



Original research:

Training of Trainer Integrated Health Center Cadre: A pilot motivational interviewing-based training program on dental health behavior

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Abstract

Background: To reduce the prevalence of dental problems, especially dental caries, the Ministry of Health has launched a "2030 Indonesia Caries-free" program. The program targets the DMF-T of 12-year-old children to be reduced to below 1.26 by 2030. Therefore, it is necessary to design a dental health education program to increase people's motivation to adopt dental health behavior. Motivation is focused because it is an essential factor that supports a person in making decisions and behaving.

Aim: This study evaluates the pilot training for trainers using the motivational interviewing method to change dental health behavior.

Method: This program is designed using training for trainer methods with prepared participants to educate the community in their area. Participants are trained by a motivational interviewing coach and practice the motivational interviewing skills with a simulated client. This thirty-hour training includes a four-phase structure; lectures, case handling, practicum, and trials. The evaluation is carried out through three out of four-level evaluation methods from Kirkpatrick.

Result: Thirty women were recruited for this training. The women are cadres in integrated health service posts. Evaluation of this training revealed that reaction, learning, and behavior level show a good outcome.

Conclusion: Despite the limitation of participants' stiffness during skill practice, the trial run of this training program succeeded in producing thirty cadres ready to implement the program in the community.

Keywords: Motivation training, Cadre, parents, Caries-free, Dental health Behavior.

Introduction

Dental health is often neglected by most Indonesian society, especially those who live in rural areas. They assume that dental problems will not cause death, so maintaining health is not a priority. They are not familiar with the fact that several dental problems can affect the function of other body organs and interfere with daily productivity. Dental and oral disease is a risk factor that can affect a person's health in general and may act as a focal infection of various systemic diseases. A person is said to be unhealthy if he does not have healthy teeth. Almost all people worldwide suffer from dental and oral diseases, including in Indonesia^[1,2] Basic Health Research Data 2018 states that 93 percent of early childhood experience dental caries. The data means that only seven percent of children in Indonesia are free from dental caries. Compared with 2013 data, these data showed an increase in the prevalence of dental caries by 7.4%. In 2015, the Ministry of Health had issued a program that targets Indonesian children aged 12 years to be caries-free by 2030^[1] Considering that there are only ten years left to reach the government's target, it is necessary to take any action that can accelerate the program of the ministry of health.

Like other chronic diseases, dental and oral diseases are mostly multifactorial diseases primarily determined by a person's "lifestyle."^[3] Therefore, prevention can be done by adopting healthy behaviors, such as brushing teeth. WHO's the promotion of a healthy dental lifestyle has been identified by WHO as a priority and strategic orientation for promoting oral health.^[4] In addition to brushing teeth, routine dental checks, which are also used as indicators of dental health, have not yet become popular in Indonesia. The average Indonesian population goes to the dentist when they start to feel complaints. There has never been any research on implementing a year-one dental visit policy for children as recommended by the American Academy of Pediatric Dentistry and adopted by the Indonesian Pediatric Dentist Association.

Healthy habits should be formed from early childhood because this period is a critical stage for forming behavior, and parents are often receptive at this stage. The early childhood period is a period that offers good opportunities for behavioral intervention. Cultivating healthy dental habits in preschool children, whose permanent teeth will grow later, will maximize the chance of caries-free permanent dentition appearing throughout life.^[5,6]

Health education conventionally focuses on disseminating information and providing normative

advice. Studies have noted the shortcomings of this method.^[7] Although knowledge about dental health can almost always be increased by conventional methods, the knowledge gained in this way does not translate into persistent behavior change. Conventional health education is a futile endeavor that puts enthusiastic dentists into a state of despair and creates skepticism about the endeavor.^[8]

Based on the background description and support from local survey results, designing a dental health education program can increase people's motivation to adopt dental health behavior as part of health promotion. Motivation is emphasized in the design of this program because motivation is the driving force in a person that forces him to act.^[9,10] Motivation is an essential factor that supports a person in making or making decisions and behaving. This study evaluates the pilot training for trainers using the motivational interviewing method to change dental health behavior.

Materials and Methods:

The research ethics committee has approved this study of Universitas Padjadjaran. In a prior study, a simple preliminary survey on the level of mothers' knowledge and attitude of their children's oral health was carried out as a situation analysis, and data source of teaching materials need to be transferred to participants—data obtained by distributing questionnaires and interviews to 100 mothers in Sukajadi District, Bandung. The knowledge items were five true or false questions that explore the mother's knowledge about dental caries in children, first dental visit, what foods are healthy for teeth (Appendix 1). For each correct answer, the respondent gets 2 points and the total points obtained shows the category of mother's knowledge; category low=4, medium=6, high >8. Attitude items consist of five attitude statements with answer choices; always, sometimes, never. Answers that show positive attitudes are given 1 point, negative attitudes are given -1 points, and neutral attitudes (sometimes answers) are given 0 points. Thus, categorizing attitudes through the number of points obtained from the total sum -5 to 0 refers to negative attitudes, and 0 to 5 refers to positive attitudes.

Preliminary surveys results show that 77% of mothers have a low level of knowledge about children's oral health, while the attitude aspect reveals that all mothers (100%) have a negative attitude towards maintaining children's oral health. Furthermore, the results of open interviews with several representatives of respondents who were randomly selected reveal that the mother did not know several things, such as what drinks can be given to the child during sleeping; when

the child should be taken to the dentist for the first time; how to brush a child's teeth properly; and when the child stops using milk bottle (Appendix 2-3).

Based on the preliminary survey results, the training program is designed with the basic concepts for adult learning and enhancing lectures, group discussions, and experiential simulation. Facilitators are experts in their fields. The training participants were posyandu (Indonesian name for integrated health center) cadres in Bandung Indonesia. They were recruited through a selection system with the following criteria; experience as a cadre for at least two years, minimum education diploma, able to communicate with the community, operate computer programs as a learning tool, and interest in promoting public health education. Of 32 registrants, based on the Slovin formula with an error rate of 5%, a minimum sample size of 30 people was obtained.

The training consists of several activity sessions. The first session was a lecture containing material on dental health education, dental health promotion, and individual and group motivation interview methods in dental health education. The second session was a case presentation by screening clinical and field cases using conventional dental health education and motivational interviews. After the first and second sessions, the practicum was a follow-up session with role-playing activities between the training participants (role as motivator and community/patient). The last session was field practice, where participants conducted a field trial of outreach in their home environment targeting both adults and children audience. The evaluation is carried out through three out of four-level evaluation methods from Kirkpatrick. ^[11]

Level 1: evaluation of reaction

Level 1 assesses the satisfaction reactions of training participants from several aspects; the material provided, the available facilities, the strategy for delivering the material used by the training instructor, the available learning media, and the schedule of activities. The instrument used is an evaluation form with a 5-scale rating from strongly agree to disagree (Table 1) firmly. This training satisfaction reaction evaluation form contains assessment components for curriculum, Facilitator, accommodation, and the whole event. The overall average score indicates the level of participants' satisfaction with implementing this training, less than 0-2; fair 3; good 4-5.

Table 1. Satisfaction reaction evaluation form

Component
Curriculum
1. The topic presented interests me

2. Topics delivered according to my needs 3. The information provided in this program can be applied in my work 4. The material provided is in accordance with the objectives of this program
Facilitator 1. Deliver material/ideas/concepts in a clear and easy-to-understand manner 2. Prepare well and understand the topic presented 3. Listen and respond well to participants 4. Able to motivate participants to participate and express opinions on the topics discussed 5. Provide factual and easy-to-understand examples 6. Delivering material in a sequential and structured manner
Accommodation 1. The written material provided is useful and easy to understand 2. Audio-Visual tools are well used and help my understanding 3. Group discussion/Exercise/Case study/Role-play conducted in this program helps my understanding 4. I gained new knowledge and skills Overall, this program is useful for me

Level 2: Learning outcome

Level 2 evaluation was carried out to measure the participants' level of understanding after completing the training. This level of the evaluation was measured through a pre-post-test containing fifteen multiple-choice questions (Table 2) and five skills assessment components. Test scores from the pre-and post-test were compared to determine if participant's knowledge of the training material increased during the training program. Analysis of the effectiveness of the training assessed through Qualification Degree of N-gain Score: not effective < 40%; less effective 41-55%; quite effective 56-75%; and effective >76% ^[12]

Table 2. Pre-Posttest questions

No	Questions
1.	What is health behavior? a. actions individuals take that affect their health b. changes that not targeting a person's physical, emotional, or social health c. actions that lead to health, d. actions that increase one's risk of disease
2.	If it is associated with oral health, then the dental healthy behavior is? a. tooth brushing b. low sugar diet c. non-carb diet d. avoids sweet beverage

3.	What is dental health education a. Subjects in school about dental health b. Educating patients to control plaque c. All activities that help generate public appreciation for dental health d. Not include insight into ways to care for the mouth
4.	Can the current dental health education be said to have succeeded in preventing oral and dental disease? a. Yes b. No
5.	If no. 4 the answer is no, what factor do you think the cause is: a. the prevalence of caries is low b. no more oral and dental disease c. no motivation to change habit d. no need to change behavior
6.	Methods of dental health education include, but are not limited to: a. Direct method "face to face" b. Indirect method c. Group discussion d. Individual instruction
7.	Dental Health Education methods directly in groups can be done by: a. Lecture b. Demonstration c. Field review d. All of the above
8.	Non-compliance is a. Non-compliance or partial non-compliance with health-related behavior b. Health care problems c. Dental care problems d. All of the above
9.	Internal factors relating to non-compliance a. The fear and anxiety of visiting the dentist b. Lack of understanding or poor communication c. The perception that medication and / or dental care is not important d. All of the above statements
10.	External factors related to non-compliance a. Poor communication or involvement by health care providers b. Stress c. Socioeconomic status d. All of the above statements
11. can help address non-compliance a. Patient education b. Behavior modification program c. home care regimen d. All of the above

13.	Extrinsic motivation is: a. Motivation due to the encouragement of others b. The desire to carry out a task that is controlled by an external source c. Individuals do not realize it d. Not one of the above
14.	Which is not an element in motivation a. Motive b. Incentive c. Hope d. appreciation
15.	Which includes the category of motivational conditions? a. Attention, self-confidence, relevance b. Self-confidence, and satisfaction c. Not one of the above d. A and B
12.	Included in the intrinsic motivational stimulus are: a. Needs self-acceptance b. Curiosity c. Desire reigns d. All of the above

The skill competency is assessed through the ability of participants to provide counselling for both adult and child groups. Five skills components include counselling structure, communication technique, mastering training theory, eye contact with the audience, and media use for the presentation. The assessment was scored with 0 = not doing, 5 = doing but needing improvement, 10 = doing right. Each component has a maximum score of 10 so that the total score of a participant when completing the counselling task is 100, and the passing grade is 65.

Level 3: Behavior outcome

Level 3 evaluates the behavior of participants after the training. The aim is to see how participants' behavior after attending the training, what steps have been taken, and how the attitude of stakeholders towards the results of the training. The evaluation was carried out by sending a participant behavior tracking survey to all participants (Table 3).

Table 3. Behavior tracking survey

Questions
1. I practice using MI on a daily basis with the community
2. I use the spirit of MI in all my interaction with the community
3. I use OARS as means of eliciting information's from the community I am working with

4. I have begun to work with my co-workers to practice MI, and better learn the skills
5. I try to teach the community the skills of using MI any chance I get
6. I feel like my use of MI has increased since completing the training
7. I feel as though MI is an important skill set for me to have
8. I feel as though there are better tools than MI, for eliciting change from the community
9. My supervisors and co-workers are very supportive of using MI in the workplace

The survey was designed to measure the participant's thoughts on their use of MI and measure any changes in participant behavior. To quantify the level 3 participant behavior tracking surveys, all answers were given a numerical value (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree).

These values were then calculated together and averaged out to give an overall impression of participant's perceptions of their behavior change. This survey was implemented to be sent out every two

months for a year after the training. The first surveys were sent out to the participants before implementing the training so that a baseline of behavior could be determined.

The Kirkpatrick evaluation model provides four levels of evaluation; level 4, which is a long-term evaluation, is aimed to evaluate the institution's performance that occurs as a result of the performance of organizational members participating in the training. This evaluation can be done three to four years after the training. No instruments were developed to collect this data. Since this was a pilot project, the level 4 evaluation was not applied.

Results

Level 1: evaluation of reaction

Figure 1 shows the results of the participants' evaluation of the organizers based on the components curriculum (mean 4.56); Facilitator (mean 4.75); accommodation (mean 4.42); and the overall event according to participant reaction (mean 4.43). The overall average of the evaluation results of participants' reactions to the organizers is 4.53, which indicates "good."

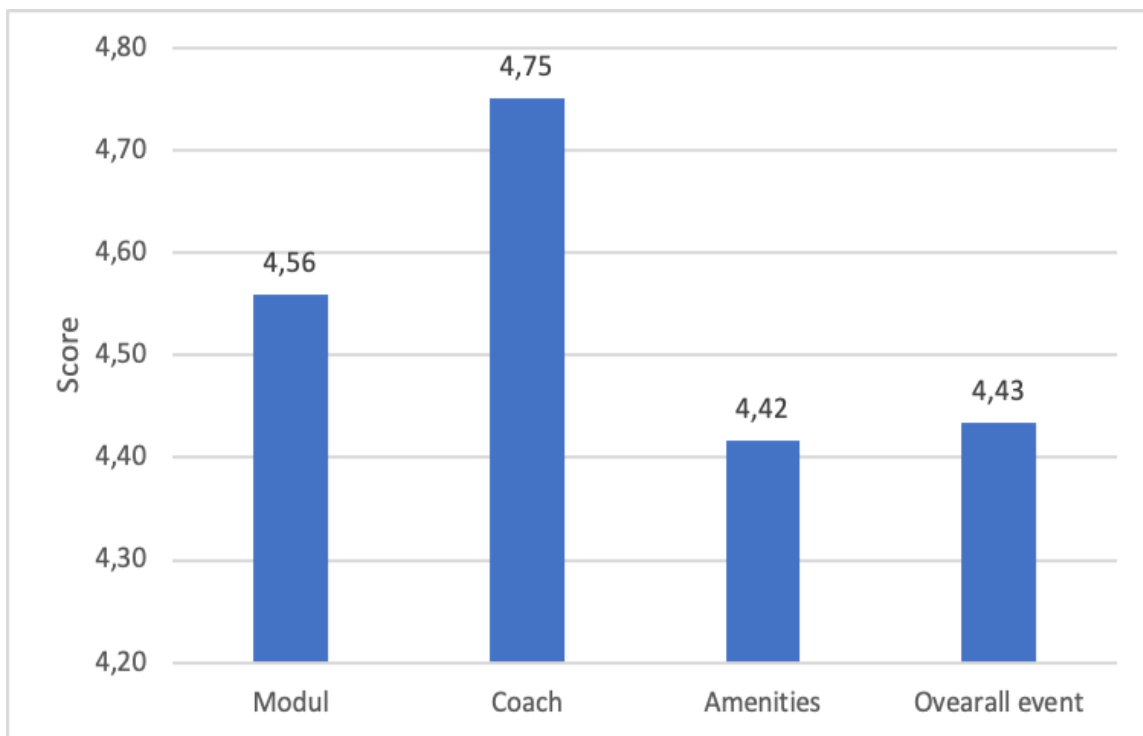


Figure 1. Assessment of participants' reactions to the training organizer.

Evaluation of learning outcomes (level 2) was carried out, which includes achieving learning objectives and learning outcomes expected from the learning process. This evaluation is essential because, as a pilot project, the results of this evaluation provide valuable information about an overview of what needs to be improved. The results of the evaluation of the knowledge aspect carried out by a written test showed an average N-Gain acquisition of 74.91% (Qualification Degree of N-gain Score 58-75), which was categorized as quite effective (Table 4).^[12]

Table 4. Learning outcome evaluation

Participant	Pre test	Post test	N Gain Score %
1	50	70	66,67
2	60	80	100,00
3	55	75	80,00
4	55	70	60,00
5	55	75	80,00
6	60	75	75,00
7	55	75	80,00
8	65	75	66,67
9	55	70	60,00
10	60	80	100,00
11	55	75	80,00
12	65	75	66,67
13	60	80	100,00
14	60	70	50,00
15	55	70	60,00
16	65	75	66,67
17	50	75	83,33
18	45	75	85,71
19	60	70	50,00
20	60	80	100,00

21	50	75	83,33
22	55	75	80,00
23	55	80	100,00
24	60	70	50,00
25	60	70	50,00
26	65	75	66,67
27	55	75	80,00
28	65	75	66,67

Skills assessment, a dental health behavior counseling practice with the MI method was applied to all participants individually. Each participant in their neighborhood carries out skills practice by providing counseling to adults and children separately. Skill practice shows that the average score obtained by the participants is 81.5, with the lowest score being 75 (Table 5). With a passing score of 65, all participants are declared to have achieved the desired competence. However, when viewed per component in Figure. 2, it appears that participants still have deficiencies in the component of counselling structure in the group of children (mean = 5.8), as well as components of counseling structure (mean = 5.8), communication technique (mean = 6, 0), and eye contact (mean = 5.3) during adult counseling.

Table 5. Descriptive analysis of dental health behavior counseling competency achievement with MI

	Score
N	30
Mean	81,5
Range	20
Std. Deviation	5,9
Maximum	75,0
Minimum	95,0

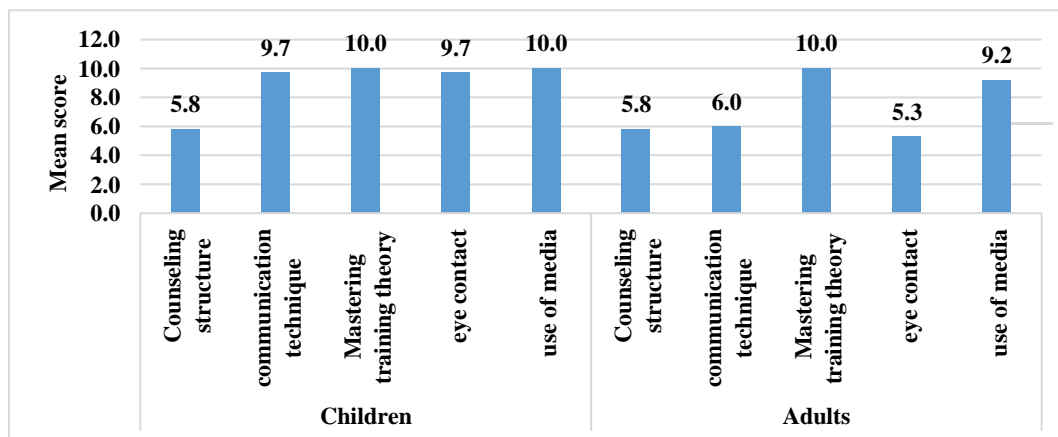


Figure 2. Competency assessment of participants in MI method counseling skills

Level 3: Behavior outcome

Level 3 evaluation was conducted to identify how the material in training was applied to the participants' jobs and workplaces. This behavior change was measured several times, with the first measurement being before implementing the training to determine the baseline of behavior (Graph 1). At this point, participants seemed to believe they had some knowledge of the training material and implemented it in their work during every counselling they have made. Still, the overall average for all responses to this first survey was only 1.8. The most significant change came after the second survey was completed, two

patient meetings is forgotten within one hour. In months after implementing the training program; the overall average jumped up from 1.8 to 4.0 after implementing the training program. From there, over a couple of months to the completing survey period, participant's overall averages plateaued around 4.8. From the data gathered, it seems safe to assume that participant's behavior regarding using MI while working with the community has increased. However, all of the data here is based on the participant's perceptions of their behavior change, so it should be taken with caution as to how much behavior change has occurred.

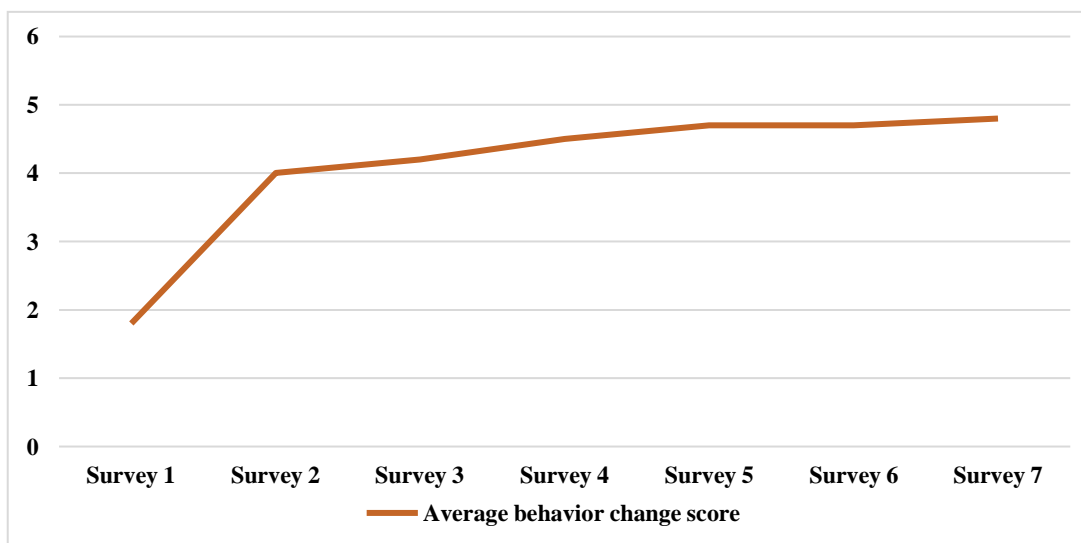


Figure 3. Behavior change timeline

Discussion

Conventional dental health education through providing advice and information is considered ineffective in adopting improved dental and oral health behaviors^[13] Although it is known that chronic dental disease is mainly preventable, it is also recognized that unless patients are involved in self-care and strategies are identified to improve oral health, treatment will be successful, and maintenance can be guaranteed. Traditionally, in health care settings, recommendations for behavior change are delivered through brief advice-giving during consultation.

This type of education provides "knowledge." and goal-setting for the doctor-centered patient, not patient-centered. The study has shown that adherence to health care provider recommendations tends to be low; 30-60% of the information provided in doctor /

addition, DiMatteo shows that patients do not follow 50% of health recommendations.

The results also concluded that adherence to healthy behaviors was crucial in achieving positive results as an effective treatment. Increased adherence to personnel recommendations has been demonstrated when knowledge and advice are combined with behavioral strategies.^[14] When the patient is unprepared for behavior change, such health education advice or open persuasion fails to motivate and lead to defensiveness. Thus, it is not surprising that many patients fail to change the behaviors that contribute to disease progression despite the best efforts of health professionals. In addition, when defensive behavior develops between doctor and patient, the patient may avoid returning for timely exertion, which can add to the disease burden.

This study's objective is to enable the participant to understand the role of ambivalence and community involvement in oral health behavior and the critical differences between traditional patient education and patient-centered approaches aimed at behavior change. This training also has long-term goals that include elements of dental health education in the curriculum for community dental health care services.

Activity evaluation is carried out to measure whether the participant's perceived motivation is successful or not. The participants filled in the questionnaire. The questions in the questionnaire include, among other things, the participant's assessment of the overall activity in general, the expectations fulfilled after attending the training, and opinions about the material. Interviews and observations will be conducted again with participants who participate in the training using the same measuring instrument grid as the grid on the competency assessment of participants who will become training participants to evaluate the program's success,

The initial survey conducted on fifty respondents showed that all respondents took their children to the dentist if there were complaints. Ninety respondents thought that children should start being brought to the dentist after the age of 5 years. In addition, the assumption that primary teeth were temporary teeth was not necessary because permanent teeth would replace them was still owned by all respondents. The open questionnaire is intended to accommodate respondents' aspirations regarding obtaining optimal oral health for children. Therefore, it can be concluded that the result of the respondent's answer is the need for knowledge on how to care for teeth properly.

In addition, an open questionnaire was also aimed at 10 Public Health Centre Dentists around the Bandung City area to explore their perceptions about the factors that cause low dental healthy behavior in the community. For example, there is an assumption that dental disease is not fatal and is not a priority in health care, so that the motivation for people to behave positively is shallow. The high cost of dental care is also cited as a barrier to people's behavior to check their teeth at the dentist regularly.

According to most dentists from the public health center, government programs such as the School Dental Health Unit and Community Dental Health Unit as well as the National Dental Health Month program held by one of the dental health providers are considered did not shape dental health behavior as it was expected in the beginning. The dental health behavior that failed to be shaped in this manner is assumed because of the unclear feedback of the

program, which only creates momentary euphoria among the targeted community.

Conclusion

The results of data collection in the field and preliminary trials to assess the competence of training participants to motivate parents to have healthy oral have raised the potential for this program to be implemented as part of the Community Dental and Oral Health Business service. Furthermore, after the program is implemented, it is necessary to evaluate, monitor, and program design improvement.

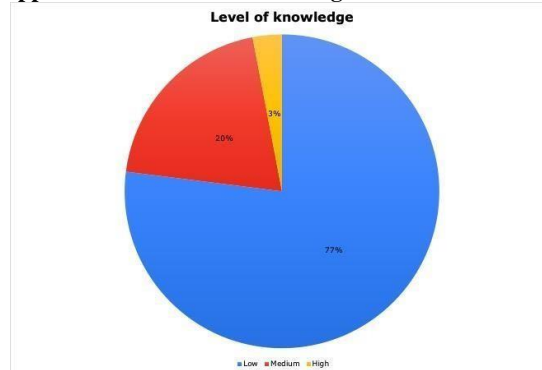
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Supp 1 Preliminary survey questionnaire

Oral health knowledge items				
No.	Questions	True	False	Don’t know
1	Children under 2 years can get cavities (caries)			
2	Cleaning the baby's mouth must be done after every meal/ drink milk since before the child's teeth grow			
3	A cavity in baby teeth does not need to be filled			
4	Children should start being taken to the dentist before their first birthday			
5	The number of milk teeth is 20 pieces			
Oral health attitude items				
No.	Questions	Always	Sometimes	Never
6	How often do you bite your child’s food into small pieces before giving it to the child			
7	How often do you check your child’s teeth			
8	How often do you give sweet foods to your child			
9	How often do you clean your child’s teeth when they are babies			
10	How often do you give water to each child after eating?			

Supp 2 Mother's level of knowledge on child's oral health

Supp 3 Mother's oral health attitude towards maintaining children's oral health
