

Psychological Age Equity Approach to Increasing Dental Care Acceptance in Early Childhood

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ABSTRACT

Anxiety and fear during dental procedures are common issues among young children, often hindering their acceptance of dental care and negatively impacting long-term oral health. Traditional approaches to dental care frequently fail to address children's psychological needs, resulting in negative experiences and avoidance of dental visits. This study investigates the effectiveness of the psychological age-equality approach in increasing children's acceptance of dental care by reducing anxiety and improving cooperation during dental procedures. A qualitative research design was employed, involving in-depth interviews with parents and dental professionals, along with direct observation of children aged 3–6 years undergoing dental procedures. These procedures incorporated age-appropriate psychological techniques. Thematic analysis was used to identify patterns and evaluate the impact of the approach on children's behavior and emotional responses. The findings revealed that the psychological age-equality approach significantly reduced children's dental anxiety and enhanced their cooperation during procedures. This approach effectively meets children's emotional and cognitive needs, improving their overall acceptance of dental care.

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1. INTRODUCTION

Children's fear of dental care is a common problem faced by many children, especially at an early age. Dental fear can lead to avoidance of dental care, perpetuating poor oral health and increasing the need for more invasive treatments in the future [1]–[3].

Psychological approaches to pediatric dental care, such as age-appropriate communication techniques, effectively reduce children's anxiety and increase their acceptance of medical procedures [4]–[7].

Dental care in children, especially at an early age, is often a challenge for both medical personnel and parents. Children aged 3-6 years often experience significant fear and anxiety about medical procedures, including dental care. This anxiety, known as dental anxiety, can hinder the treatment process and negatively impact children's dental health in the future [8]–[10].

Studies have shown that anxiety can be reduced by the application of a psychological approach that contributes to long-term oral health outcomes so that patients show a positive attitude towards

dental care. It was also found that age-appropriate communication and behaviour management techniques were significantly effective in various cultural contexts [11]–[13].

The age equality approach is one of the techniques used to adjust the way of communication to the level of cognitive and emotional development of children so that the interaction between medical personnel and young patients becomes more effective and enjoyable [1], [14]–[16].

An age-equality approach to communication with children in medical settings is essential to encourage effective and enjoyable interactions between children and medical personnel. Healthcare providers can build trust, improve understanding, and support children's active participation by tailoring communication strategies to young patients' developmental levels. Early childhood fears, including medication-related anxiety, can shape the development of dental anxiety [17]–[19].

About a third of young children experience anxiety before a visit to the dentist, and this is influenced by the perception of parents and the personality traits of the child; it is necessary to manage this experience effectively [20]–[23].

Psychological factors such as anxiety and fear have a significant influence on a child's behaviour during dental procedures and can contribute to the rejection or uncooperativeness that is often seen in children facing medical treatment [24]–[26].

Studies have shown a correlation between stress indicators, such as saliva cortisol levels, and anxiety during dental procedures. This shows a significant impact of physiological dental anxiety on children. Younger children, especially those under the age of six and those with emotional problems or hyperactivity, tend to show higher levels of anxiety and uncooperative behaviour during their dental procedures [16], [27]–[29].

Therefore, addressing these psychological factors with the right approach is essential to ensure that children not only receive the dental care they need but also have positive experiences that support their dental health in the future [7], [30]–[32].

Starting dental visits before the age of two and having regular visits to the dentist can significantly reduce dental fears in children. Regular visits to the dentist will help children reduce their anxiety by familiarising themselves with dental procedures [28], [33]–[35].

Research on applying the psychological age equality approach in pediatric dental care is still limited, although many studies show that age-appropriate communication techniques can reduce children's anxiety and improve their cooperation in other medical procedures. Therefore, this study aims to dig deeper into how the psychological age equality approach can be applied in pediatric dental care and analyse the effectiveness of communication techniques in reducing children's anxiety and increasing their acceptance of dental care procedures. By exploring the application of this approach, this study aims to provide new insights that can help medical personnel improve the quality of pediatric dental care and create a more positive medical experience for children [3], [16], [36].

In addition, the psychological age equality approach not only benefits children but can also positively impact parents and medical personnel. Parents who see their children as more cooperative and less anxious during dental care can feel calmer and more confident in accompanying them during the procedure. On the other hand, medical personnel can benefit from this approach because more cooperative and unafraid children will find it easier to carry out dental procedures more efficiently and without obstacles. Therefore, this study also aims to understand the perception of parents and medical personnel towards the application of this approach in the context of children's dental care [9], [33], [37], [38].

1.1 Research Method

This study uses a qualitative approach to explore the application of the Psychological Age Equity Approach in early childhood dental care and analyses effective communication techniques in reducing children's anxiety. This study aims to explore various perspectives and obtain more holistic data on applying age-appropriate communication techniques in pediatric dental care.

1.2 Respond

The number of respondents in this study consists of three main groups relevant to the topic studied, namely:

1. Children (Patients)

The study will involve 20-30 children aged 3-6 years undergoing dental treatment at a dental clinic or hospital. This age was chosen because children in the early age group often experience significant anxiety about dental procedures, and the psychological age equality approach can be applied more effectively in this age range. These children will be observed during dental

procedures to identify their anxiety levels, cooperative behaviour, and response to communication techniques used by medical personnel.

2. Parents

Parents of the children involved in the study will be the second respondents, with 15-20 parents interviewed. This interview explores parents' perceptions of their child's dental care experience and how they see changes in their child's acceptance of dental care after implementing the psychological age equality approach. Parents will also be asked to share their views on their role in supporting their children during dental procedures, as well as how they view the importance of a psychological approach in reducing children's anxiety.

3. Medical Personnel (Dentists and Medical Staff)

The third respondent was medical personnel, especially dentists and medical staff (dental assistants), who interacted directly with children during dental care. A total of 10- 15 medical personnel will be involved in this study. Through in-depth interviews, this study will explore how medical professionals apply the psychological age equality approach in dental care, the communication techniques used to reduce children's anxiety, and the challenges they face in implementing this approach in clinical practice. This interview also aims to determine the extent to which medical professionals feel this approach effectively increases children's acceptance of dental care.

1.3 Data Collection

The data in this study will be collected through three main methods:

1. In-depth interviews. Semi-structured interviews will be conducted with parents and medical personnel to gather their views on applying the psychological age equality approach in children's dental care. These interviews will be conducted in person or through an online platform, depending on the convenience of the respondents. This interview explores respondents' personal experiences, challenges, and perceptions of the effectiveness of the communication techniques.
2. Direct Observation. Researchers will make direct observations of children undergoing dental procedures. These observations will record children's behaviour during the treatment process, such as anxiety levels, compliance, and reactions to communication techniques used by dentists. These observations will also record the interaction between the child and the medical personnel and the use of distraction tools or techniques applied during the procedure.
3. Documentation Studies. In addition to interviews and observations, additional data can be obtained through documentation studies, such as medical records or reports on dental procedures performed on children. This data can provide additional context regarding the type of care received by the children in the study and help validate the results of interviews and observations.
4. Data Analysis. The collected data will be analysed using thematic analysis to identify patterns and themes related to applying the psychological age equality approach in children's dental care. The main focus of the analysis is on the influence of communication techniques on children's anxiety, children's cooperative behaviour, and the perception of parents and medical personnel on the effectiveness of this approach. Researchers will categorise the data based on key emerging themes, such as anxiety reduction, dental care acceptance, effective communication techniques, and challenges faced in implementation.

1.4 Rationalisation of Respondent Selection

The selection of the number and type of respondents is based on the importance of obtaining comprehensive insights from various perspectives in pediatric dental care. Children, as the main subjects, provided a direct picture of the impact of the psychological age equality approach on their anxiety and behaviour during treatment. Parents have an important role in supporting their children, so interviews with parents will provide more insight into their perception of changes in children's acceptance of dental care. Medical personnel are the ones who apply communication techniques, so interviews with them will provide a better understanding of how this approach is applied in clinical practice and the challenges faced in its implementation.

Using these three groups of respondents, the study aims to provide a more complete and holistic picture of the effectiveness of the psychological age equality approach in reducing children's anxiety and increasing their acceptance of dental care.

1.5 Population and Sample

This study focuses on early childhood undergoing dental care, intending to explore the application of a psychological age equality approach in pediatric dental care. The study population consisted of children aged 3 to 6 years who underwent dental procedures at dental clinic X, one of the dental health service centres with experience in implementing a psychological approach sensitive to the child's age. The age of 3 to 6 years was chosen because, in this age range, children often experience anxiety and fear of dental procedures, and a more child-friendly approach is essential to reduce their fears, as well as ensure they are more cooperative in undergoing treatment. The research sample consisted of 20 children selected using purposive sampling, a sample selection technique based on specific criteria relevant to the research objectives. In this case, the research sample was taken from children who had undergone dental treatment at dental clinic X and had been given treatment with a psychological age equality approach. This approach includes age-appropriate communication techniques, such as simple explanations of procedures, distractions, and positive reinforcement techniques, designed to reduce anxiety and increase children's acceptance of dental care.

Sample selection using purposive sampling was carried out to ensure that the children involved in this study had characteristics that were in accordance with the purpose of the study, namely those who had received dental care with an age-appropriate psychological approach. This sample is selected based on the following criteria:

1. Children aged 3-6 years who receive dental treatment at dental clinic X.
2. Children who have received treatment with a psychological age equality approach involve communication techniques appropriate to the child's cognitive and emotional development.
3. Children who are willing to participate in the study, with the consent of their parents or guardians.

In addition, to ensure diversity in the sample, children from various social and economic backgrounds were selected to explore whether the psychological age equality approach is widely acceptable to children of various conditions. Thus, although the sample size is relatively small, the purposive sampling technique allows researchers to obtain more in-depth and relevant data regarding applying the age equality approach in pediatric dental care.

Parental involvement is also essential in this study, so parents of children selected to be respondents will be asked to consent and fill out a questionnaire or conduct an interview related to their experience in accompanying children during dental care. By involving parents, this study can obtain a more holistic picture of the impact of the psychological age equality approach on children and parents' perceptions of its influence on children's acceptance of dental care.

1.6 Sample Limitations:

Although 20 children were selected for the study, this relatively small sample size aimed to delve deeper into children's experiences and responses in the context of dental care; this study does not claim to be representative of the entire population of children undergoing dental care but instead focuses on gaining rich insights into the application of the psychological age equality approach. Therefore, the results of this study may provide a more detailed picture of the effectiveness of psychological approaches in reducing children's anxiety during dental care, although the generalisation of the results will be limited to the selected sample.

Thus, the population and sample of this study are designed to provide a better understanding of how the psychological age equality approach may affect children's acceptance of dental care and how age-appropriate communication techniques can help reduce anxiety and improve child collaboration during medical procedures. The results of this study are expected to provide a basis for developing more effective and child-friendly dental care strategies in the future.

1.7 Research Instruments

The research instruments used in this study are designed to explore a deep understanding of applying the Psychological Age Equity Approach in pediatric dental care and analyse the effectiveness of communication techniques in reducing children's anxiety and increasing their acceptance of dental care. In order to achieve this goal, this study relies on several data collection

methods involving in-depth interviews, direct observation, and thematic analysis to analyse the results obtained.

In-Depth Interviews with Parents. In-depth interviews were conducted with the parents of the children involved in the study. This interview instrument was compiled to explore parents' views on their children's experiences during dental treatment, especially in the context of using a psychological age equality approach. The interview questions were focused on several aspects, including Parents' perception of children's anxiety before and after undergoing dental care with a psychological approach that is adjusted to age. Parents' experience in accompanying their children during dental procedures, including how they perceive their children's responses to communication techniques used by medical personnel. The role of parents in supporting children to cope with anxiety, as well as how they collaborate with medical personnel to create a positive care experience for children. Changes in a child's acceptance of dental care after using a psychological age equality approach, both at subsequent medical visits and on dental care habits at home. The interview will be conducted using a semi-structured format, allowing flexibility to dig into the issues that arise during the conversation while maintaining a focus on the relevant topic. Interviews will be recorded to ensure accurate data collection.

1.8 In-depth interviews with Medical Personnel

The second interview instrument was used to collect data from medical personnel, especially dentists and dental assistants involved in caring for children who were the research samples. The interview with medical personnel aims to obtain information on how the psychological age equality approach is applied in clinical practice and evaluate the successes and challenges faced in applying age-sensitive communication techniques to children. Some of the main focuses of this interview are:

1. Communication techniques used by medical personnel in explaining dental care procedures to children, as well as how these techniques are adjusted to the child's age and developmental level.
2. The experience of medical personnel in managing children's anxiety, as well as what techniques are considered most effective to reduce fear and improve child cooperation during treatment.
3. The challenges faced in applying this approach in clinical practice, as well as whether there are obstacles in adapting communication techniques with children who have high levels of anxiety.
4. Medical staff's perception of children's behaviour changes after using the psychological age equality approach, including whether they feel that children are more cooperative and less afraid of dental care.

The interviews were also semi-structured, with open-ended questions that allowed medical personnel to share their experiences and views more broadly. All interviews will be conducted with the permission and consent of the respondents and will be recorded for further analysis.

1.9 Direct Observation of Children Undergoing Dental Care

In addition to interviews, direct observation will be carried out during the dental treatment procedures undergone by the children. These observations aim to obtain empirical data on children's behaviour during treatment and assess their emotional reactions and cooperative behaviour to communication techniques applied by medical personnel. The main focus of observation includes:

1. Child's anxiety level: Observing signs of anxiety or fear in the child during the procedure, such as crying, restlessness, or refusing the procedure.
2. Child's cooperative behaviour: Assesses how cooperative the child is in following instructions or procedures performed by the dentist and how they respond to the instructions or tools used.
3. Response to communication techniques: Assess how effective communication techniques are used by medical personnel, such as age-appropriate explanations, distractions, or positive reinforcement, in reducing children's anxiety and improving their cooperation.
4. Interaction between the child and medical personnel: Observing how dentists and other medical staff interact with the child, including whether they use child-friendly approaches and adapt communication techniques to meet the child's psychological and emotional needs.

These observations will be conducted on a non-participatory basis, where the researcher will not be directly involved in the treatment procedure but only record and document the child's behaviour and interactions that occur during the procedure. The data collected from these observations will

provide an accurate picture of how communication techniques are applied in pediatric dental care and how children respond to the procedure.

1.10 Thematic Analysis

Data collected from in-depth interviews with parents, medical personnel, and direct observation will be analysed using thematic analysis. This approach allows researchers to identify patterns, themes, and categories from the qualitative data collected. This thematic analysis process involves the following steps:

1. Transcription: All interviews will be transcribed verbatim to ensure data collection accuracy. This transcription will be used for further analysis.
2. Coding: The collected data will be read and encoded to identify key themes related to applying the psychological age equality approach, the communication techniques, and their impact on children's anxiety and acceptance of dental care.
3. Theme Development: Based on the code that has been identified, the researcher will develop key themes that reflect the parent's experience, medical personnel, and children's behaviour during the procedure. These themes will be analysed to illustrate how the psychological age equality approach affects children's anxiety, behaviour, and acceptance of dental care.
4. Interpretation: The researcher will interpret the findings from the thematic analysis to better understand this approach's impact and provide recommendations that can be applied in pediatric dental care practices.

Using thematic analysis, this study will provide deeper insights into applying the psychological age equality approach in pediatric dental care and its effectiveness in reducing children's anxiety and improving their cooperation during dental procedures.

2. METHOD

This research procedure is designed to collect comprehensive data on applying the Psychological Age Equity Approach in pediatric dental care and analyse its impact on children's anxiety and acceptance during dental care. The study involved two main methods of data collection: in-depth interviews and direct observation. Both methods are used to explore the views of parents and medical personnel and to obtain first-hand data on children's behaviour during dental procedures. Here is the detailed procedure that will be followed in this study.

1. Interview

Objective: Interviews were conducted to obtain perspectives from parents and medical personnel regarding their experiences with applying the psychological age equality approach in pediatric dental care and to explore the effect of this approach on children's anxiety and acceptance.

Interview Steps: - **Respondent Selection:** Interviews will be conducted with the parents of the child who has received dental treatment at dental clinic X and with medical personnel (dentists and medical staff) who are directly involved in the children's dental care. Respondents will be selected based on purposive sampling criteria, namely parents accompanying their children during dental procedures and medical personnel applying a psychological age equality approach in dental care.

Interview Preparation: Before the interview, all respondents will be provided with clear research information regarding their objectives, procedures, and rights as participants, including the right to stop participating at any time without consequences. Written consent (informed consent) will be obtained from parents and medical personnel before the interview begins.

Interview Process:

Parents: Interviews with parents will focus on their experiences accompanying children during dental procedures and how they see changes in their child's acceptance of dental care after using an age-equity approach. The interview will include related questions:

1. Parents' perception of children's anxiety before and after dental treatment.
2. Children's responses to communication techniques used by medical personnel.
3. The role of parents in reducing children's anxiety and increasing their acceptance of dental care.
4. The effect of the age equality approach on children's dental care habits at home.

Medical Personnel: Interviews with medical personnel, including dentists and dental assistants, will explore how they apply a psychological age equality approach in pediatric dental care. This interview will also discuss the communication techniques they use to reduce children's anxiety and the challenges and successes they have experienced in implementing this approach. Questions asked of medical personnel include:

The most effective communication techniques in reducing children's anxiety:

1. The use of distractions, simple explanations, and positive reinforcement during the procedure.
2. They perceive changes in children's behaviour after using the age equality approach.
3. Challenges faced in applying this approach in daily practice.

Duration and Location: Interviews will last about 20-30 minutes per session and will be conducted in a dental clinic or a convenient location for respondents. Interviews will be recorded (with the respondent's permission) for further transcription and analysis.

Data Analysis: Data collected from interviews will be analysed using thematic analysis to identify key patterns and themes related to pediatric dental care acceptance, communication techniques, and the impact of psychological age equality approaches on children's anxiety and cooperation.

2. Live Observation

Objective: Direct observation was conducted to observe children's behaviour during dental procedures, specifically to assess their anxiety levels, responses to communication techniques, and their acceptance of dental care.

Observation Steps:

Selection of Children for Observation: Observation was carried out on the children who were the research samples, children aged 3-6 years who underwent dental treatment at dental clinic X with a psychological age equality approach. These children will be selected based on predetermined criteria, such as those who have received dental care with communication techniques adapted to their age.

Observation Procedure:

1. **Child Anxiety Observation:** Researchers will observe signs of anxiety in the child during the procedure, such as crying, restlessness, or refusing treatment. In addition, the researcher will record how the child responds to instructions or tools used by the dentist.
2. **Responses to Communication Techniques:** Researchers will record children's responses to the communication techniques, such as simple explanations, using distractions (e.g. toys or videos), and positive reinforcement (praise or rewards). These observations aim to see how these techniques reduce anxiety and improve child cooperation.
3. **Interaction with Medical Personnel:** Observations will also be made on the interaction between the child and the medical personnel to assess how the medical personnel adapt to the psychological and emotional needs of the child, as well as how they create a supportive environment during dental procedures.
4. **Duration of Observation:** Observation will be made during the dental procedure, which usually takes 15 to 30 minutes, depending on the type of procedure performed (e.g., routine dental check-ups or dental fillings).
5. **Observation Notes:** Researchers will record all important findings during observation, including the child's signs of anxiety, response to instructions, and level of cooperation and acceptance of dental care. These observations will also record how medical personnel apply a psychological age equality approach during the procedure.

Data Analysis: Data collected from observations will be analysed descriptively, focusing on children's behavioural patterns that indicate anxiety levels or acceptance of dental care. The results of these observations will be compared with data from interviews to get a more complete picture of the effectiveness of the psychological age equality approach.

4. CONCLUSION

These findings suggest that age-adjusted communication is one of the most effective techniques in reducing children's anxiety and increasing their acceptance of dental care. Explanations that use easy-to-understand language help children feel safer and more open to the

procedure. This technique follows the principles of communication that emphasise the importance of adapting the message to the recipient's cognitive development level, especially in children with a limited understanding of the medical world.

In addition, the use of distractions and positive reinforcement are two techniques that are very supportive in creating a pleasant experience for children during the treatment procedure. Distraction techniques are effective in reducing anxiety and pain in children during medical procedures, including dental care (Jones, 2006). Positive reinforcement has also increased children's motivation to behave cooperatively and reduce their anxiety about medical procedures. A small compliment or reward after the procedure serves as a positive reinforcer, which increases the likelihood that the child will be more cooperative in the next visit to the dentist.

4.1 Perception of Parents and Medical Personnel

The perception of parents and medical personnel shows that the psychological age equality approach benefits children and affects the quality of interaction between children, parents, and medical personnel. Parents feel more confident and calm knowing their children feel more valued and cooperative during care. This suggests that a more age-sensitive approach can reduce parental anxiety, creating a more favourable environment for children.

This approach also makes it easier for medical personnel to provide more effective treatment. Children who are more cooperative and less afraid allow medical personnel to perform procedures more efficiently and without obstacles caused by anxiety or rejection from the child. This supports research showing that effective communication with children increases their acceptance of medical care and reduces stress for medical personnel, which can improve the overall quality of care.

The results of this study show that the Psychological Age Equality Approach in pediatric dental care can reduce children's anxiety, improve their cooperation, and make dental procedures more effective and enjoyable. Age-appropriate communication techniques, such as simple explanations, distractions, and positive reinforcement, have proven to be very effective in helping children overcome their fears and receive treatment more positively. Positive perceptions of parents and medical personnel towards this approach show that this approach is not only beneficial for children but improves the quality of care and the relationship between medical personnel, children, and the elderly. This approach has the potential to be applied more widely in pediatric dental care to create a more enjoyable medical experience and reduce anxiety that can affect long-term dental health.

This study aims to explore the application of the Psychological Age Equity Approach in pediatric dental care and analyse effective communication techniques in reducing children's anxiety and increasing their acceptance of dental procedures. Based on the findings obtained through in-depth interviews, direct observations, and thematic analysis, it can be concluded that this approach has a significant positive impact on children's acceptance of dental care.

1. Child Anxiety Reduction

One of the key findings in the study was that children who received dental care with a psychological age equality approach showed a significant anxiety reduction. Age-adjusted explanations, distractions, and positive reinforcement have effectively reduced children's fear of dental procedures. Children who previously felt afraid or anxious about dental care became calmer and more cooperative after being given simple explanations appropriate to their developmental level.

This proves that an approach that considers the child's psychological and emotional aspects is crucial in supporting successful medical treatment at an early age.

2. Improves Child Collaboration

In addition to reducing anxiety, applying the psychological age equality approach has also improved children's cooperation during dental procedures. Children given communication techniques appropriate to their age tend to be more cooperative and do not refuse medical procedures. Distractions, such as the use of toys or interesting videos, also help children focus on fun things instead of focusing on their fears of medical devices or procedures being performed.

3. Effective Communication Techniques

The communication techniques used in this approach, such as age-appropriate explanations, distractions, and positive reinforcement, have proven to be very effective in reducing children's anxiety and increasing their acceptance of dental care. Explanations given by medical personnel using simple and easy-to-understand language can help children feel safer and reduce their fear of the medical devices they see. Using distractions through games or videos also helps distract the

child from fear, while positive reinforcement, such as giving praise or rewards after the procedure is completed, strengthens the child's cooperative behaviour and builds confidence.

4. Perception of Parents and Medical Personnel

This study also shows that the psychological age equality approach has a positive impact on children, parents, and medical personnel. Parents report that their children become calmer and more cooperative in undergoing dental procedures after this approach is implemented. They feel more confident in accompanying the child during the treatment, as their children feel more valued and involved in the treatment process. Similarly, medical personnel find it easier to work with cooperative and fearless children, which helps them provide care more effectively and efficiently. This shows that applying a more age-sensitive approach improves the quality of dental care and the relationship between medical personnel, children, and parents.

5. Contribution to Children's Dental Care Practice

The results of this study make an important contribution to children's dental care practices by showing that a more psychological and age-based approach can improve the overall childcare experience. Age-appropriate communication techniques, such as simple explanations, distractions, and positive reinforcement, can be applied more broadly in dental care practices for children. This approach suggests that pediatric dental care requires technical skills and a deeper understanding of the psychological and emotional factors that affect a child's acceptance of medical procedures.

The psychological age equality approach effectively reduces children's anxiety, improves cooperation, and creates a positive dental care experience. However, further research is needed to explore its long-term impact on dental health, its effect on children with special needs or higher anxiety levels, and to enhance its implementation. Training medical personnel in child-friendly communication techniques is essential to maximize the approach's benefits and support better dental health for children.

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