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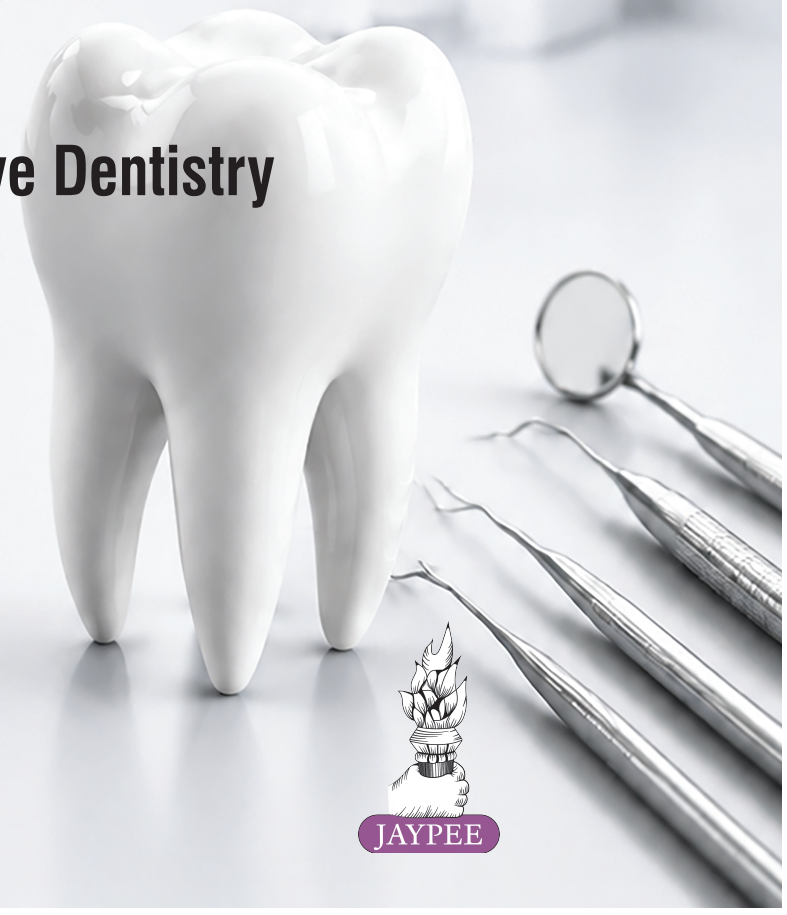
Mastering the BDS IVth Year-II

11th Edition

Last 15 Years Solved Questions

Image-based Questions as per NEET-MDS & INI-CET Examination

- Conservative/Operative Dentistry
- Endodontics
- Oral Surgery
- Prosthodontics
- Pedodontics



Hemant Gupta

JAYPEE

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Multiple Choice Questions as per NDC and Examination Papers of Various Universities

Fill in the Blanks

Additional Information

One Liner (Knowledge Enhancers)

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PEDODONTICS

1. CHILD AS A PATIENT

Q.1. Write short note on pedodontics treatment triangle.
(Dec 2015, 3 Marks)

Or

Write short note on pediatric triangle.
(Oct 2015, 5 Marks)

Or

Write short note on pedodontics triangle.
(Mar 2018, 4 Marks) (Mar 2015, 5 Marks)

Or

Write short note on pedodontic treatment triangle.
(Mar 2019, 4 Marks) (Oct 2015, 5 Marks)

Or

Write short answer on pedodontic treatment triangle.
(Sep 2022, 3 Marks) (May 2016, 3 Marks) (Feb 2026, 3 Marks)

Or

Write short note on pedodontic treatment triangle.
(Nov 2020, 4 Marks)

Or

Write short answer on pedodontic triangle.
(Mar 2022, 3 Marks) (Sep 2023, 3 Marks)

Ans. Major difference between the treatment of children and an adult is the treatment relationship.

- Treatment relation between the dentist and the adult patient is 1:1 in case of a child patient and the relation is 2:1. This is because both parent and child are involved.
- This relationship represented by the pedodontic treatment triangle as given by Wright.
- The child occupies the apex of the triangle and is the focus of attention of both the dentist and the parent.
- All three are interrelated.
- Recently society has been added, meaning the influences of the society on the child has been considered affecting the treatment modalities.
- During the treatment of child, he should not be treated as single separate entity as his/her behavior depend on his/her parents or the complete family.
- Arrows shown in the triangle are correlated with each other and these are dynamic or ever-changing.
- Mother of the child play an important part in child's behavior as she is closely attached to the child, other members also play an important role.
- Attitude of the patient, which moulds, shape and directs child behavior during early period of development is affected by socioeconomic status, cultural development as well as ethnic background.
- Socioeconomic status of the family directly affects its attitude towards the value of dental health process.
- Low income groups or parents with below average education have a tendency to attend the dental needs when symptoms dictate. Some of these families harbor anxieties and fear of dental treatment and their children have these fears and are tend to be less cooperative.
- Cultural standards and the ethnic orthodoxies have some bearing over the degree of acceptance of dental health measures. Their close attitude fosters the anxiety among the children and produce disparate behavior forms.

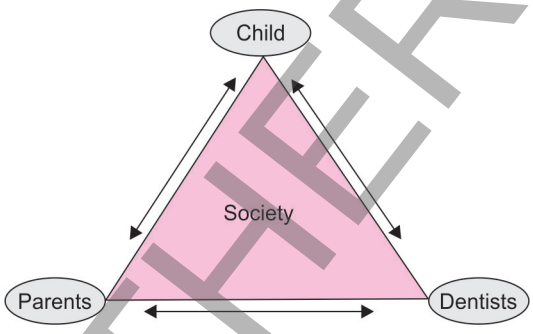


Fig. 1: Pedodontic treatment triangle.

Triangle Indicates

- Child is focus of attention of both parent and dentist.
- Arrow show reciprocal relationship.
- The dentist has to communicate with child as well as parent.

Q.2. Discuss setting-up of pedodontics dental clinic.
(Dec 2012, 8 Marks)

Or

Write short note on set up of pedodontics clinic.
(Mar 2015, 5 Marks)

Ans. Today is the age of consumerism and people want lots of information as possible, before starting a new practice various aspects must be considered, because marketing a professional practice is very hard. So, before setting up a pedodontic clinic following points should be considered:

1. **Location:** First priority is to select a location for establishing a clinic. There are many factors which should be considered in locating a dental office for the type of practice dentist wish to establish. *Following points are:*
   - *Check social and economic status of residing people:* Location of dental clinic should ideally reflect the target population patted and the dentist to population ratio in that area. It is easy to start the practice where need exist, then carve-out a share of already overcrowded market. It is important to know that social and economic status of the people residing in that particular area.
   - *Easy access to school:* If possible, dental office should be nearer to well established neighborhood school which helps in enhancing the pedo patients to clinic.
   - *Transportation and parking facility:* A dental office should be in high visibility, high traffic location and near well-recognized famous area so that every time patients can reach easily with busy schedule and the increasing cost of driving. Every pediatric clinic should have proper space available for parking.
2. **Office decoration or organization:** Once the location is selected the type of decoration must be considered. If one has to limit one's practices to children the entire office from the reception room through the treatment room can have a definite modification.

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- *The reception area:* Reception area is designed to be patient and parent oriented. An attractive and comfortable environment should be designed for both children and parent. The interest of patients of preschool age through the late teenage period needs to be considered as well as the interests of adults. Excitable stimulating atmosphere should be created universally by the use of many bright color and design.
- *Waiting room:* Waiting room is an important part of reception area. It should be well lighted. Preferable with ceiling or well attached handicraft fixtures. Waiting room can also be used to present dental health material. Fantasy characters on the wall and color of the room. Bright color and design make the room excitable and stimulating. Neutral color such as light green or blue for wall décor promote a tranquilizer feeling and permit the use of attractive color accessories such as pictures, wall paper murals magazine holder. Fantasy character on the wall make the environment more familiar and friendly for children, it amuses the children a lot. Various decoration themes could be created by me of maps and pictures of foreign countries, other themes may be related to education history, transportations, science and animals picture in the natural habitat, season or holidays.
- *Children chair and table:* Children chair and table should be available with cartoon character made on it where they can sit and read. This helps in making children comfortable.
- *Small library:* A beautiful and small library should be made in the waiting room. Reading material, magazine, publication must be kept there for various age group and it should include a wide range of topics. Usually children visit dental clinic with their parent, mother. Cookbooks afford busy mothers interesting reading. A pad and pencil can be placed alongside the cookbooks for the mother to copy any recipes. Thus, an interesting and productive waiting period is provided to the mother while the child is in the treatment room.
- *Soothing music:* Soothing and muffled music in the reception room have a comforting effect on both parent and patient and dispel coldness often felt in a silent room. A handy record player with well chosen record or a tape recorder and amplification system will provide comfort to frighten, fearful and tearful children.
- *Television:* A TV set must be kept in one corner of the room for the entertainment. Some cartoon channel, for example (POGO, Cartoon network) must be available.
- *Aquarium:* An aquarium is always a source of entertainment and may be placed either in the reception room or in the treatment room where it is visible to the child. It helps in behavior modification.
- *Appointment cards:* Appointment cards and appointment announcement should be made educative and so it helps in behavior modification of children. So, the child feels that these are addressed to him. A sketch of some character of fantasy on the cards will help in doing this.
- *Refreshments:* An investment of few hundred rupees in decorating the reception room can make a big difference in practice. Coffee, tea, juice and fresh fruits are very inexpensive, but are nice touches that may create a warm and friendly atmosphere.
- *Play room:* A small play room should be made near to waiting room. Different shape, size and colored toys can promote a child's interest in providing a home like atmosphere and indirectly convey to the child that the staff is interested in him or her. Selected toys preferably of large size including building blocks and wall attached activity center have proved to be main attraction of children of all ages.
- *Operating room:* The operating room may be made well appealing to the child if good animal pictures in their habitat are present on the wall and are suggestive of children at play or a portrait of a carefree and laughing child is always good. Television can be fixed to ceiling or near the dental chair at eyelevel. It serves as a distraction. All the equipment must be placed in such places where it is not much visible to the child.
- *Dental personnel:* Dentist should realize the limitation of his allotted working tune and should employ personal or attendant dental staff to permit him more time for those tasks that cannot be delegated to others.
- *Receptionist:* Each time a child visits the dental clinic the receptionist will transfer the child and the parent from the reception room to the dental health education and prevention area. Receptionist is the person who first interact with the parents and child patient so they should complete the basic information and health history forms efficiently and cautiously. Receptionist should give the best suited appointment to the patient according to their own choice.
- *Hygienist:* The hygienist can make an important contribution to dental care of a child. The efficient utilization of chair side assistance is extremely important in a pedodontics practice because:
  - It decreases the length of dental appointment thus aiding in child management.
  - It decreases the number of steps and movement necessary, resulting in less fatigue to pediatric dentist.
  - To get more efficient chair side assistant, modern equipment are required. Contoured chair have been found most elective in children practice. Patient rest in a supine position with his body lies parallel to the floor and feet slightly elevated. Dentist operates in a sitting position on a comfortable contoured stool. All equipment are conveniently located near the assistant such as high and low speed suction, airotor handpiece and water syringes are mounted on a bracket extending partially over the chair.
  - Well integrated instructions make it possible for these instruments to be handed to the dentist as needed. The assistant has everything needed or any specific procedure within easy reach without leaving the chair. The amalgamator and all needed general supply and drugs should be available in a portable cabinet and it should be present alongside of the assistant.

Health Education Room

- Space should be allocated in the dental office where the child and parent can be given proper instruction about preventive procedures. Although this information can be presented in any area of the dental office a separate room away from possible area of stress to the patient is most desirable.
- Instruction in oral hygiene procedure should be explained fully and participation by the child should be made mandatory until toothbrushing and flossing become an established habit pattern. This may require observing the patient go through routine number of times.

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- There are many adjuncts available recently in kit form to teach the children and attendant or parent. Educating the parent is desirable to supervise the child while performing these duties at home. Slides, film strips, records, films, pamphlets, charts and models are available from number of sources.
- Predicate dentist should emphasize plaque control regime. Plaque removal must be an integral part of the educational program. Technique arch as plaque staining and the phase microscope to demonstrate viable microorganism are valuable teaching aids to convince both the parent and patient. A well illuminated mirror before which children can practice and perfect their toothbrushing and flossing technique will be of great benefit. Caries activity test can also be used as an educational tool.
- **Nitrous oxide OT:** A different operatory should be made in the pedodontics clinic for the procedure to be undergone under general anesthesia, proper position of personnel and equipment should be given in operating room.

Modification of Clinic for Disabled Child

A disabled child is one who has mental physical or social condition that prevent the child from achieving full potential when compared to other children of the same age.

- Disabled children present challenges that require special preparation before the dentist and office staff can provide acceptable care. In addition, parental anxiety concerning the problems associated with a disabled child frequently delay dental care until significant oral disease has developed, some dentist feel uncomfortable providing treatment for disable children this feeling may result in loss of greatly needed service.

Dental Office Access

The rapidly expanding elderly population, the presence of disable children and the emergence of progressive legislation for people with disabling condition of all ages are three important factors that should prompt dentists to address cost efficient way to make their office facilities and operatory area accessible for person with disabling condition.

- In the dental operatory, a 4 feet wide width should be used in the doorways. In the dental suite where floor circulation is at premium aisle passage in the operatory area should be planned.
- Wheelchair turning space and top space under furniture and fixtures may be more readily accommodated if one operatory is specifically designed with a movable dental chair, instrument control unit and suction system.
- Movable equipment and dental chair should enhance the opportunity to back the patient into the operatory. Thus, enhancing the need for more wheelchairs turning space. If possible a wider turning rod would be desirable to accommodate wheelchair extensions and adaptation that are required by some persons.
- Dental chair should be adjustable according to height of different wheelchair design. If patient cooperation cannot be obtained the dentist must use alternative instruments and methods such as physical restraint and sedation.

Q.3. Discuss the scope of preventive dentistry as applied to pediatric dentistry. *(Dec 2012, 8 Marks)*

Ans. Prevention is always better than cure, not only does it save the patient from physical and emotional trauma but also saves a lot of time, money and maintains over all good general health. Therefore when dealing with a child in an early stage in life prevention is the prime objective.

- Taking preventive measures in early childhood makes it possible to preserve sound tooth and maintain oral health.
- To be capable of handling the majority of needs of a child, a dentist has to know all preventive techniques including pulpal therapy, instrumentation, restoration of teeth, dental materials, oral surgery, preventive and interceptive orthodontics.
- In addition, he must be well versed with all parameters of pediatric medicine and psychology.
- Dentist who wants to master the art of child dentistry has to know when to transform his knowledge from other branches and modify the treatment according to the child's needs.
- In 1942 when pediatric dentistry was recognized as a specialty, the common needs of the children were restoration of carious teeth, treatment of dental pulp and maintenance of tooth space. Preventive modalities of treatment were limited in practice. Diagnostic techniques and materials for pediatric use needed to be developed.
- With the changing trends and development there has been a tremendous increase in the scope of pedodontics. Various factors responsible for this are:
  - Professional and public recognition of dental health for the general well-being of the child. This indicates the increased knowledge in the public sector regarding child dental health care.
  - Wide recognition of fluorides as the most effective health agent in the prevention of dental caries. This is gaining momentum even in India.
  - Introduction of high-speed technology in the preparation of teeth requiring restoration.
  - Great improvement of various anesthetic agents in clinical use.
  - Introduction of the system of sophisticated plastics, i.e., composites, ionomer cements, compomer, pit and fissure sealants.
- Preventive practice has now become dominant branch in pedodontics.

Q.4. Write short answer on definition of pedodontics and scope of pedodontics. *(Feb 2019, 3 Marks)*

Or

Write short answer on scope of pedodontics. *(May 2019, 3 Marks)*

Or

Write short answer on AAPD definition of pediatric dentistry. *(Mar 2022, 3 Marks)*

Or

Define pediatric dentistry. *(Sep 2023, 3 Marks) (Feb 2023, 3 Marks)*

Or

Write short answer on definition of pediatric dentistry. *(Mar 2024, 3 Marks)*

Or

Write short answer on scope of pediatric dentistry. *(Sep 2025, 3 Marks)*

Ans.

Definitions of Pedodontics

Pediatric dentistry is the practice and teaching of comprehensive preventive and therapeutic oral health care of child from birth to adolescence. It is constructed to include care of special patients who demonstrate mental, physical or emotional problems.

—Stewart, barber, Troutman and Wei (1982)

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Pediatric dentistry is also known as Pedodontics and as dentistry for adolescents and children, it is the area of dentistry concerned with preventive and therapeutic oral health care for children from birth through adolescence. It also includes special care for special patients beyond the age of adolescence who demonstrate mental, physical or emotional problems.

—American Academy of Pediatric Dentistry (1985)

Pedodontics is the branch of dentistry that includes having a child accept dentistry, prevention, detection, restoration of primary and permanent dentition, applying preventive measures for periodontal therapy, dental caries prevalence, intercepting and correcting various areas of malocclusion.

—Boucher's Dental Terminology (1993)

Pediatric dentistry is defined as a specialty that provides both primary and specialty, comprehensive, preventive and therapeutic oral health care for infants and children through adolescence including those with special health care needs.

—American Association of Pediatric Dentistry (1999)

Scope of Pedodontics

- It encompasses variety of disciplines, techniques, procedures and skills which logically share a common basis with other specialties but are modified, transformed or adapted to special needs of children and adolescence and those with the special health care needs.
- Pedodontic dentistry focuses on the integration of appropriate didactic and clinical knowledge from various specialties into a framework of quality oral health care for the children.
- Pedodontics is an age specific specialty, so it encompasses all aspects of dentistry which also include some aspects of other specialties.
- Pedodontics deals with parents in their formative years, exhibiting rapid growth and development. Therefore, a pedodontist is in an excellent position to alter the growth pattern and resistance of oral tissues to diseases.
- Pediatric dentists have extended services to fulfill the needs of the special child including the physically, mentally and medically handicapped. They also have the good fortune of being important team member in the children's hospital and in the management of cleft lip and palate patients and other such ailments.
- Pedodontist can now expand the scope of practice towards goal of prevention, endodontic treatment and high quality restorative and cosmetic dentistry and also the early treatment of periodontal diseases.
- Scope of pediatric dentistry virtually gets increasing. It is exciting to look ahead as the specialty evolves, redefines it boundaries and seek to collaborate with other specialties in dentistry and pediatrics.

Q.5. Write short answer on infection control in pedodontics. *(Nov 2017, 3 Marks)*

Ans. Infection control is the prevention of the disease transmission from patients to staff, staff to patient and from one patient to another.

Any of the infection control procedure which does not only protect the healthcare providers but it also protects the patients.

There are various modes through which the infection can spread in the dental clinic, so proper infection control guidelines are followed for the reasons mentioned below:

- Since all the infected child patients should not be identified by their medical history, physical examination or lab tests, Center for Disease Control recommends that the blood and the body fluid precautions should be used consistently for all the patients; these are known as the universal precautions.
- Common microorganisms which affect the dentists and also the dental patients are staphylococci, streptococci, hepatitis B and C, herpes simplex 1 and 2, HIV, *Mycobacterium tuberculosis*, etc.

Infection Control for the Dental Team

- While giving the employment, it should be thoroughly checked that dental health staff is adequately immunized.
- To prevent the contact along with the spatter, foreign bodies (such as amalgam fragments) and aerosols, dental healthcare workers should position patients properly and make the use of rubber dam, high velocity evacuators and the personal protective barriers.

Personal Protective Barriers

- They are must and are inclusive of gloves, mouth and facemask, head cap and eyewear glasses.
- In the high-risk patients, double gloves should be worn and then disposed off safely.
- Change the masks after 20 minutes of surgical procedure in humid climate and 60 minutes in dry climate between patients or during long procedures on one patient.
- Press the edges of mask against the bridge of nose and face. Mask should be handled only at periphery.
- Put an eyewear before gloving and removed after degloving. It should be placed on paper towel and sprayed with a water-based disinfectant for at least 5 minutes, rinsed and dried.
- Cover the hair with surgical cap.
- Remove the protective attire before leaving work area.

Hand Hygiene

- Hands should be washed:
  - Before and after treating each and every patient.
  - After bare hand touching of the inanimate likely to be objects contaminated by blood or saliva.
  - Before leaving the dental operatory.
  - When hands get visibly soiled.
  - Before regloving after gloves are torn or punctured.
- Routine hand asepsis is done by using water and the antiseptic agents, such as chlorhexidine, iodine and iodophors, triclosan or alcohol based hand rubs from finger tips to wrist for at least 15 seconds.
- Usage of liquid soaps with hand free controls is carried out. Lotions having petroleum or other oil emollients can affect the integrity of gloves and should not be used.

Decontamination of Dental Equipment and Instruments

- Clean and dirty areas for the practice should be clearly identified and this decreases the risk of cross-contamination.
- There are three stages of decontaminating dental instruments and equipment:
  1. Presterilization cleaning
  2. Sterilization
  3. Storage
- Approved disinfectants given by National AIDS Control Organization are:
  - Povidone iodine 1%
  - Sodium hypochlorite 5%
  - Glutaraldehyde 2%
- Four of the accepted methods of the sterilization in a dental clinic are:
  - Steam pressure
  - Chemical vapor pressure

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- Dry heat sterilization
- Ethylene oxide sterilization

- The operatory surfaces which are repeatedly touched should be barrier protected.
- Dental unit waterlines are flushed for 2 minutes at the start of each day and for 20–30 seconds in between the patients.
- Decontaminate the hand-pieces after being used on each patient. Handpieces should also be autoclaved or sterilized with ethylene oxide.
- Ultrasonic cleaning baths offer an effective method for cleaning the intricate, jointed or serrated stainless steel and metal instruments and items that are heavily soiled.
- Storage of the wrapped instruments should be done in the sealed pouches after they are dry.
- Burs should always be cleared of debris, autoclaved or are immersed in 2% glutaraldehyde permanently.
- Autoclave the files and reamers after removing the debris and disinfecting.
- Rinse the impressions thoroughly with tap water and sprayed with the disinfectant like 2% glutaraldehyde and then rinse again before pouring the cast.

Management of the Sharp Instruments

Precautions which are to be taken for the needles and other sharp instruments:

- Needles and syringes should always be passed in a tray.
- Preferably cut needles with the help of needle cutters.
- Cap of the needle should be removed near site of injection.
- Dispose of the needle safely.
- Documentation of the sharp injury should be done and this should be managed by the prophylaxis and immunization.

Clinical Waste Management

Biomedical waste should be managed as per the guidelines:

- Infectious items for incineration should always be disposed in yellow bags.
- All of the plastic items should be disposed in red bags.
- Non-infectious materials should be disposed in the black bags.
- Amalgam should be disposed off in the special containers.

Infection Control for Patients

- A pre-procedure mouth rinse is always carried out for all the patients to decrease the number of microbes in patient's mouth.
- Protective glasses and drapes should be used routinely for the safety of patient.

Q.6. Enumerate stages of treatment planning.

(May 2018, 3 Marks)

Ans. Following are the stages of treatment planning:

- Systemic phase
- Preventive phase
- Preparatory phase
- Corrective phase
- Maintenance phase

Q.7. Write short answer on dental first visit.

(Feb 2023, 3 Marks)

Ans. In 1986, the American Academy of Pediatric Dentistry (AAPD) adopted a position on infant oral health recommending that first visit of child to dental clinic occur within 6 months of eruption of first primary tooth. Recent knowledge in the aspects of the cariology as well as the prevention have modified this further and it is now stated that the first visit of the child to dental office should occur as soon as tooth erupts in an oral cavity, i.e., 6 months of age. (Recent guidelines by AAPD 2021).

Parents Role in Preparation of Child for First Dental Visit

Some of necessary things which parents should perform before child's appointment are:

- Before going for visit, ask the dentist about all the procedures of first appointment so there are none of the surprises.
- Plan the proper course of action for your child who can exhibit cooperative or the noncooperative behavior. Very young children can be fussy and may not sit still at a place.
- Talk to the child about what to expect, and build the excitement and understand about an upcoming visit.
- Bring with you to appointment any of the records of child's complete medical history.

Pre-appointment Behavior Modifications

First dental visit of the child is made successful by some of the pre-appointment preparations:

Pre-appointment Mailing

- Parents try in some of the way to prepare the child for the dental visit. Some parents, through their own fears or ignorance, do more harm than good in this attempt. Establish the contact with the child's parents before first dental visit can alleviate some of the concerns.
- Pre-contact can give the directions for preparing child patient for an initial dental visit and, so increase the likelihood of successful first appointment.
- Parents sometimes try to prepare their child for visit by saying that 'the dentist will not hurt', or by bribing them to be good with promise of a toy.
- Parents should be informed via mail in the casual manner. It is advised to inform child, either on morning of the appointment or on the day before, that he or she will be visiting the dentist. Child is told that dentist is just only going to count his or her teeth and he will be helping the child to look after their teeth in the better way.
- Suggestion is provided to avoid the conversation in home that might include unfavorable references to dentistry.
- Parents should be informed via same mail about procedures which will be carried out at the time of first visit. This will alleviate anxiety as well as concerns of parents regarding child's visit to dental clinic to some of the extent.

Preappointment Modeling

Modeling is the type of behavior modification technique where young patient can learn about dental experience by viewing other children receiving the treatment. Modeling is of two types, i.e., audiovisual modeling and live modeling.

Audiovisual Modeling

- Here, child visualize a video tape or film before proceeding to dental clinic.
- This is carried out on the day of appointment or perhaps at previous visit.
- This presentation explains that a child can understand dental equipment as well as the procedures which occur.
- Advantage of this method is that this is a prerecorded commercial presentation, so the things are removed from this which possess negativity in the child.

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- Disadvantage of this technique is need for special equipment as well as the space for presentation which makes this method expensive and unless the procedure should be developed by dentist, it can be impersonal.

Live Modeling

- This should be achieved via the siblings, other children or the parents.
- As observing of the child will likely get initiated with the dental examination, a parent's recall visit offers an excellent modeling opportunity. On such occasions, many of the young children climb on dental chair following their parent's appointments.
- It is seen that sibling proves to be a better model as compared to their parents. At times, younger sibling can play role of a model but it is better to have older sibling in this function. This is because in house an elder brother or sister plays the role of role model for younger ones. This remains better if model is of same sex.
- When a cooperative sibling is absent a non-related child can be used as a good model.
- Disadvantage of this method is that, sometimes model himself or herself can demonstrate some of the disruptive behavior which possess an improper impact over behavior of child. So the models should be selected carefully.

Recommended Procedures to be Carried Out in First Visit

- Many of the first visits are the introductory icebreakers to get familiar your child with dentist and their practice.
- If child become frightened, uncomfortable or noncooperative rescheduling can be done.
- Both patience as well as the calmness on part of parent and the reassuring communication with your child are very important in such instances.
- Short and the successive visits should be meant to build child's trust in both dentist and the dental office, and can prove invaluable if the child needs to be treated later for any of the dental problem.
- Appointments for the children should are scheduled earlier in the day, when child remains alert and fresh.
- For the children who are under the 2 years of age parent may have to sit on dental chair and hold child at the time of examination while for older child, parents may be asked to wait in reception area so a relationship can built between the child and the dentist.

Every effort is made by complete dental team to make first dental visit of child as comfortable and as enjoyable as possible.

Q.8. Write short answer on importance of primary teeth.
(Mar 2024, 3 Marks)

Ans. Following is the importance of primary teeth:

- **Mastication of food:** As primary occlusion gets established, child is able to chew the food efficiently. For masticatory phenomenon neuromuscular coordination is required which is established during primary dentition stage by itself.
- **Taking of proper diet:** Deciduous teeth are the only teeth present from 6 months to 6 years of age, so it is necessary to maintain them so that child can get comfortable functional occlusion. Child with the missing or decayed primary teeth feels difficulty in chewing the food and he/she may reject the food which is difficult to chew.
- **Maintains normal facial appearance:** A good maintained set of deciduous dentition contributes to normal facial appearance as well as normal psychological and cognitive development of the child. Prematurely lost or carious front teeth diminishes child's self-confidence.
- **Provides clear speech:** Anterior teeth are essential for normal speech of some vowels, such as 'S', 'C', etc. If teeth are lost they can lead to the defective speech of the child.
- **Prevention of deciduous teeth from infection:** It is important to treat dental caries and prevent primary teeth from further periapical abscess formation and possible complications because they can affect underlying permanent tooth germs and may lead to Turner's hypoplasia, i.e., brown spots of crowns of permanent teeth.
- **Maintenance of normal eruption of permanent successors:** As primary teeth are lost prematurely due to caries or trauma the normal eruption schedule of permanent teeth gets which can lead to malocclusion.
- **Maintenance of space for normal eruption of permanent successor teeth:** Primary teeth preserves the space for eruption of their permanent successor teeth. Adequate physiologic spacing in primary dentition leads to the development of normal occlusal relations in permanent dentition. If primary teeth lost prematurely, the adjacent teeth migrate into the available space leading to a decrease in the arch length which causes a lack of space in the arch for the erupting permanent successors and results in the development of malocclusion.

2. NORMAL GROWING CHILD

Q.1. Write short answer on Id, Ego, Superego.
(Mar 2024, 3 Marks) (Feb 2023, 3 Marks)
Or
Write short answer on ID, ego and superego.
(Sep 2022, 3 Marks)

Ans. Sigmund Freud gives classical psychoanalytical theory for psychological development.

Freud proposed a structure called as psychic triad that essentially has three parts, i.e., id, ego, superego.

Id

- It is the most primitive part of personality.
- It is the basic structure of personality, which serves as a reservoir of instincts.
- Id is the source of all gratification and pleasure, it represents the unconscious, instructive urges that motivate behavior.
- Id can be defined as inherited reservoir of unorganized drives.
- It is governed by the pleasure pain principle, aims of immediate satisfaction of libidinal urges, is immoral, illogical and lacks unity of purpose.

Ego

- It is the ego that makes the necessary interaction with the social world possible and permits the needs of id to be satisfied.
- Ego can be defined as the integrating or mediating part of personality which develops out of interaction of id and environment.
- Ego is governed by the reality principle.
- Ego acts as a mediator between id and superego.
- Ego helps in channelizing id in social acceptable method.

Superego

- It is that part of personality that is internalized representation of the values and morals of society as taught to the child by parents and others.

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- The superego acts as a conscience, it is the internal part of the individual that makes value judgments.
- Superego stems from internalization of feeling love and hate, good and bad, praising and forbidding, reward and punishment.
- Superego is governed by the moral principle.
- Superego is linked to the social consciousness which is derived from familial cultural restrictions which are placed over the growing child.

Freud believed that many personality disorders come because of a conflict between the ego and the superego.

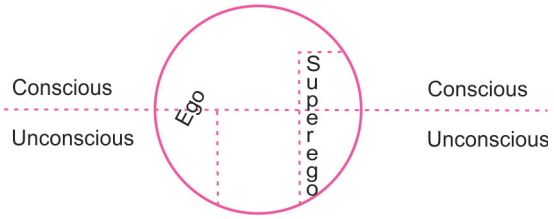


Fig. 2: Psychic triad.

Q.2. Discuss in detail Erik Erickson's psychosocial theory.

(Mar 2017, 10 Marks)

Ans. Following are the stages of personality development according to Erikson.

Stage 1: Infancy—Age 0 to 1 Year

Crisis: Trust versus Mistrust

- **Description:** In the first year of life, infants depend on others for food, warmth and affection and therefore must be able to blindly trust the parents (or caregivers) for providing these.
- **Positive outcome:** If their needs are met consistently and responsively by the parents, infants not only will develop a secure attachment with the parents but will learn to trust their environment in general as well.
- **Negative outcome:** If no, infant will develop mistrust towards the people, environment and even towards themselves.
- **Dental application:** This stage identifies with development of separation anxiety in child. So, if necessary to provide dental treatment at this early stage, it is preferable to do with the parent present and preferably with parent holding the child.

Stage 2: Toddler—Age 1 to 2 Years

Crisis: Autonomy versus Doubt

- **Description:** Toddlers learn to walk, talk, use toilets and do things for themselves. Their self-control and self-confidence begins to develop at this stage.
- **Positive outcome:** If parents encourage their child's use of initiative and reassure him when he makes mistakes, the child will develop the confidence needed to cope with the future situations that need choice, control and independence. The parents should not discourage the child, but neither should they push. A balance is required. People often advise new parents to be "firm but tolerant" at this stage. This way, the child will develop both self-control and self-esteem. Virtue of will emerges at the time of second stage of life. Child learn from themselves and from others what is expected and what is expectable. Elements of will are increased gradually through experiences involving awareness and attention, manipulation, verbalization and locomotion.
- **Negative outcome:** If parents are over protective or disapproving of the child's acts of independence he may begin to feel ashamed of his behavior or have too much doubt of his abilities. Another failure factor is unrestricted freedom, or if you try to help children do what they should learn to do for themselves, you will also give them the impression that they are not good for much. If you are not patient enough to wait for your child to tie his or her shoe-laces, your child will never learn to tie them, and will assume that this is too difficult to learn.
- **Dental application**: Child is moving away from mother, but still we retreat to her in threatening situations. So parent's presence is essential in dental clinic. At this stage as the child takes pleasure in doing tasks by himself/herself; dentist must obtain cooperation from him by making him believe that the treatment is his choice not of the parent/dentist.

Stage 3: Early Childhood—Age 2 to 6 Years

Crisis: Initiative versus Guilt

- **Description:** Children have newfound power at this stage as they have developed motor skills and become more engaged in social interaction with people around them. They now must learn to achieve a balance between eagerness for more adventure and more responsibility and learning to control impulses and childish fantasies.
- **Positive outcome:** If parents are encouraging but consistent in discipline, children will learn to accept without guilt that certain things are not allowed and at the same time will not feel shame when using their imagination and engaging in make believe role plays.
- **Negative outcome:** If no, children may develop a sense of guilt and may come to believe that it is wrong to be independent.
- **Dental application:** Child may be encouraged to view this visit as new adventure and is encouraged to genuine success in it. If there is failure in this visit, this causes sense of guilt in child. Child should be inherently teachable at this stage and so can be taught about various things in dental set up.

Stage 4: Elementary and Middle School Years—Age 6 to 12 Years

Crisis: Industry versus Inferiority

- **Description:** Here child learn basic cultural skills, such as school skills. Child who, because of his successive and successful resolutions of earlier psychosocial crisis is trusting, autonomous and full of initiative will learn easily enough to be industrious. However, the mistrusting child will doubt the future. Shame and guilt filled child experience defeat and inferiority.
- **Positive outcome:** If children can discover the pleasure in intellectual stimulation, being productive, seeking success, they will develop a sense of competence.
- **Negative outcome:** If the child is allowed too little success, because of harsh teachers or rejecting peers, then he/she will develop a sense of inferiority and incompetence.
- **Dental application:** Child drive for sense of industry and accomplishment, cooperation with treatment can be obtained. This needs to be reinforced positively. Cooperation during this stage depends on whether he/she understand what is needed to please dentists/parents, whether the peer group is supportive and whether the desired behavior is reinforced by the dentist.

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Stage 5: Adolescence—Age 12 to 18 Years

Crisis: Identity versus Role Confusion

- **Description:** This is the time when we ask the question 'who am I'? To successfully answer this question Erickson suggests the adolescent must integrate the healthy resolution of all earlier conflicts; adolescents who have successfully dealt with earlier conflicts are ready for the Identity crisis, which is considered by Erickson as the single most significant conflict a person must face.
- **Positive outcome:** If the adolescent solves this conflict successfully he will come out of this age with a strong identity and ready to plan for the future.
- **Negative outcome:** If not they will fear commitment, feel isolated and unable to depend on anybody in the world. Failure leads to isolation from others and is likely to be accompanied by strong prejudices and a set of attitudes that serve to keep others away rather than bringing them into closer contact.
- **Dental application**: Behavior management of adolescents can be challenging. Any orthodontic treatment can be carried out if child wants it and not parents at this stage, parental authority has been rejected. Approval of peer group is very important.

Stage 6: Young Adulthood—Age 19–40 Years

Crisis: Intimacy versus Isolation

- **Description:** In this stage, the most important events are love relationships. No matter how successful you are with your work, said Erickson you are not developmentally complete until you are capable of intimacy. An individual who has not developed a sense of identity usually will fear a committed relationship and may retreat into isolation.
- **Positive outcome:** The adult individuals can form close relationships and share with others if they have achieved a sense of identity. Success leads to the establishment of affiliations and partnerships both with a mate and with others of the same sex, in working toward the attainment of career goals.
- **Negative outcome:** If not they will fear commitment, feel isolated and unable to depend on anybody in the world. Failure leads to isolation from others and is likely to be accompanied by strong prejudices and a set of attitudes that serve to keep others away rather than bringing them into closer contact.
- **Dental application:** During this stage, external appearances should be very important as this helps in gaining of intimate relation. These young adult seek orthodontic treatment to correct their dental appearances and this is characterized as internal motivation. Alteration of appearances can also interfere with previously established relations, so treatment options should be explained fully and are discussed with young adults.

Stage 7: Middle Adulthood—Age 40–65 Years

Crisis: Creativity versus Stagnation

Description: By generativity Erickson refers to the adult's ability to look outside oneself and care for others through parenting. The next generation is guided in short not only by nurturing and influence's ones own children but also by supporting the network of the social services which are needed to ensure the next generation's success. Opposite personality trait in adults is stagnation which is characterized by self indulgence and self - centered behavior.

- **Positive outcome:** People can solve this crisis by having and nurturing the children or helping the next generation in other ways.
- **Negative outcome:** Person will remain self centered and experience stagnation later in the life.

Stage 8: Late Adulthood—Age 65 Years to Death

Crisis: Integrity versus Despair

- **Description:** Old age is a time for reflecting upon one's own life and seeing it filled with pleasure and satisfaction or disappointments and failures. Virtue of the wisdom develops out of the encounter of integrity and despair in the last stage of life. Achieving the virtue of the stage involves the feeling of living a successful life.
- **Positive outcome:** If the other seven psychosocial crises have been successfully resolved, the mature adult develops the peak of adjustment: integrity. If the adult has achieved a sense of fulfillment about life and a sense of unity within himself and with others he will accept death with a sense of integrity just as healthy child will not fear life.
- **Negative outcome:** Negative outcome: The opposite of this is despair. This is often expressed as disgust and unhappiness on a broad scale, frequently accompanied by a fear that death will occur before a life change that might lead to integrity can be accomplished.

Q.3. Write short note on psychic triad. *(Oct 2015, 5 Marks) (Feb 2014, 5 Marks)*

Or

Describe psychic triad/psychic model. *(Dec 2018, 4 Marks)*

Or

Write short answer on psychic triad. *(Mar 2020, 3 Marks) (Sep 2023, 3 Marks) (Sep 2024, 3 Marks)*

Ans. Psychic structure proposed by Freud in psychodynamic theory consist of three parts, i.e., id, ego, superego.

For detail refer to Ans. 1 of same chapter.

Q.4. Define psychology, classify theories of child development. Describe in detail classical psychoanalytical theory. *(Mar 2012, 15 Marks)*

Ans. Psychology is defined as the science dealing with human nature, function and phenomenon of his soul in the main.

Classification of Theories of Child Development/Child Psychology

Psychodynamic Theories

- Psychosexual theory—Sigmund Freud.
- Psychosocial theory—Eric Erickson.
- Cognitive theory—Jean Piaget.

Behavioral Theories

- Hierarchy of needs—Abraham Maslow.
- Social learning theory—Albert Bandura.
- Classical conditioning—Ivan Pavlov.
- Operant conditioning— BF Skinner

Margaret S Mahler's Theory of Development

Psychoanalytical Theory

Sigmund Freud (1905) was the originator of psychoanalytical approach.

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- Freud's interest in development arose from his desire to explain the disorders of personality in adults.
- Freud thought the personality to originate from biological roots, as a result of satisfaction of a set of instincts of which sexual instinct was the most important.
- He described five psychosexual stages. At each stage, sexual energy is invested in a particular part called an erogenous zone.
- He attempted to explain the personality and psychological disorders in an individual by understanding the mind at its different levels, its motivation and conflicts. He described human mind with the help of two models:
  1. Topographic model.
  2. Psychic model/psychic triad.

Topographic Model

- According to this model, human mind consists of conscious, preconscious and subconscious mind.
- The conscious mind is where we are paying attention at the moment. It includes only our current thinking processes and objects of attention and constitutes a very large part of our current awareness.
- Preconscious mind involves ordinary memory and knowledge; things of which we are aware, but where we are not paying attention at all moments but can deliberately bring them into the conscious mind by focusing.
- Unconscious/subconscious mind is where the process and content are out of direct reach of the conscious mind. It consists of that part of our mind which thinks and acts independently, acts as a dump box for urges, feelings and ideas and exerts influence on our actions and conscious awareness.
- Freud described human mind is like an iceberg. Only 10% of the iceberg is visible (conscious), whereas the other 90% is beneath (unconscious).

Psychic Model

ID

- It is the most primitive part of personality.
- It is the basic structure of personality, which serves as a reservoir of instincts.
- The ID is the source of all gratification and pleasure, it represents the unconscious, instructive urges that motivate behavior.
- ID can be defined as inherited reservoir of unorganized drives.
- It is governed by the pleasure pain principle, aims of immediate satisfaction of libidinal urges, is immoral, illogical and lacks unity of purpose.

Ego

- It is the ego that makes the necessary interaction with the social world possible and permits the needs of ID to be satisfied.
- Ego can be defined as the integrating or mediating part of personality which develops out of interaction of ID and environment.
- Ego is governed by the reality principle.
- Ego acts as a mediator between ID and superego.
- Ego helps in channelizing ID in social acceptable method.

Superego

- It is that part of personality that is internalized representation of the values and morals of society as taught to the child by parents and others.
- The superego acts as a conscience, it is the internal part of the individual that makes value judgments.
- Superego stems from internalization of feeling love and hate, good and bad, praising and forbidding, reward and punishment.
- Superego is governed by the moral principle.
- Superego is linked to the social consciousness which is derived from familial cultural restrictions which are placed over the growing child.

Merits of Freud's Theory

One of the earliest and the most comprehensive theories of life long psychological development.

Demerits of Freud's Theory

- Freud formulated this theory by his extensive studies on adult psychological patients and hence extrapolation to children is not very justified.
- This theory is based on obsessed observations of the psychologist.

Q.5. Write short note on cybernetic theory.
(Dec 2012, 3 Marks)

Ans. It is also known as Petrovic's hypothesis or Servo system.

- As per Petrovic the interaction of series of casual changes and feedback mechanism determine craniofacial growth.
- According to cybernetic theory, the control of primary cartilage takes a cybernetic form of command whereas that of secondary cartilages has direct effect of cell multiplication.
- Growth of cranium occurs in response to growth of brain.
- Growth of cranial base is the result of endochondral growth and boney replacement of synchondrosis which have independent growth potential.
- Growth of maxilla occurs from combination of growth at sutures and direct remodeling of bone surface. Maxilla translates downward and forward as face grows.
- Growth of mandible occurs by both endochondral ossification at condyle and resorption of bone at surfaces.

Q.6. Classify child psychological theories. Discuss Erik Erikson's theory in detail. *(Mar 2013, 8 Marks)*

Or

Enumerate various theories of child psychology. Describe in detail psychosocial theory by Erik Erikson.
(Nov 2020, 10 Marks)

Ans.

Theories of Child Psychology

Psychodynamic theories

- *Psychosexual theory*: Sigmund Freud.
- *Psychosocial theory*: Eric Erickson.
- *Cognitive theory*: Jean Piaget.

Behavioral theories

- *Hierarchy of needs*: Abraham Maslow.
- *Social learning theory*: Albert Bandura.
- *Classical conditioning*: Ivan Pavlov.
- *Operant conditioning*: BF Skinner.

Margaret S Mahler's theory of development

For Erik Erikson's theory in detail refer to Ans. 2 of same chapter.

Q.7. Classify theories of child psychology. Describe in detail the cognitive developmental theory.
(Oct 2016, 20 Marks)

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Or

Classify theories of child psychology. Describe in detail the cognitive theory by Jean Piaget.

(Mar 2019, 10 Marks)

Or

Write short answer on Piaget's cognitive theory in pedodontics. *(May 2019, 3 Marks)*

Or

Discuss about cognitive theory of child psychology. *(June 2026, 5 Marks)*

Ans. *For classification of theories of child psychology refer to Ans. 6 of same chapter.*

Cognitive Development Theory

- Jean Piaget proposed this theory in 1952.
- Piaget's theory is based on how children and adolescents think and acquire knowledge.
- This theory was formulated by direct observation of children by asking them about their thinking.
- Piaget proposes that the world is a stable environment, and child acquires this through the knowledge of mathematics and logic as reality. Then as the child grows, he is required to adapt according to the people he is living with. These all stages are grouped as:
  - *Operation:* An action which the child performs mentally and which has added property of being reversible.
  - *Schema:* It presents a dynamic process of differentiation and reorganization of knowledge with resultant evolution of behavior and cognitive functioning apparatus for age of child. According to Piaget, schema consists of both category of knowledge and process of obtaining that knowledge.
  - *Assimilation:* It is concerned with the observing, recognizing, taking the object and relating with earlier experience.
  - *Accommodation:* It involves alteration of existing schemas or ideas as a result of new experiences. New schemas can also develop during this process. Accommodation occurs when child changes his or her cognitive structure or mental category to better represent the environment.
  - *Equilibration:* As per the Piaget children try to balance between assimilation and accommodation which is achieved by the mechanism of equilibration. As children progress through the stages of cognitive development it is important to maintain balance between assimilation and accommodation. Equilibration explains how the children are able to move from one stage of thought to next stage.

Merits

- Most comprehensive theory of development.
- The theory shows that we can learn much about the children's intellectual development from examining their incorrect answers to the items as from examining their correct answers.

Demerits

- It underestimates the abilities of children.
- It overestimates differences of age in thinking.
- It shows vagueness about the process of change.
- It underestimates the role played by social environment.

Sequence of Development by Piaget is Divided into Four Stages:

1. Sensorimotor stage (Birth to 2 years).
2. Preoperational stage (2–7 years).
3. Concrete operational stage (7–11 years).
4. Formal operation stage (11–15 years).

Sensorimotor Stage

- Starts from birth to 2 years of age.
- Animism, object permanence and primitive beginning of symbolic thought are considered to be the hallmarks of this stage.
- At this stage, infants discover the relation between body and environment. It is the stage of practical intelligence.

Dental Application

In this stage, child interact with the environment and toys are given to him/her while sitting over dental chair.

Following are the six stages of sensorimotor stage:

Stage	Age	Schemata	Coordinated reflexes
1st	Birth to 2 months	Automatic inborn reflexes	Use of inborn motor or sensory reflexes for interacting and accommodating to external world
2nd	2–5 months	Improvement in coordination of reflexes	Primary circular reaction, i.e., coordinate activities of own body and five senses
3rd	5–9 months	Infants try to perceive and maintain interesting experiences	Secondary circular reaction, i.e., seek new stimuli in environment, child start to anticipate consequences of own behavior and to act purposefully for changing environment
4th	9 months to 1 year	Coordinate sensorimotor scheme	Child shows signs of object permanence. Child has vague concept that object exists from itself. Child plays peekaboo
5th	1 year to 18 months	New sensorimotor schemes are invented	Tertiary circular reaction, i.e., child seek new experiences and produce novel behavior
6th	18 months to 2 years	By mental exploration new schemes are invented in which they imagine various events as well as outcomes	Symbolic though, i.e., child uses symbolic representation of events and objects. Child show signs of reasoning

Preoperational Stage

- This stage lasts from 2 to 7 years of age.
- It is divided into preconceptual period which lies from 18 months to 4 years of age and intuitive period from 4 to 7 years of age.
- During preconceptual stage, symbolic activity starts. During this stage, stimulus begins to take on meaning and child can use a stimulus to represent other objects.
- In intuitive stage, prelogical reasoning is present which appears based on the preconceptual appearances hampered by reversibility.

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Dental Application

There are three main areas of focusing in this stage:

1. *Constructivism*: Child likes to explore the things and make its own observations.
2. *Cognitive equilibrium*: Child is explained about equipment or instrument and is allowed to deal with it.
3. *Animism*: Child correlate the things with other objects which they are mostly used to.

Concrete Operational Stage

- This stage lasts from 7 to 11 years of age.
- Thinking of child is strong to concrete situation and has limited abstract reasoning.
- Animism declines at this stage.
- At this stage, child give logical reasons and thoughts are organized.
- Child focus its attention over various attributes of an object, he also understand the relation between dimensions.
- At this stage, child is able to sort the objects according to size, shape or any other characteristic which is known as seriation.

Dental Application

- Concrete instructions are given, i.e., this is a retainer, brush like this.
- Child is allowed to hold the mirror for seeing what is done to his teeth.

Formal Operational Stage

- It occurs after the age of 11 years.
- Child is able to deal with abstract concept and abstract reasoning develops at about 11–12 years of age.
- In addition to ability to deal with abstractions, teenagers develop cognitively to the point where they can think about thinking.
- During this stage, child's thought process is similar to the adult and child is capable of understanding concepts, such as health diseases and preventive treatment.
- Child can now reason a hypothetical problem and do a systemic search for a solution.

Dental Application

Aesthetic and corrective dental treatment.

Q.8. Define growth and development. Explain functional matrix theory of growth. *(Feb 2016, 4 Marks)*

Or

Write short answer on functional matrix theory. *(Nov 2017, 3 Marks)*

Or

Write short note on functional matrix theory of growth an development. *(Dec 2022, 4 Marks)*

Ans.

Growth

Growth was defined by many of the researchers which is as follows:

- It is defined as "self multiplication of living substance". **—JS Huxley**
- It is defined as "increase in size, change in proportion over time". **—Krogman**
- It is defined as "Any change in morphology which lies within measurable parameter". **—Melvin Moss**
- It is defined as "Biological process by which the living matter gets larger". **—Moyer**

Development

It is explained as "Development can be considered as a continuum of causally related events from the fertilization of ovum onwards". **—Melvin Moss**

Functional Matrix Theory of Growth

Definition of Functional Matrix

The functional matrix hypothesis claims that the origin, form, position, growth and maintenance of all skeletal tissue and organ are always secondary, compensatory and necessary responses to chronologically and morphologically prior events or process that occurs in specially related nonskeletal tissues, organs or functional spaces (functional matrices).

Theory

The functional matrix theory is given by Melvin Moss and is truly based on work done by Vander Klaauw. The theory states that "There is no direct genetic influence on the size, shape or position of skeletal tissues, only the initiation of ossification. All skeletogenic activity is primarily depends upon the functional matrices".

Functional Cranial Component

- Tissue and spaces which together leads to a single function are known as functional cranial component.
- As per Moss, head leads to many of the functions, i.e., respiration, digestion, hearing, etc. Each one function is carried together by tissues and spaces in the head.
- Functional cranial component is divided into following two components, i.e., functional matrix and skeletal unit.
  1. *Functional matrix*: It performs any function.
  2. *Skeletal unit*: It protects and supports the functional matrix.

Functional Matrix

- Combination of all the soft tissues which lead to a single function is known as functional matrix.
- Functional matrix is divided into periosteal matrix and capsular matrix.

Periosteal Matrix

- It influences bone directly by periodontium.
- Periosteal matrix functions by depositing bone and resorption bone.
- Periosteal matrices are muscles, blood vessels, nerves, gland, teeth and temporalis muscle.
- The periosteal matrices create local environmental factors. These factors affect the growth.
- Periosteal matrix affects the microskeletal unit.

Capsular Matrix

- It consists of the capsule which surrounds mass and spaces.
- Example of capsular matrix is neural mass which is present in capsule of skin and dura mater.
- The capsular matrices are neurocranial capsule and orofacial capsule.
- Neurocranial capsular matrix is formed by cerebrospinal fluid, leptomeninges and brain.
- Orofacial capsular matrix consists of functioning spaces and tissues in deglutition, respiration, etc.
- Capsular matrix give rise to local epigenetic factor which helps in control of growth.

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- Expansion of capsular matrix by volume leads to translation of whole bone. This translation of whole bone is also known as macroskeletal unit.
- Capsular matrix leads to the growth of complete bone.

Skeletal Unit

- Combination of all skeletal tissues which is associated with single function is known as skeletal unit.
- Skeletal units are of two types, i.e., microskeletal unit and macroskeletal unit.
  - *Microskeletal unit*: When a bone is comprised of several contiguous skeletal units, it is known as microskeletal unit.
  - *Macroskeletal unit*: When adjoining bones are limited to function as single cranial component. For example, entire endocranial surface of calvarium.

Microskeletal Unit

It consists of all the parts of bone which are affected by periosteal matrix and this leads to the transformation of bone, i.e., change in size and shape of the bone.

Macroskeletal Unit

- It consists of core of the bone which is affected by the capsular matrix which leads to translation of bone, i.e., change in the position of bone.
- The combination of both the skeletal units and the functional matrices, i.e., periosteal matrix and capsular matrix results in growth.

Q.9. Write short note on classical conditioning theory by Pavlov. *(Feb 2016, 4 Marks)*

Or

Write short answer on classical conditioning by Pavlov. *(Mar 2022, 3 Marks)*

Ans. Ivan Petrovich Pavlov, a Russian psychologist was the first person to study the conditioned reflexes experimentally on the dogs.

- Pavlov's classical experiment involves the presentation of food to hungry dog along with some of the other stimulus, i.e., the ringing bell. This is done repeatedly. Stimulus evoked by sound of ringing bell becomes associated with food presentation stimulus.
- Pavlov trained the dog by first ringing the bell and then presented the food. After some of the sessions, dog start salivating during ringing of the bell. This is the conditioned response what the dog has learnt.

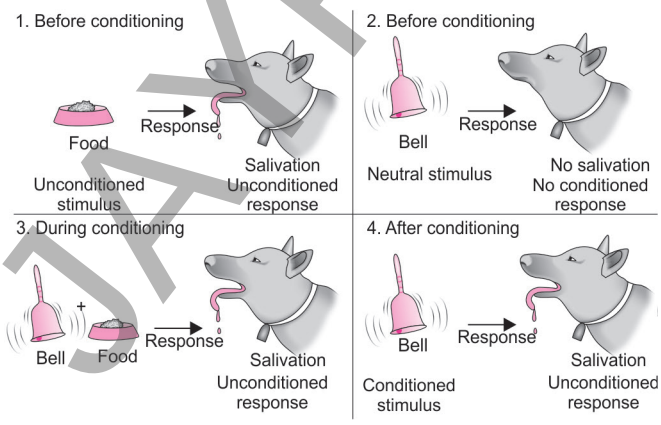


Fig. 3: Classical conditioning: Pavlov's experiment with dog.

- Unconditioned stimulus is the stimulus which evokes an unconditioned response without previous conditioning. Unconditioned response is an unlearned reaction to unconditioned stimulus which occurs without previous conditioning.
- In the experiment carried out by Pavlov presentation of food is unconditioned stimulus while salivation is unconditioned response. Ringing bell is a neutral stimulus which over a period of time becomes conditioned stimulus and salivation is conditioned response.
- The crucial element of conditioning is relation between conditioned and unconditioned stimulus. More frequent is the pairing of conditioned and unconditioned stimulus, strong is the conditioning.
- Classical conditioning thus operates by simple process of association of one stimulus with another. For this reason this mode of learning is referred to as learning by association.

Principles of Classical Conditioning

- *Acquisition*: This is learning a new response from environment by conditioning.
- *Generalization*: In this process of conditioning is evoked by band of stimuli which is centered around specific conditioned stimulus. For example, Child who had experience of pain with a doctor in white coat, he always associates any doctor in white coat with pain.
- *Extinction*: There is removal of conditioned behavior when there is association between conditioned and unconditioned response is not reinforced.
- *Discrimination*: This is the opposite of generalization. For example, If a child is exposed to the clinic settings which are different to those associated with painful experiences the child learn to discriminate between two clinics.

Q.10. Write short note on iceberg phenomenon. *(Feb 2016, 5 Marks)*

Ans. Freud compared the human mind to an iceberg.

- The small part that shows above the surface of the water represents the conscious experience and the much larger base below water level represents the unconscious store house of impulses, passions and inaccessible memories that affect thoughts and behaviors.
- The conscious mind is what you are aware of at any particular moment, your present perceptions memories thoughts fantasies.
- Working closely with the conscious mind is what Freud called the preconscious mind or available memory; anything that can be easily made conscious like the memories you are not at the moment thinking about but can readily bring to mind.

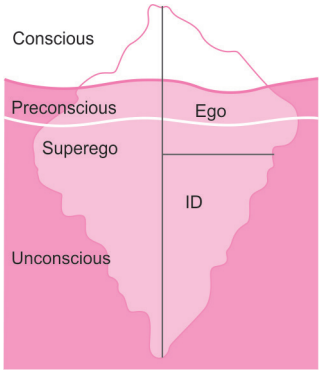


Fig. 4: Iceberg phenomenon.

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- The largest, most complex and hidden is unconscious part. According to Freud, unconscious is the source of our motivations whether they may be simple desires of food or sex, neurotic compulsions or the motives of an artist or scientist and yet we are often driven to deny or resist becoming conscious of these motives and they are often available to is only in disguised form.
- So the conclusion is only 10% of the iceberg is visible or is conscious while other 90% which is beneath remains unconscious.

Q.11. Define child psychology. Classify theories of child psychology and describe in detail psychosexual theory. *(Oct 2016, 10 Marks)*

Or

Explain psychosexual theory in detail. *(July 2019, 6 Marks)*

Ans. Child psychology is the science that deals with the mental power or an interaction through the conscious and subconscious element in a child.

Name of the stage	Age	Erogenous zone in focus	Gratifying activities	Interaction with the environment	Symptoms of fixation
Oral	0–1.5 years	Mouth	Nursing, eating and the mouth movement which is inclusive of sucking, biting and swallowing	To the infant the mother's breast is not only the source of food and drink but this also represents her love. Because the child's personality is controlled by the ID and therefore he/she demands the immediate gratification, responsive nurturing is key. Id dominates because not the ego or superego fully develops, so infant has no personality, every action is based on pleasure principle.	The symptoms of oral fixation are smoking, nail biting, drinking and sarcasm.
Anal	1.5–3 years	Anus	Bowel movement as well as withholding of such movement	Major event in such stage is the toilet training, a process by which children are taught when, where and how excretion is deemed appropriate by the society, Children during this stage notices both pleasure and displeasure which is associated with bowel movements through the toilet training. Through exercising the control over retention and expulsion of faeces, child can choose to either grant or refuse the parent's wishes.	There are two symptoms of anal fixatio, i.e.: • Anal—expulsive personality: If parents remain too much lenient and fails to instill the rules of society about the bowel movement control, child will drive both pleasure and success from expulsion. Individuals having fixation at this mode of gratification are excessively sloppy, disorganized, reckless, careless and defiant • Anal—retentive personality: If the child gains excessive pressure as well as the punishment from the parents at the time of toilet training, he will experience anxiety during the bowel movement and so withhold such functions. Individuals with such fixation remain clean, orderly and intolerant to those who are not clean.
Urethral	3–4 years	It is the transitional stage between anal and phallic stages and has the characteristics of both	Pleasure in the urination	Characteristics of urethral stage are subsumed under those of phallic stage. Urethral erotism, is used to refer the pleasure in urination and also the pleasure in urethral retention which is analogous to anal retention. Similar issues of performance and control should be related to the urethral functioning. Urethral functioning may also be invested with a sadistic quality, often reflecting the persistence of anal sadistic urges. The predominant urethral trait remains that of the competitiveness and ambition, probably related to compensation for shame because of the loss of urethral control. Besides the healthy effects analogous to those from the anal period urethral competence gives a sense of pride and self-competence as a small boy can imitate and match his father's adult performance.	—

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Name of the stage	Age	Erogenous zone in focus	Gratifying activities	Interaction with the environment	Symptoms of fixation
Phallic	4–5 years	Genitals	Genital folding	It is the most challenging stage in person's psychosexual development. Main feature of this stage is child's feeling of attraction towards the parent of opposite sex along with envy and fear of same sex parent. In boys this is known as Oedipus complex while in girls it is known as Electra complex **Oedipus complex:** • The complex is named after the young man in a Greek myth who killed his father and married his mother unaware of their true identities. • Boys in midst of oedipus complex often experience the intense "castration anxiety", which come from the fear of punishment from the father for their desire for the mothers. • In the process of identifying with his father, the boy not only takes on his father's behavior patterns but also his father's ideas of right and wrong. So, it is rough identification in the phallic stage that the boy's superego begins to form. **Electra complex** • This complex is known after Agamemnon's daughter, who arranged for her mother to be murdered. • For the girl, the sequence starts with an erotic focus on the father. But, in addition, the girl notices that she does not consists of the sexual organs of her father or brothers and she experiences the "penis envy." • Girl suspects that she may actually got castrated by her mother; this makes her angry, and the girl comes to resent and devalue her mother. • Nonetheless, she eventually identifies with her mother partly because she knows if she takes on her mother's characteristics she will stand a better chance in her own "romantic relationship" with her father. • So, in spite of her affection for her father and her resentment of her mother, the little girl identifies with her mother, behaving like her and incorporating her values. Both of the above mentioned complexes develop in the subconscious mind. Ego fears the consequences of expressing them and realizes that these drives cannot be satisfied directly. It holds the original sexual wish in unconscious mind and drives the partial satisfaction by identifying with parent of same sex.	Symptoms of the phallic fixation are: • For men: Anxiety and guilty feeling about sex, fear of castration and narcissistic personality • For women: Women never past this stage fully and will maintain the sense of envy and inferiority, but there is absence of possible fixations from this stage.

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Name of the stage	Age	Erogenous zone in focus	Gratifying activities	Interaction with the environment	Symptoms of fixation
Latency	5 years to puberty	None	—	During this stage sexual feelings remain suppressed to allow the children to focus their energy on other aspects of life. This is the time of adjusting to social environment outside home, absorbing culture forming the beliefs and values, developing the same sex friends, engaging of sport activities, etc. Majority of child energy is channelled into developing the new skills and acquiring the new knowledge, play becomes largely confined to other children of the same gender.	—
Genital	Puberty onwards	Genital	Heterosexual relationships	During this stage there is presence of sexual interest and desire and the pursuit of relationships. There is presence of the three major sources of the sexual arousal in this period: both memories as well as sensations from earlier childhood periods, physical manipulation of genitals and other erogenous zones, and hormonal secretions. Many themes and anxieties of earlier stages resurface, but in both new as well as more mature forms. In particular, the targets of sexual arousal now lie outside the self and family. Mature heterosexual relations emerge, with the species preserving possibility of procreation.	In this stage there is absence of fixation. As per the Freud if people experience difficulties during this stage the damage was done in earlier oral, anal and phallic stages. As these people come in this last stage of development with fixations from earlier stages for example, attractions to opposite sex can be a source of anxiety at this stage if the person has not successfully overcome the oedipus or electra conflict.

Psychosexual Theory

Freud outlined the five stages of manifestations of the sexual development. At each of the stage different regions dominate the source of the sexual arousal and differences in satisfying the sexual urges during each stage will lead to differences in the adult personalities. A proper resolution of the conflicts will cause child to progress past one stage to another. Failure to achieve a proper resolution however, will make the child fixated in the present stage and this is believed to be the cause of many personality as well as the behavioral disorders.

Q.12. Define growth and development. Describe Scammon's growth curve. *(Dec 2018, 4 Marks)*

Or

Write short note on Scammon's growth curve. *(Mar 2019, 4 Marks)*

Ans. *For definition of growth and development, refer to Ans. 8 of same chapter.*

Scammon's Growth Curve

Body tissues, namely—lymphoid, general, genital and neural grow at different rates at different times. Upon analysis of size of various parts and organs of the body, Scammon proposed that growth of different tissues and system are summarized on four patterns of growth. These configurations when plotted on a chart represent the Scammon's growth curve.

General Tissue

- General or body curve describes growth of the body as whole and of most of its parts—the growth patterns of stature, weight, and most of the external dimensions of body.
- This consists of bones, muscles, and other organ systems.
- These exhibit an "S"-shaped curve with rapid growth up to 2–3 years of age followed by a slow phase till about 10 years.
- Then growth again enters rapid phase in the 10th year and continues till terminating about 18–20 years.

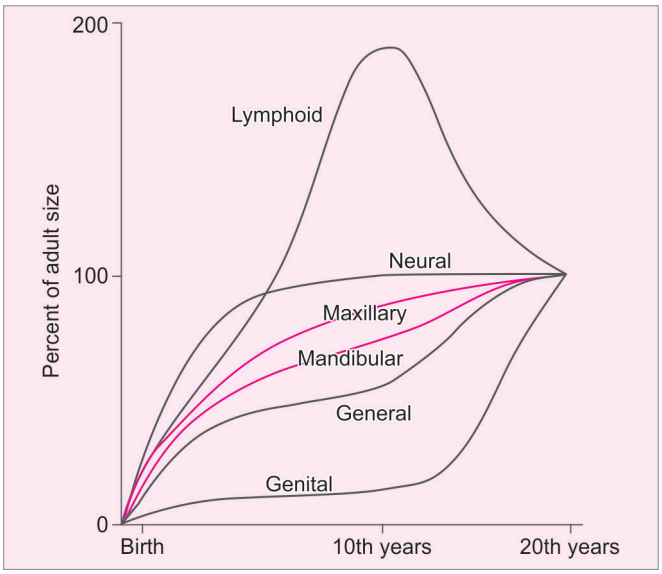


Fig. 5: Scammon's growth curve.

Neural Tissue

- Neural curve characterizes growth of brain, nervous system, and associated structures, such as the eyes, upper face and parts of the skull.

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- These tissues experience rapid growth early in postnatal life, so that about 95% of the total increment in size of the central nervous system between birth and 20 years is already attained by about 7 years of age.
- Grows very rapidly and reaches adult size by 6–7 years and very little growth occurs after that.

Genital Tissue

- Genital curve characterizes growth pattern of the primary and secondary sexual characteristics.
- The former include the ovaries, fallopian tubes, uterus, and vagina in females, and the testes, seminal vesicles, prostate, and penis in males.
- Secondary sexual characteristics include breast development in females, pubic and axillary hair in both sexes, and facial hair and growth of the larynx in males. This shows negligible growth until puberty, but grows rapidly on reaching puberty till adult level is achieved.

Lymphoid Tissue

- Lymphoid curve describes the growth of the lymph glands, thymus gland, tonsils, appendix, and lymphoid patches of tissue in the intestine.
- These tissues are involved in general with the child's developing immunological capacities, including resistance to infectious diseases.
- It increases rapidly in late childhood and reaches almost 200% of its adult size.
- This is due to the fact that children are more prone to infectious.
- By 18 years, the lymphoid tissue undergoes involution to reach adult size.

Q.13. Define child psychology. Classify the theories of personality development. Describe in detail Jean Piaget theory. *(Nov 2016, 10 Marks)*

Ans. *For definition refer to Ans. 11 of same chapter.*

Theories of Personality Development

- Psychoanalytical theory:
  - Psychosexual
  - Psychosocial
- Jean Piaget and cognitive stages of development
- Interpersonal theories:
  - Harry Sullivan
  - Hildegard Peplau
- Humanistic theories:
  - Abraham Maslow
  - Carl Rogers
- Behavioral theories:
  - Ivan Pavlov
  - Skinner
- Existential theories

For Jean Piaget theory in detail refer to Ans.7 of same chapter.

Q.14. Classify the theories of child psychology and discuss in detail the Sigmund Freud theory. *(Feb 2021, 6 Marks)*

Or

Enumerate the different theories of child psychology. Describe in detail about 'Sigmund Freud' theory. *(July 2023, 10 Marks)*

Ans. *For theories of child psychology refer to Ans. 6 of same chapter.*

Sigmund Freud had given psychosexual theory and psychoanalytic theory.

For psychosexual theory in details refer to Ans. 11 of same chapter.

For psychoanalytic theory in detail refer to Ans. 4 of same chapter.

Q.15. Classify theories of child psychology. Discuss classical conditioning theory. *(Sep 2025, 5 Marks)*

Ans. *For classification of theories of child psychology refer to Ans. 6 of same chapter.*

For classical conditioning theory refer to Ans. 9 of same chapter.

Q.16. Define child psychology. Write in detail about psychodynamic theories. *(Feb 2026, 5 Marks)*

Ans.

Definition of Child Psychology

Child psychology is the science that deals with the mental power or an interaction through the conscious and subconscious element in a child.

Psychodynamic Theories

- Psychosexual theory/psychoanalytic theory by Sigmund Freud (1905): *For details refer to Ans. 11 of same chapter.*
- Cognitive theory by Jean Piaget (1952): *For details refer to Ans. 7 of same chapter.*
- Psychosocial theory/model of personality development by Erik Erikson (1963): *For details refer to Ans. 2 of same chapter.*

3. BEHAVIOR MANAGEMENT

Q.1. Write in detail about nonpharmacological methods of behavior management. *(Mar 2020, 6 Marks)*

Or

Define behavior management. Write in detail about nonpharmacological methods of behavior management. *(Mar 2022, 6 Marks)*

Or

Write short answer on behavior management. *(Feb 2019, 3 Marks)*

Or

What is behavior management? Describe various techniques used for behavior management in pediatric dental practice. *(Nov 2018, 15 Marks)*

Or

Write long answer on behavior management in pediatric dentistry. *(Sep 2022, 5 Marks)*

Or

Describe behavior management in pediatric dentistry. *(Feb 2023, 6 Marks)*

Ans. Behavior management is defined as the means by which dental health team effectively and efficiently performs dental treatment and thereby instills a positive dental attitude.

—Wright (1975)

Nonpharmacological Techniques used for Behavior Management

Following are the nonpharmacological behavior management techniques:

- Preappointment behavior modifications.
- Communication.

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- Behavioral shaping techniques:
  - Tell-show-do
  - Desensitization
  - Modeling
  - Contingency
- Behavioral management techniques:
  - Audioanalgesia
  - Biofeedback
  - Voice control
  - Hypnodontics
  - Coping
  - Relaxation
  - Aversive conditioning
  - Implosion therapy
  - Retraining

Nonpharmacological Methods

Preappointment Behavior Modifications

- It refers to anything that is said or done to positively influence the child's behavior before the child enters dental office.
- Several methods before preappointment behavior modification such as audio visual aids, letters, films or video tapes have been used to provide a model for young patient.
- Preappointment mailings should be done.

Communication

The hallmark of a successful dentist in managing child dental patient in his ability to communicate with them and win their confidence.

Objectives of Communication

They are as follows:

- *Establishment of communication:* This is done by involving a child in a conversation, the dentist not only learns about the patient but also may relax youngster.
- *Establishment of communicator:* The dental assistant talks with the child during transfer from reception room to operatory and during preparation of child on a dental chair.
- *Message clarity:* Message should be simple and easy to understand by a young child. Euphemisms can be used.
  - Another important aspect of communication is ability of dentist to get the child respond to his commands.
  - For the successful communication to take place all four elements of communication, i.e., sender, message, context and receiver must be present and consistent.

Behavioral Shaping

- It is based on the stimulus response theory and principles of social learning. The child is taught how to behave.
- Behavior shaping is based on the planned introduction of treatment procedures so that the child is gradually trained to accept treatment in relaxed and cooperative method.
- The technique for behavior shaping are:
  - **Tell-Show-do Technique (TSD)**
    - Adelson discovered tell-show-do technique in year 1959.
    - In this, dentist use the language that the child understands and tell the patient what is to be done. It is presented repeatedly and slowly.
    - TSD technique involve verbal explanation of procedures in phrases appropriate to developmental level of patient (tell); demonstration of the patient for visual, auditory, olfactory and tactile aspect of procedure in a carefully defined, nonthreatening setting (Show); and then without deviating from explanation and demonstration, completion of procedure (do).
    - TSD is used with communication skills and positive reinforcement.
    - Dentist demonstrates the procedure to child using a model or himself and is done slowly:
      Child has shown the handpiece and how it revolves and is introduced to child as a special brush for cleaning teeth.
      While taking radiographs X-ray machine is introduced as camera that takes photo of teeth. Child should be assured that it won't hurt him/her but it goes near to the cheek.
    - It should be remembered that one should be truthful and honest to the child and does not frighten him/her. If any deviation occur from an original explanation or demonstration this can affect the relationship between child and dentist.
  - **Desensitization:**
    - Desensitization was introduced to eliminate fear and apprehension.
    - *It is characterized by two elements*: Gradational exposure of the child to his fear induced state of incompatibility with his fear.
    - It involves teaching the child how to induce a state of deep muscle relaxation and describing while the child is in the relaxed state, imaginary scenes relevant to his fears.
    - This technique involves three stages:
      1. Train the patients to get relax
      2. Constructing hierarchy for the fear producing stimuli
      3. Introduce each stimulus in hierarchy to relax the patient starting with the stimulus which causes least fear.

      For example, if the child is afraid of dental clinic, general desensitization consists of gradual introduction of child to reception room, receptionist, pedodontist, dental hygienist, nurse, dental surgery, dental chair and oral examination and prophylaxis, by doing so fear of the child is allayed by kind, friendly and reassuring manner of receptionist, nurse, hygienist, pedodontist and the positive approach of child get reinforced.
  - **Procedure:**
    - The dentist creates a list of steps arranged as a hierarchy from the least to the most stressful.
    - Here we teach the child step by step to adapt from one behavior to another, i.e., mold the child from a slight stimulus then gradually increase to a severe stimulus. This is known as systemic desensitization.
    - This technique has been found to be effective in managing phobias.
    - TSD is the popular method of desensitization to modify behavior of child.
  - **Modeling:**
    - Modeling is introduced by Albert Bandura in 1969.
    - The modeling procedure allows a patient to observe one or more individuals (models) who demonstrate appropriate behavior in particular situation.
    - *Modeling can be done by*:
      » Live models—siblings, parents of child
      » Filmed models

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» Posters
» Audiovisual aids.

Steps in modeling:
– Patient's attention is obtained.
– Desired behavior is modeled.
– Physical guidance of desired behavior may be necessary when patient is initially expected to mimic modeled behavior.
– Reinforcement of required behavior.

- **Contingency management:**
  – This technique is given by BF Skinner.
  – In this, behavior is modified by presentation or withdrawal of reinforcers.
  – *Contingency management consists of:*
    » **Reinforcement:** This is the method of increasing probability of desired behavior by presentation of a pleasant stimulus or withdrawal of unpleasant stimulus. Here stimulus is known as reinforcer.
      ✦ *Positive reinforcer*: It is one whose contingent presentation increases the frequency of behavior. For example, shaking hand, pat of back and shoulder. In form of gifts, i.e., toothbrush kits, cartoon stickers.
      ✦ *Negative reinforcer*: It is one whose contingent withdrawal increases the frequency of behavior. For example, withdrawal of unpleasant stimulus like high speed handpiece.
    » **Omission or time out:** It is the withdrawal of the pleasant stimulus to reinforce good behavior. For example, asking the mother to stay out of dental operatory for making the child cooperative.
    » **Punishment:** It is the presentation of an unpleasant stimulus to the child. For example, voice control, HOME.

Behavior Management Techniques

Audioanalgesia

- It is also called as white noise.
- This consists of providing a sound stimulus of such intensity that the patient finds it difficult to attend to anything else.
- The effect is due to distraction, displacement of attention and a positive feeling on the part of dentist that it can keep.

Biofeedback

In this method, certain physiologic reaction of body are detected that may indicate fear, e.g., checking heart rate that may increase when patient is in stress.

Voice Control

- When normal communication tones and expression fails, voice control can be fundamental element in obtaining child's compliance.
- Voice control is the most effective when used in conjunction with other communication.
- A sudden command to "stop crying and pay attention" may be necessary measure for future communication.
- Giving the sudden and firm commands can gain the child's attention or stop him/her from whatever being done.
- Dentist should change his/her tone of voice for emphasizing their displeasure with the child's inattention.
- As soon as child complies dentist should complement him/her for their good behavior.

Objectives

- To gain the attention and compliance of patient.
- To avert negative or avoidance behavior.
- To establish authority

Indication

It is indicative for uncooperative.

Contraindications

In children who because of age disability, medication or emotional maturity are able to understand and cooperate.

Multisensory Communication

- Nonverbal message also can be used to send message.
- The clinician's simple act of placing a hand on the child's shoulder conveys a feeling of warmth and friendship.
- Eye contact is equally important.

Hypnodontics

- Use of hypnosis in dentistry is known as hypnodontics.
- Hypnosis is a state of mind in which suggestions are not only more readily accepted than in walking state, but are also accepted upon more powerfully than would be possible under normal conditions.

Coping

Patients differ not only in their perception and response to pain but also in their ways of dealing or coping with the stress associated with painful experience.

The different coping mechanisms are:

- One coping mechanism is distraction or displacement of attention away from the threat. Frequently, the patient spontaneously endeavors to utilize this coping behavior by thinking of something pleasant or diverting.
- Verbalizing fears to others is another well-known way of copying.
- Another used by persons facing the threat of stress or pain employs affiliative behavior when people feel threatened, they prefer to be with others.

Relaxation

It involves a series of basic exercise which may take several months to learn and which require the patient to practice at home within 15 minutes each day.

Telling oneself to relax is another mechanism for personal coping. Thus technique apparently work by reducing tension, well known potentiator of pain.

Aversive Conditioning

This method is used as a last resort for a very young, immature, physically handicapped or those who are mentally or emotionally afflicted.

Types of Techniques

HOME

HOME technique or hand over mouth exercise. The dentist gently but firmly places his hand over the child's mouth. With the verbal outburst completely stopped, the child is told that when he cooperates the hand will be removed. When the patient indicates his willingness to cooperate, usually by a nod of a head and cessation of attempts to stream, the hand is removed and patient is revaluated.

Objectives

- To gain the attention of child which enable him/her communication with the dentist so the appropriate behavioral expectation should be explained.

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- To eliminate inappropriate avoidance behavior to dental treatment.
- To increase the confidence of child in coping with anxiety and provoking dental stimuli.
- For assuring the safety of child in delivery of quality dental care.

Indication

- In a healthy child who is able to understand and cooperate but who exhibit defiant, obstreperous or hysterical behavior to dental treatment.
- It is used for children with sufficient maturity to understand simple verbal commands.

Contraindications

- In an immature child.
- When it prevent child from breathing.
- When dentist is emotionally involved with the child.

Physical Restrain

- They are useful and effective in facilitating the delivering of dental care for patients who need help for controlling their extremities and for managing resistant patients who need dental care but who are not candidates for general anesthesia.
- Parent or guardian consent must be obtained prior to use of restrains.

Objectives

- To reduce or eliminate untoward movement.
- To protect the patient and dental staff from the injury.
- To facilitate delivery of quality dental treatment.

Following are the commonly used physical restrains:

- *Oral:* Mouth props, padded wrapped tongue blades, a finger guard or an intraocclusal thimble and rubber/plastic bite blocks.
- *Body:* Papoose board, triangular sheet, pedi-wrap, bean bag dental chair insert, safety belt and extra assistant.
- *Extremities:* Posey strap, Velcro straps, towel/tape and extra assistant.
- *Head:* Forearm support, head positioned, positioned, plastic bowel and extra assistance.

Implosion Therapy

- In this technique, patient is flooded with many stimuli which have affected him adversely.
- The child has no other choice but to face it until negative behavior disappear.
- It comprises of hand over mouth exercise (HOME) technique, voice control and physical restrain together.

Stages and Requirements of Modeling

- Two stages of modeling are acquisition and performance.
- Four of the requirements are attention, retention, motoric reproduction, reinforcement and motivation.

Retraining

- It is required for children displaying considerable apprehensive or negative behavior.
- During retraining, the objective is to build new series of association in child's mind.
- If child's expectancy of getting hurt does not come true, a new series of expectancies are learned that the pedodontist and his auxiliaries can be trusted. Child develop a new perception of dental clinic.

Q.2. Write short answer on modeling. *(Sep 2023, 3 Marks) (Sep 2024, 3 Marks) (July 2019, 3 Marks) (Sep 2025, 3 Marks)*

Ans. Modeling is introduced by Albert Bandura in 1969.

- The modeling procedure allows a patient to observe one or more individuals (models) who demonstrate appropriate behavior in particular situation.
- Modeling can be done by:
  - Live models—siblings, parents of child.
  - Filmed models.
  - Posters.
  - Audiovisual aids.

Stages and Requirements of Modeling

- Two stages of modeling are acquisition and performance.
- Four of the requirements are attention, retention, motoric reproduction, reinforcement and motivation.

Steps in Modeling

- Patient's attention is obtained.
- Desired behavior is modeled.
- Physical guidance of desired behavior may be necessary when patient is initially expected to mimic modeled behavior.
- Reinforcement of required behavior.

Functions of Modeling

Modeling serves four basic functions:

1. Stimulation of acquisition of new behavior.
2. Facilitation of behavior already present.
3. Disinhibition of behavior avoided because of fear.
4. Extinction of fear.

Objectives of Modeling

- Stimulation of acquisition of new behaviors.
- Facilitation of behaviors already in the patient's repertoire in a more appropriate manner of time.
- Disinhibition of behavior avoided because of fear.
- Extinction of fear

Modeling technique is of more benefit and less effort in private practice.

As the child come to clinic he/she should be shifted to operatory and a suitable model is shown.

Multiple model have remarkable calming effects on the anxious child.

Q.3. Write in detail about various factors, various variables influencing behavior of children in dental operatory. *(Feb 2014, 8 Marks)*

Ans. Following are the factors which affect child's behavior in dental office.

Under Control of Dentist

- Effect of dental office environment
- Effect of dentist activity and attitudes
- Dentists attire
- Presence/absence of parents in the operatory
- Presence of an older sibling.

Out of Control of Dentist

- Growth and development
- Nutritional factors
- Past dental experiences

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Hemant Gupta MDS has over 21 years of experience of authorship. He is the CEO of Shivom Multispeciality Dental Clinic and Implant Centre, Indore, Madhya Pradesh, India. He is a general practitioner and maxillofacial implantologist and also a consultant as an oral cancer diagnostician at various clinics and hospitals. He has also specialized in pathology techniques such as immunohistochemistry. He has published research papers in various indexed journals of national and international repute. He has an experience of providing coaching to dental students at a personal level, which helps them to build up the basics in dentistry, and also to clear the various university examinations. His pioneer work in Forensic Odontology is on "Ameloglyphics". He has also contributed some chapters in two academic textbooks.

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