MATERIALS AND METHODS

Research Approach

A quantitative research survey approach was adopted for this study to assess the impact of covid 19 pandemic on school life among high school students in selected community, Kannur.

Research Design

Descriptive survey research design was used in the study.

Variables

Dependent Variables

In this study the dependent variables were school lives among high school students.

Independent Variables

In this study the independent variables were the impact of COVID-19 pandemic.

Setting of the Study

This study was conducted in high school students in Kannur district.

Sample

In this study the sample comprises of 348 high school students in selected high schools in Kannur district.

Sampling Technique

In this study convenient sampling was used.

Inclusion Criteria

- High school students who are willing to participate in study
- Age group between 11-15 year's
- Selected high schools

Exclusion Criteria

- High school students who are not willing to participate in study
- Age less than 11 & more than 15 years old

Description of the tool

Tool - I: The first part of the tool consisted of 12 items related to the baseline characteristics. The second part consists.

RESULTS

A few highlights from the demographic variables of the study.

Distribution of samples based on their type of school.



Fig. 1: Distribution of samples based on their type of school.

Fig. shows that the more, 63.5%, studied in the Govt. aided school, 27.3% studied in the Government school and 4.6% studied in private state board of examination and CBSE/ ISCE.



Fig. 2: Distribution of samples based on their medium of Instruction

Data in the figure shows that most 70.4% of students were in English medium and 29.6% were in Malayalam medium.



Fig. 3: Distribution of samples based on their Online classes

Data in the fig. shows that the online classes for students, in which 44.3% had more than two hours classes in a day, less than 20% had half an hour, one hour and two hours classes and only 4.3% had alternative day classes.



Fig. 4: Distribution of samples based on the platform used for online classes

Fig. shows that the platform used for online classes, in which more than half, 55.5%, used Google meet, 20.1% used television, 15.5% were using whatsapp, 5.5% had you tube and 3.4% other platform.



Fig. 5: Distribution of samples based on number of homework

Data in the diagram shows that more than half, 59.5%, had more than two homework, 21.3% had two and less than 10% had one and alternative day homework.

Table 1: Distribution of sample according to the impact of school

 life due to COVID-19 pandemic

			n=348		
Carling			Impact of School life		
Grading	Kange	Frequency	Percentage		
Not affected at all	40	4	1.1		
Mildly affected school life	41-80	27	7.7		
Moderately affected school life	81-120	239	68.6		
Severely affected school life	121-160	78	22.4		



Fig. 6: Description on impact of school life due to COVID-19 pandemic

Bar diagram showed that most, 68.6%, had moderately affected, 22.4 % had severely affected, 7.7% affected mildly and 1.1% expressed not affected at all.

Table 2: Range, Mean, median and Standard Deviation of level of Helicopter Parenting

11-210

n = 348

				n-340
Impact of school life	Range	Mean	Median	Standard Deviation
	32-160	108	112	20.1

Maximum Score: 160

The data presented in the table 2 shows that the mean, median and standard deviation of the impact of school life scores were 108, 112 and 20.1 respectively.

 Table 3: Area wise analysis on impact of school life due to

 COVID-19 pandemic

S. No.	Area	Mean Score
1.	Curricular	69.7
2.	Co-curricular	15.5
3.	Behaviour	22.6

Correlation between the impacts of school life variables.

This section dealt with the correlation between the impact of school life due to COVID-19 pandemic mean curricular score and mean co-curricular, behavioural scores.

H0_i: There is no significant correlation between mean curricular score and mean co-curricular, behavioural score.

To test the correlation, an alternative hypothesis was formulated and Karl Pearson correlation coefficient test was computed to test the hypothesis.

H₁: There is a significant correlation between

mean curricular score and mean co-curricular, behavioural score.

Table 4: Mean, correlation 'r' value between the curricular, cocurricular and behaviour scores of the high school students

				n=348
Group	Mean Curricular score	Mean co- curricular score	Mean behaviour score	ʻr' value
High school students		15.5		0.921*
	69.7	22.6		0.947*
'r',df=n-2=	0.308,		p<0.05 *=Sig	gnificant

Karl Pearson correlation values computed at df=n-2 between the mean curricular score and mean co-curricular score and the 'r' value was 0.921. Similarly, the mean curricular score and mean behaviour score and the 'r' value was 0.947 positively correlated and research hypothesis was accepted.

Association between the impact of school life due to COVID-19 pandemic and selected demographic variables.

This section dealt with the association between the impact of school life due to COVID-19 pandemic and selected demographic variables such as age, gender, religion, medium of instruction, number of online classes, platform used for online classes, number of homework per day, father's education and occupation.

To find the impact of school life due to COVID-19 pandemic and selected demographic variables following null hypothesis was stated.

H0₂: There is no significant association between impact of school life due to COVID-19 pandemic mean scores and selected demographic variables.

In order to test the null hypothesis, an alternative hypothesis was stated.

H₂: There is a significant association between impact of school life due to COVID-19 pandemic mean scores and selected demographic variables.

Chi-square test was used to find the association. It is identified that, there was no association between mean scores of the impact of school life due to COVID-19 pandemic and the following demographic variables.

Variables P Value Sl. No X^2 1. 9.5 0.446 Age 2. Gender 5.0 0.107 0.890 3 1.0 Religion 4. Type of school 5.0 0.866 5. Medium of instruction 1.00.562 Online classes in a day 1.94 0.378 6. 7. Platform used for online classes 1.0 0.486 8. Homework in a day 1.5 0.349 9 Type of family 5.0 0.989 10. Family income 3.2 0.799 11. Father's education 4.10.538 3.3

Table 5: Chi-Square values between the impact of school life due

p<0.05 *Significant

0.996

There was no association with the impact of school life due to COVID-19 pandemic and selected demographic variables at 5% confidence level and the test is not statistically significant as p<0.05 so null hypothesis was accepted and research hypothesis was rejected.

DISCUSSION

12.

Father's occupation

Covid 19 pandemic has brought a new challenge for educational department and also the scenario of Covid pandemic influences the innovator to think newly and brought the uninterrupted academic sessions for children and adolescents. The quality of education has dipped down when it's compared to the earlier but technology outweigh it and it made it full-fledged classes for students to strengthen the educational strategies. Role of department of education and administration to continuously train the teachers for online session and also the use of advanced technology. Moreover the availability to the institution is at most important. The students should know about the importance of online classes even if they miss their school atmosphere. It is the responsibility of the teachers and parents to teach them to cope up with the adverse situation and look forward for their bright future.

CONCLUSION

The COVID-19 pandemic has affected all the aspects of the society like work, schooling, economy, trade, film etc. The impact of COVID-19 pandemic among school life is well understood when we assess the

to COVID-19 pandemic and selected demographic variables. n=348

high school students. High school children are more potential to get affected by the impact of COVID-19 pandemic. Because at the peak of the adolescent age they may wish to spend the time with their friends. Here, the researcher feels that the COVID-19 pandemic and the associated online classes has adversely affected the high school students. This study is an attempt to understand the impact of COVID-19 pandemic in social, emotional, physical and educational aspects.

Conflict of interest statement: All other authors have no conflict of interest to disclose.

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Tourette Syndrome: Parenteral Attention

Rajathi Sakthivel

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Abstract

Tourette syndrome (TS) is a group of disorders of the developing nervous system called tic disorders. It involves repetitive movements or unwanted sounds (tics) that can't be easily controlled. Tics have typically seen between the ages of 2 to 15 years. Males are about three to four times more likely than females to develop TS. A detailed history of the child's behavior from parents and teachers, in addition to observations of the child's behavior, contributes to making the diagnosis. Many people with TS don't need treatment till symptoms aren't troublesome and there's no cure for TS. Many children and adolescents who have TS also have attention problems and academic difficulties. However, most have normal intelligence and do not usually have primary learning. Parenteral attention is needed to confirm the early diagnosis and create awareness to control tics. A comprehensive evaluation of the child or adolescent's psychological, social, and educational status is recommended, as well as a thorough medical, developmental, and family assessment needed to promote the well-being of children.

Keywords: Tourette Syndrome; Tics; Behavior; Attention problems; Counselling.

INTRODUCTION

The inheritance pattern of Tourette Syndrome T(TS) is unclear. Although the features of TS identified the genetic and environmental factors are likely to be involved. A diagnosis of TS is generally made before the child reaches his or her 18th birthday.¹ In the majority of cases, a child is diagnosed within the age of 7 years. Tic behaviors seen in TS change over time and vary in frequency

Author Affiliation: Vice Principal, Hindu Mission College of Nursing, Chennai 600045, Tamil Nadu, India.

E-mail: rajathisakthi80@gmail.com

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and complexity. TS is not a degenerative condition (one that continues to get worse) and individuals with TS have a normal life expectancy.² Tics are irregular, uncontrollable, unwanted, and repetitive movements of muscles that can occur in any part of the body that can be hard to control. Tics can happen randomly and they may be associated with something such as stress, anxiety, tiredness, excitement, or happiness. They tend to get worse if they are uncontrolled.³

Definition

Tourette (too-RET) syndrome (TS) is a neurological disorder characterized by sudden, repetitive, rapid, and unwanted movements or vocal sounds called tics. Tics behaviors vary in type, frequency, location, and severity. In Tourette syndrome, a person has multiple motor tics and at least one vocal tic happening for more than a year.⁴

Corresponding Author: Rajathi Sakthivel, Vice Principal, Hindu Mission College of Nursing, Chennai 600045, Tamil Nadu, India.

Statistics

Children with diagnosed and undiagnosed TS have estimated that 1 of every 162 children has TS. In the United States, 1 of every 360 children at 6 to 17 years of age has been diagnosed with TS, based on parent reports. This suggests that about half of children with TS are not diagnosed. TS can affect people of all racial and ethnic groups. In sex, males are about three to four times more likely than females to develop Tourette syndrome.⁵

Causes

The exact cause of TS isn't known. It's a complex disorder likely caused by a combination of inherited (genetic) and environmental factors. The risk factors are, that having a family history of TS or other tic disorders might increase the risk of developing TS.⁶

Classifications^{2,7,8}

Not all tics indicate Tourette syndrome. Many children develop tics that go away on their own after a few weeks or months. But whenever a child shows unusual behavior, it's important to identify the cause and rule out a serious health problem. The severe symptoms might significantly interfere with communication, daily functioning, and quality of life. The motor (involving movement) or vocal (involving sound) tics of Tourette syndrome are classified as either simple or complex. Motor tics usually begin before vocal tics, but the spectrum of tics that people experience is diverse. They may range from very mild to severe, although most cases are mild. In addition, tics can occur during sleep, and vary in type, and frequency. Tics are classified as,

Simple tics: Sudden, brief, repetitive movements that involve a limited number of muscle groups. They are more common than complex tics.

Complex tics: Distinct, coordinated patterns of movement involving several muscle groups.

Simple Motor tics	Complex Motor tics
Eye blinking	Touching or smelling objects
Head jerking	Repeating observed movements
Shoulder shrugging	Stepping into a certain pattern
Eye darting	Obscene gesturing
Nose twitching	Bending or twisting
Mouth movements	Hopping/Jumping

Table 1: Examples of motor tics in Tourette syndrome

Table 2: Examples of vocal (phonic) tics in Tourette syndrome

Simple tics	Complex tics		
Grunting	Repeating one's own words or phrases		
Sniffing / Coughing	Repeating others' words or phrases (echolalia)		
Throat clearing, Barking	Using vulgar, obscene, or swear words (Coppola)		

Symptoms of Tourette syndrome^{2,4,9}

The symptoms usually begin when a child is 5 to 10 years of age. The first symptoms often are motor tics that occur in the head and neck area. Tics usually are worse during times that are stressful or exciting. They tend to improve when a person is calm or focused on an activity. Even though the symptoms might appear, disappear, and reappear, these conditions are considered chronic. In most cases, tics decrease during adolescence and early adulthood and sometimes disappear entirely. However, many people with TS experience tics that can become worse during adulthood. Although the media often portray people with TS as involuntarily shouting out swear words (called coprolalia) or constantly repeating the words of other people (called echolalia), these symptoms are rare and are not required for a diagnosis of TS.

Diagnosis^{3,7,10}

There's no specific test that can diagnose Tourette syndrome. The diagnosis is based on the history of signs and symptoms. The criteria used to diagnose Tourette syndrome include:

- Both motor and vocal tics are present, though it'snot necessarily at the same time.
- Tics occur several times a day, nearly every day or intermittently, for more than a year.
- Tics begin before age 18 years.
- Tics aren't caused by medications, other substances, or any medical condition.
- Tics must change over time in a location, frequency, type, complexity, or severity.

In rare cases, neuroimaging studies, such as magnetic resonance imaging (MRI) or computerized tomography (CT), electroencephalogram (EEG) studies, or certain blood tests may be used to rule out other conditions that might be confused with TS. A diagnosis of TS might be overlooked because the signs can mimic other conditions. Eye blinking might be initially associated with vision problems, or sniffling attributed to allergies.

Disorders Associated with TS^{5,8}

The most common co-occurring conditions include,

- Attention Deficit Hyperactivity Disorder (ADHD).
- Obsessive Compulsive Disorder or Behaviors (OCD/OCB): repetitive, unwanted thoughts, ideas, or sensations (obsessions) that make the person feel the need to perform behaviors repeatedly or in a certain way (compulsions). Repetitive behaviors can include handwashing, checking things, and cleaning, and can significantly interfere with daily life.
- Anxiety.
- Learning disabilities.
- Behavioral or conduct issues.
- Problems falling or staying asleep.
- Social skills deficits and social functioning difficulties
- Sensory processing issues

There are effective medications and other treatments for people whose symptoms interfere with daily functioning.

Treatment^{3,4,11,12}

Although there is no cure for TS, there are treatments available to manage the tics. Many people with TS have tics that do not get in the way of their daily life and, therefore do not need any treatment. However, medication and behavioral treatments are available if tics cause pain or injury; interfere with school, work, or social life; or cause stress.When tics aren't severe, treatment might not be necessary.

Medications: It help to control tics or reduce symptoms of related conditions including:

- *Medications that block or lessen dopamine. Fluphenazine,* haloperidol (Haldol), risperidone (Risperdal) and pimozide (Orap) can help to control tics. The possible side effects include weight gain and involuntary repetitive movements. Tetrabenazine (Xenazine) might be recommended, although it may cause severe depression.
- *Botulinum (Botox) injections.* An injection into the affected muscle might help relieve a simple or vocal tic.
- *ADHD medications.* Stimulants such as methylphenidate (Metadate CD & Ritalin LA) and medications containing

dextroamphetamine (Adderall XR & Dexedrine) can help increase attention and concentration. However, for some people with TS, medications for ADHD can exacerbate tics.

- *Central adrenergic inhibitors.* Medications such as clonidine (Catapres, Kapvay) and guanfacine (Intuniv) are typically prescribed to control behavioral symptoms such as impulse control problems.
- *Antidepressants.* Fluoxetine (Prozac & Sarafem) might help to control symptoms of sadness, anxiety, and OCD. serotonin reuptake inhibitors (clomipramine, fluoxetine, fluvoxamine, paroxetine, and sertraline) are effective in controlling symptoms of depression, OCD, and anxiety.
- *Anti-seizure medications.* Recent studies suggest that Tourette syndrome responds to topiramate (Topamax), which is used to treat epilepsy.

Supportive management

- *Behavior therapy.* Cognitive Behavioral Interventions for Tics (CBIT), including habit reversal training, can help to monitor tics, identify premonitory urges and learn to voluntarily move in a way that's incompatible with the tic.
- *Psychotherapy.* It can help with accompanying problems, such as ADHD, obsessions, depression, or anxiety.
- *Deep Brain Stimulation (DBS).* For severe tics that don't respond to other treatments, DBS might help. It involves implanting a battery operated medical device in the brain to deliver electrical stimulation to targeted areas that control movement. However, this treatment is still in the early research stages and needs more research to determine if it's a safe and effective treatment for Tourette syndrome.

Coping and support

The tics usually reach their peak in the early teens and improve as get older. School may pose special challenges for children with Tourette syndrome. The school nurse educators teach parents, teachers, school bus drivers, and others with whom the child interacts regularly. The educational need aids inmeeting the child's needs through caretakers and also reduces stressandpsychological well being.

- *Nurture the child's self-esteem:* The child's interests and friendships both can help to build self-esteem.
- *Find a Social support group:* The child can get support from voluntary social organizations to support their emotional being.

CONCLUSION

People with Tourette syndrome can lead an active life with normal life expectancy. The child with Tourette syndrome will cope differently with its physical, emotional, and social challenges but doesn't have to disrupt everyday life. Early identification and supportive management promote the physical and psychological well-being of the child.

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Precocious Puberty: A Clinical Picture, It's Effects and Management

Sudha Singh Mohey

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Abstract

Precocious pubescence consists early growth of bones and muscular parts changes in body form and extent area and growth quality of the body's ability to breed the reason behind precocious pubescence usually cannot be found rarely, sure conditions, like infection, endocrine disorders, tumours, brain abnormalities or injuries, could cause precocious pubescence. Precocious Pubescence may likewise be brought about by Cerebrum Tumours, infected trauma, Hydrocephaly, and Angelman Disorder. Intelligent pubescence is identified with headway in age that winds up in early combination of epiphyses, thusly prompting decreased last tallness and short height. Keeping your child reserved from outer wellspring of Estragon and Androgen like physician endorsed prescriptions for grown-ups inside the house or dietary enhancements containing Estragon and Androgen.

Treatment for precocious pubescence generally includes medication to delay on later development. In medicine field precocious puberty occurring at an oddly early age.

Keywords: Puberty; Pubescence; Oestrogen; Androgen; Epiphyses; Neoplasm; Menstruation.

INTRODUCTION

Precocious puberty is once a juvenile body begins turning into adult at very early. Once pubescence begins before age eight in girls and before age nine in boys, it's thought about precocious pubescence. Precocious puberty contain early bone growth and body Changes in part of its size and quality to breed the reason behind precocious pubescence

E-mail: sudhasinghmohey2013@gmail.com

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usually cannot be found rarely, sure conditions, like infection, endocrine disorders, tumours, brain abnormalities or injuries, could cause precocious pubescence. Treatment for precocious pubescence generally includes medication to delay on later development. In medicine field, precocious puberty occurring at an oddly early age. Among minor age group of kids with precocious time of life, the first development is triggered by a sickness like a neoplasm or injury of the brain.

Even once there's no sickness, remarkably early pubescence will have contrary effects regarding behavioural pattern and development of psychological aspect will cut back grownups body stature potential, and should shift health related risks factors.

Central Precocious Puberty phase of life will be treated by smothering the pituitary hormones that

Author Affiliation: ¹Principal, Shri Swami Samarth College of Nursing and Paramedical Sciences, Harda 461331, Madhya Pradesh, India.

Corresponding Author: Sudha Singh Mohey, Principal, Shri Swami Samarth College of Nursing and Paramedical Sciences, Harda 461331, Madhya Pradesh, India.

actuate sex steroid creation. The other condition is deferred pubescence. The term is utilized with a wide range of implications that are normally clear from the unique circumstance. In its broadest sense, and rarely improved as early pubescence, precious pubescence by and large alludes to any sex steroid that outcome due to any reason, happening before the standard, worn out age, especially may being just about as found as clinical issues. Stricter meanings of early puberty could allude exclusively to central phase of life starting before a genuinely fixed age upheld mark inside the populace. Experts Views regarding age is found a negligible picture likelihood of discovering early occurrence of puberty characters of unusual reason, or supported view on the age at that early time of life could have adverse effects. It usually occur by tumours or growths in the ovaries area, adrenal glands areas, pituitary gland part, or some part of brains. Many more causes which may include central nervous system complications, or may be case in family history of the disease, or some rare genetic syndromes. It is found that among many cases this is no cause being found for the disorder.



Fig. 1: Presentation of precocious puberty at early stage of life by the development of pubic hairs.



Fig. 2: Sign of early puberty in a six year's old girl child

Definition

Puberty is a condition described early a secondary sexual features, accelerated linear

growth, proliferation within sex hormones secretion, maturity of gonads and reproduction ability. Precocious pubescence ought to be thought of once secondary sexual characteristics seem before eight years in girl and nine years in boys.

Causes

Pubertal praecox is a kind of Latin word usually called by physicians since 1790s onward.

Central precocious puberty:

The causative factor which can be found to the hypothalamus or pituitary, and this might be considered a central precocious puberty. In Other words it may also know as complete or true precocious puberty.

Causative factor of Central Precocious Pubescence:

• Impaired inhibitory arrangement of the

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cerebrum regions. Brought about by any Trauma, Irradiation, and Infection.

- Due to improvement of hypothalamic hamartoma causing creation of pulsatile gonadotropin delivering hormone.
- Due to Langerhans cell Histiocytosis.
- McCune-Albright disorder.

Peripheral precocious puberty:

Secondary sexual improvement actuated by sex steroids from elective strange sources is commented as fringe bright pubescence or prompt adolescence.

Causes may consists:

- Endogenous Based Characters.
- Gonadal tumor's like Arrhenoblastoma
- Occurrence of Adrenal Tumor's.
- Germ Cell Tumors.
- Congenital Adrenal Hyperplasia.
- McCune-Albright condition
- Familial male restricted bright Pubescence like EST toxicosis.

ISOSEXUAL AND HETEROSEXUAL:

In some cases, a patient could develop characteristics of the other sex. For instance, a male could develop breast and alternative female characteristics, whereas a feminine could develop a deep voice and facial hair. This is often referred to as heterosexual or contra sexual intelligence. It's terribly rare compared to isosexual puberty and is sometimes the

Results of uncommon circumstances. As Associate example, youngsters with an awfully rare genetic condition referred to as aromatase excess syndrome within which exceptionally high current levels of steroid hormone square measure present sometimes develop precocious pubescence.

Gonadotropin Dependent:

This is frequently conjointly called central intelligent pubescence. This is regularly the first normal assortment of bright pubescence. Most young girls and half young male children with bright pubescence have this sort. The pubescence happen by early discharge of hormone alluded to as gonadotropins. Gonadotropins incorporate luteinizing hormone and follicle incitement hormone. In young girls, precious pubescence could likewise be brought about by the main development of the pituitary organs, neural construction and ovaries. Anyway much of the time, no reason will be found.

Gonadotropin Independent:

This is regularly an assortment of prompt pubescence that is not begun by the first unharness of gonadotropins. Rather it's brought about by early emission of undeniable degrees of sex hormone. These exemplify the male androgens and female oestrogens.

EFFECTS OF PRECOCIOUS PUBERTY

Research

Albeit the reasons for early adolescence region unit still fairly muddled, women WHO have a high fat eating routine and are not actually dynamic or having health or to truly develop prior Obese Young girls, illustrated as at least ten kilograms overweight, had Children 80% probability of creating bosoms before their 10th birthday celebration and start of period before age twelve the western normal for monthly cycle is in regards to 12.7 years. Furthermore to abstain from food and exercise propensities openness to synthetics that copy sex hormone is another possible justification early adolescence in women. Bisphenol a xenoestrogen found in depleting plastics has been displayed to affect sexual turn of events.

Significant degrees of beta-HCG content in blood serum and spinal liquid found during a 9 year old kid suggest a pineal organ tumour the neoplasm is named a chorionic endocrine emitting pineal neoplasm. The use of chemotherapy and the job of radiation treatment diminished neoplasm and beta-HCG levels standardized.

SIGN AND SYMPTOMS³

Precocious puberty symptoms as well as signs represents the abnormal development includes following before age eight in girls and before age nine in boys.

Common presentation in body of girls can include:

- Early condition of development of Breast.
- Development of Pubic and growth of underarm hair.
- Early menarche.

• Early Ovulation cycle.

Commonly Presentations in body of young male Children can consists

- Enlargement of male reproductive parts.
- Beard Development in early age.
- Prompt erections.
- Early development of sperm.
- Early appearance of acne.
- Deepening of Voice.

Other signs and symptoms of the disorder include:

- Emotional behavioural changes Swinging.
- Aggressive behaviour.
- Abnormal Growth in Height compare to other.

RISK FACTORS

Elements that expansion a kid's danger of bright adolescence include:

- *Being a young girl:* Young girls are more inclined liable to foster bright pubescence.
- *Among African-American:* It is tracked down that Precocious pubescence happens among youngsters more regularly than offspring of different races.
- *Obesity Factor:* Prompts Children who are fundamentally discovered overweight are inclined to a higher danger of improvement for bright pubescence.
- *Exposure to sex hormones:* Like estragon or testosterone cream or salve, or different substances which contain these hormones may prompting increment kid's danger for creating prompt pubescence.
- *Presence of various ailments:* It is tracked down that Precocious pubescence might be an entanglement of McCune-Albright disorder or inborn adrenal hyperplasia conditions which include strange proportion creation of the male hormones (androgens). In uncommon cases, bright pubescence may likewise be related with hypothyroidism.
- *Exposure to radiation therapy of the central sensory system:* Radiation treatment for leukemia or tumor's and a lot more oncological conditions

may expand the danger of prompt puberty.¹

DIAGNOSIS

No age faithfully separates traditional from unusual processes in kids, however the subsequent age thresholds for analysis square measure thought to reduce the danger of mission a major medical problem:

- The Breast growth among in boys before occurrence of pubic hair or testicular enlargement.
- Development of secondary sexual characters at age of 9 among boys.
- Development of secondary sexual characters at age of 7 among girls.
- Menarche at age of 10 among girls.
- The induction of maturation of bone and reduction of adult height.
- Leading to a girl child for sexual abuse victim.

Investigations

- X-Rays of kids hand and articulatio radiocarpea are crucial determination prompt pubescence. These X-Rays will work with the specialist affirm your kid's age that shows if the bones square measure developing excessively fast.
- Measurement of essential hormones comprises gonadotropins estradiol, androgen as well as thyroid hormones.
- Ultrasonography of the adrenal organs and balls an analytic imaging method that utilizes high recurrence sound waves and a computer to foster image of veins, tissues and organs. These examination are use region unit acclimated read inside organs as they perform, and to survey blood course through changed vessels.
- Gonadotropin invigorating hormones incitement test which examinations the affirmation of one or the other could possibly your youngster having prompt adolescence or gonadotropin ward or gonadotropin free.
- Magnetic reverberation imaging: a strategy that utilizes a blend of gigantic magnets, radiofrequencies and a computer to give cautious pictures of organs and designs inside the body.



Fig. 3: Treatment for Precocious Puberty in Girls



Fig. 4: Gonda involvement managent in boys

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TREATMENT

One feasible treatment is with anastrozole Histrion, triptorelin, or leuprorelin, any GnRH agonists, is additionally utilized. Non-persistent use of GnRH agonists invigorates the hypophysis to release Follicle Stimulating Hormone and Luteinizing Hormone. In any case, once utilized every now and again, GnRH agonists cause a contracted release ofgonadotropic hormones and ICSH. Drawn out use incorporates a danger of perpetrating pathology. When halting GnRH agonists, season of life changes continue three to a year.

PREVENTIONS

A portion of the opportunity factors for bright pubescence, similar to sex and race, can't be stayed away from. In any case, there square measure stuff you will never really back your kid's prospects of creating prompt pubescence, including:

- Keeping your kid away from outer exposure of estragon and testosterone, for example professionally prescribed meds for grownups in the house or dietary enhancements containing estrogenic or testosterone.
- Encouraging your kid to keep a sound weight.
- Keeping your child unapproachable from outside wellspring of oestrogen and androgen like physician recommended meds for grown-ups inside the house or dietary enhancements containing oestrogen and androgen. Encouraging your kid to take care of a healthy weight.¹

COMPLICATIONS

Probable complications of Precocious Pubescence consist:

• Short stature: It is discovered that youngsters with prompt pubescence may develop rapidly introductory stage and be tall, contrasted and their friends. In any case, because of their bones develop extra rapidly than typical, they as a rule quit becoming in front of common. This will make them be more limited than normal as grown-ups. Early treatment of intelligent pubescence, especially once it occurs in horrendously little youngsters, will work with them become taller than they found without treatment.

• Social and intense psychological matters: Young girls and young men start pubescence some time before their friends could likewise be phenomenally hesitant with respect to the progressions happening in their bodies. This may affect shallowness and increment the risk of gloom or medication abuse.¹

Picture of Prognosis:

Early pubescence is set to put young girls at higher danger of sexual maltreatment; however, a causative relationship is, at this point, uncertain. Early pubescence conjointly puts female kid at the following danger for prodding or tormenting, mental state issues and short height as grown-ups. Serving to adolescent's administration their weight is typically prescribed to help defer pubescence. Early pubescence to boot puts young girls at a far more prominent hazard for carcinoma sometime down the road. Female kid however youthful as eight seem to be logically embarking to menarche, development of breast and bony parts underarm hair these organic achievements ordinarily happened exclusively at thirteen or more seasoned inside the past. African-American young ladies are especially in danger of early pubescence. There are speculations discussing the pattern of early pubescence anyway the exact causes don't appear to be recognized.

CONCLUSION

The most well-known etiological components of precocious pubescence among young girls was as yet idiopathic. It is tracked down that prompt pubescence and early untimely in young

girls, while among male children it is discovered that they were neurogenic prompt precocious pubescence. Subsequently bright pubescence among young girls is typically found generous. In male children, Central Nervous System abnormalities would be considered in the differential examinations of bright pubescence. Accordingly it is discovered that mind Magnetic Resonance Imaging is important to distinguish the reason in all cases.⁴ Albeit different examinations presumed that patients with early pubescence happening with regards to a prior clinical finding. The significant proportion of patients who were explored were reflects neurological or potentially mental problems, some satisfying the analytic models of a condition, and others not. Shockingly high proportions of chromosomal anomalies were distinguished in dissected patients. Different examinations are found critical to research the pathophysiology through which early pubescence is set off in kids with muddled image of clinical history.⁵

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