

Evaluation of Motivational Interview as Anticipatory Guidance in Mothers of Special Health Care Needs Children-A Randomized Clinical Study

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Abstract: ***Aim:** To evaluate the effectiveness of Motivational Interviewing (MI) as a form of anticipatory guidance in improving the knowledge and attitude of mothers of children with Special Healthcare Needs (SHCN) toward oral health care. **Methodology:** A prospective interventional study was conducted among 37 mothers of children aged 3–11 years with SHCN from two randomly selected special schools in Dakshina Kannada District, Karnataka. A validated self-administered questionnaire containing 25 closed-ended questions assessed baseline knowledge and attitude. Participants received motivational interview videos and anticipatory guidance materials via electronic platforms. After the intervention, the same questionnaire was re-administered. Statistical analysis was performed using SPSS software, and paired t-tests and Chi-square tests were used to assess the significance of changes in knowledge and attitude. A p-value < 0.05 was considered statistically significant. **Results:** Knowledge Scores: Pre-intervention – 5.91 ± 1.65 ; Post-intervention – 12.05 ± 0.57 ($p = 0.000000537$). Attitude Scores: Pre-intervention – 7.45 ± 1.40 ; Post-intervention – 9.16 ± 0.72 ($p = 0.00000655$). Knowledge levels improved from only 5.4% of participants demonstrating “good” knowledge at baseline to 100% post-intervention. Attitude levels improved from 21.6% “good” attitude pre-intervention to 81.08% post-intervention. Both knowledge and attitude improvements were statistically significant. **Conclusion:** Our study highlights the positive impact of Motivational Interviewing (MI) on mothers of children with SHCN, emphasizing its role in raising caregiver awareness. Pediatric dentists should move beyond routine guidance by integrating MI to address knowledge gaps and deliver targeted interventions, ultimately improving both oral health and overall well-being in these children.*

Keywords: Motivational interview, MI, Special children, Anticipatory Guidance, KAP, SHCN

1. Introduction

Providing preventive and therapeutic oral healthcare to individuals with special healthcare needs (SHCN) is a core aspect of pediatric dentistry. SHCN involves physical, mental, behavioral, cognitive, or emotional impairments that may limit self-care and major life activities, requiring specialized healthcare services. These conditions may be congenital or acquired, impacting basic oral health routines.¹

Oral health significantly contributes to overall well-being. Poor oral health negatively affects general health and quality of life.¹ Children with SHCN are at higher risk for oral diseases like periodontal disease, dental caries, enamel hypoplasia, malocclusion, and bruxism. Factors like caregiver awareness and knowledge play a crucial role in maintaining oral hygiene in this population.

The American Academy of Pediatric Dentistry (AAPD) emphasizes anticipatory guidance for holistic care. This process provides caregivers with practical, developmentally appropriate information to prepare for children's health milestones. For children with SHCN, anticipatory guidance is essential for addressing unique dental challenges, such as higher risks of caries and gingival issues. It empowers caregivers to implement preventive measures, manage anxiety, and collaborate with healthcare professionals to ensure optimal care.²

Motivational interviewing (MI), developed by Miller and Rollnick, is a tested method of anticipatory guidance. MI

aims to encourage behavioral change in patients, including children with SHCN who may have low motivation for oral health practices. In pediatric dentistry, MI helps improve oral hygiene practices like brushing and applying fluoride varnish, overcoming barriers to care.³

By engaging both the child and their caregivers, MI builds confidence and fosters positive behavior changes. This study aims to evaluate mothers' attitudes and knowledge of SHCN oral health before and after motivational interviewing, emphasizing its role in improving oral hygiene and overall quality of life for these children.

2. Methodology

Two special schools in the Dakshina Kannada district, Karnataka, were randomly selected for the study, with necessary permissions obtained from school principals and parents/caregivers. The study involved 37 mothers of children aged 3–11 years with special healthcare needs. Participants were informed about the study's purpose, and informed consent was obtained.

A self-administered structured questionnaire with 25 closed-ended questions assessed key variables. Initially developed in English, it was translated into regional languages, pretested, and validated among 10 participants for feasibility, clarity, and acceptability. Participants completed an initial online questionnaire to assess baseline motivation, coping strategies, and well-being.

Motivational interview videos and anticipatory guidance materials were electronically delivered via email or messaging platforms. A follow-up assessment re-administered the initial questionnaire, and collected data was analyzed to measure the intervention's impact by comparing baseline and follow-up responses.

3. Results

Data from both the pre-test and post-test were collected and evaluated to know about the knowledge and attitude of mothers of children with SHCN through MI towards oral health. 25 closed-ended questions with dichotomous and multiple level response choices were setup for pretest and posttest. All statistical analysis was performed by using the SPSS software. The mean and the standard deviation along with frequency and percentage was calculated for each variable and questions. Chi square test and Paired t test were carried out to test the statistical significance before and after intervention. $P < 0.05$ was considered as statistically significant.

Table 1: Overall frequency distribution and percentage with regards to knowledge among mothers of special health care needs children Pre and Post motivational interview

Knowledge	Total number	Good	Fair	Poor
Pre	37	2 (5.4%)	23 (62.1%)	12 (32.4%)
Post	37	37 (100%)	0 (0%)	0 (0%)

Post test results of knowledge among mothers of children with SHCN showed p value < 0.05 which was considered to be statistically significant

Table 2: Overall frequency distribution and percentage with regards to attitude among mothers of special health care needs children Pre and Post motivational interview

Attitude	Total number	Good	Fair	Poor
Pre	37	8 (21.6%)	27 (72.9%)	2 (5.4%)
Post	37	30 (81.08%)	7 (18.9%)	0 (0%)

Post test results of attitude among mothers of children with SHCN showed p value < 0.05 which was considered to be statistically significant

Table 3: Comparison of mean scores of knowledge and attitude among mothers of special health care needs children Pre and Post motivational interview using Paired t test

Parameters	Pre	Post	p- value
Knowledge	5.91± 1.65	12.05±0.57	0.0000000537
Attitude	7.45±1.40	9.16±0.72	0.000000655

$P < 0.05$ is considered as statistically significant

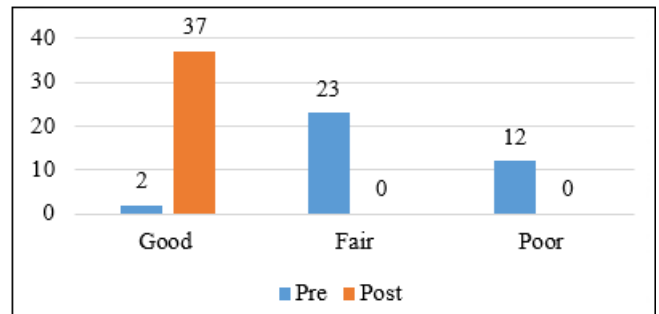


Figure 1: Comparison of frequency distribution in relation to knowledge among mothers of special health care needs children Pre and Post motivational interview

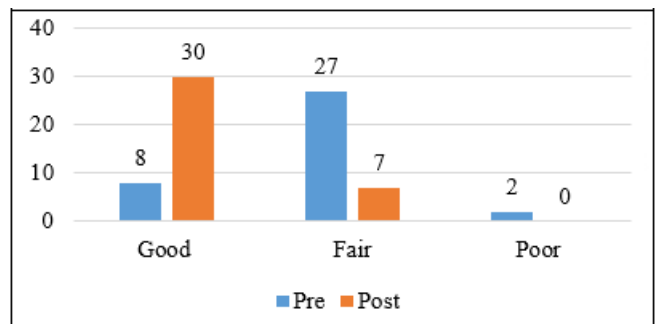


Figure 2: Comparison of frequency distribution in relation to Attitude among mothers of special health care needs children Pre and Post motivational interview

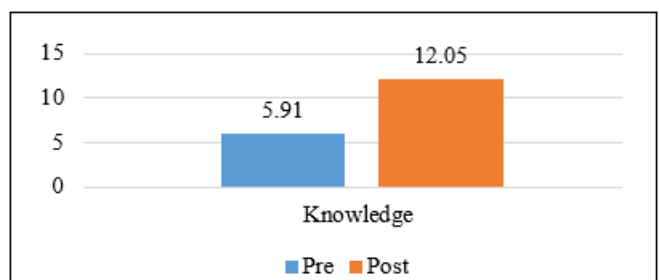


Figure 3: Comparison of mean scores of knowledge among mothers of special health care needs children Pre and Post motivational interview

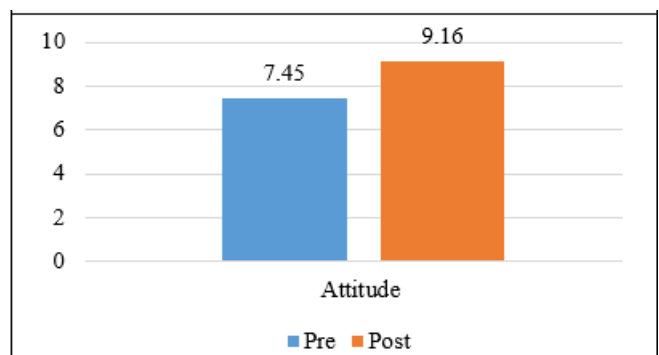


Figure 4: Comparison of mean scores of attitude among mothers of special health care needs children Pre and Post motivational interview

4. Discussion

Individuals with special health care needs (SHCN) require medical management and specialized interventions due to physical, mental, behavioral, cognitive, or emotional impairments. These conditions, whether congenital or

acquired, often hinder basic self-care and major life activities, necessitating tailored health service programs.

Oral health management for individuals with SHCN encompasses primary, secondary, and tertiary prevention. However, primary oral health care is frequently overlooked by caregivers, leading to the need for more complex treatments. Effective primary prevention requires an interdisciplinary approach involving dental professionals, physicians, parents, NGOs, and other health workers.

Mothers, as the primary caregivers from birth, play a crucial role in shaping their child's oral and general health. Therefore, imparting knowledge and awareness to mothers is essential. Anticipatory guidance serves this purpose by providing practical, developmentally appropriate information to help parents navigate significant physical, emotional, and psychological milestones in their child's health. Individualized discussions and counseling should be an integral part of every visit.

Motivational Interviewing (MI), a two-way collaborative conversation, is a form of anticipatory guidance designed to enhance motivation and commitment to change. By identifying personal gaps in knowledge and setting achievable goals, MI fosters meaningful behavioral improvements. In our study, MI demonstrated a significant increase in awareness among mothers of children with SHCN aged 3–11 years. Awareness levels following anticipatory guidance reached approximately 100%, with a retention rate exceeding 80% for all planned video sessions. Additionally, mothers completed an average of 98.3% of MI session videos, covering oral health topics with an engagement rate of 85–97%. Participant satisfaction and engagement were notably high.

The goal of MI is to empower individuals to adopt changes that mitigate the harmful effects of specific behaviors. However, utilizing MI with mothers instead of directly with children represents a "one person removed" approach, which could influence the intervention's effectiveness. Nevertheless, our study found MI to be significantly more effective than conventional health education strategies in improving both knowledge and attitudes among mothers of children with SHCN. These findings align with research conducted by Wu et al.¹⁴⁻²⁴

In other health domains, such as substance misuse and smoking cessation, MI has yielded considerable success (Brooks et al.). We hypothesize that factors such as perceived problem severity, barriers, and consequences contribute to varied responses to behavior modification interventions. Additionally, psychosocial elements—including stress, sense of coherence, oral health locus of control, and fatalistic beliefs—may impact the effectiveness of MI (Batliner et al.).²⁵ While a comprehensive analysis of MI's efficacy in different contexts is beyond the scope of this article, a study by McNeil et al. suggests a more structured approach than originally envisioned by MI's creators (Miller and Rollnick)²¹.

Our pre-test and post-test analyses following MI online sessions revealed a significant positive shift in mothers'

attitudes and their interest in learning about their child's oral health. Many caregivers of children with SHCN struggle to access timely, appropriate interventions. MI has been instrumental in bridging this gap, enhancing parental awareness, and fostering a proactive approach to addressing oral hygiene concerns.

Rather than directing, MI emphasizes listening, learning, and guiding, aligning with the perspectives of mothers and caregivers. Tomlin et al. (2014) highlighted MI's respect for individual and community autonomy, encouraging individuals to explore ambivalence, consider behavior change options, and collaboratively set goals. Similarly, our MI approach for mothers of SHCN children followed this model. Batliner et al. further emphasized the importance of a flexible, client-centered approach, ensuring MI remained a guiding framework rather than a rigid protocol.

During data collection for MI, we observed that a lack of structured guidance—not maternal negligence—was the primary barrier to maintaining children's oral hygiene. As pediatric and preventive dentists, we must take the lead in developing an organized, proactive approach that not only manages the oral health of children with SHCN but also educates, guides, and intervenes to prevent adverse outcomes.

Through structured anticipatory guidance and MI, we can empower caregivers with the necessary knowledge and confidence to ensure optimal oral health for children with special health care needs.

5. Conclusion

Our study demonstrated the significant impact of Motivational Interviewing (MI) on mothers of children with SHCN, marking an important milestone in raising awareness among caregivers. This underscores the need for pediatric dentists to go beyond routine anticipatory guidance by integrating MI to identify knowledge gaps and provide targeted interventions. By doing so, they can play a crucial role in improving not only the oral health of children with SHCN but also their overall well-being.

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