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Original Article

Oral Health Promotion via Religious Institutions in Malaysia: A Formative Qualitative Evaluation

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Abstract

Introduction: *Kolaborasi Oral dan Agama* (KOA) initiatives, a collaboration between Malaysia's Oral Health Programme and religious organisations, aim to promote oral health awareness and practices through religious institutions such as mosques, temples and churches. This study aimed to conduct a formative evaluation of the KOA initiatives in Pahang, Malaysia, focusing on facilitating factors, barriers, and community acceptance from the perspectives of dental officers, religious representatives, and community members.

Methods: A qualitative phenomenological approach was employed. Semi-structured interviews were conducted with 11 purposively selected participants, including dental officers, religious representatives, and community members from diverse religious backgrounds. Thematic analysis was conducted on the transcribed data using NVivo software, with a focus on feasibility, acceptability, and strategies for improvement.

Results: Six themes emerged regarding facilitating factors and barriers. Facilitating factors included effective management, strong collaboration, utilisation of existing resources, and strategic timing and venues. The identified barriers included increased workload and challenging environmental conditions. The KOA initiatives were positively received, particularly for providing free services on non-working days. Suggestions for improvement included enhancing promotion, increasing the workforce, and strengthening inter-agency collaboration.

Conclusion: KOA initiatives effectively engage communities through intersectoral collaboration; however, challenges remain in resource allocation and communication. The positive reception suggests continued and expanded implementation, incorporating feedback to improve sustainability and community impact.

Keywords: Community participation, Health promotion, Intersectoral collaboration, Malaysia, Oral health, Qualitative evaluation, Religion

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Introduction

Oral health remains a fundamental component of general well-being, yet it is often overlooked in public health interventions. The *Kolaborasi Oral dan Agama* (KOA) initiative is a unique partnership introduced in 2018 by Malaysia's Oral Health Programme (OHP), under the Ministry of Health (MOH), aimed at promoting oral health through religious institutions across major faiths.[1] KOA represents a culturally tailored, community-based participatory approach that integrates oral health promotion into existing religious settings such as mosques, churches, temples, and *gurdwaras*.[1,2] Oral health messages can be delivered through various activities, such as dental talks, *khutbah*s, *tazkirah*s, dental check-ups, dental exhibitions, and interactive games and multimedia shows.[1-3]

Oral health promotion is a cost-effective strategy for decreasing the burdens of oral health diseases, maintaining oral health, and improving the quality of life in the community.[4,5] Health-related behaviours are often influenced by religiosity, with evidence suggesting that religious institutions can serve as powerful platforms for health promotion due to their strong community ties and moral authority.[3,6] Previous studies have demonstrated the potential of faith-based interventions to enhance health literacy and service outreach, particularly in underserved communities.[3,7] Despite this, there remains a paucity of published evaluations assessing the effectiveness or operational challenges of such programmes, especially within oral health.[6]

In Malaysia, the burden of oral diseases remains high.[8] The National Oral Health Survey of Adults (NOHSA) 2020 revealed that 94.6% of adults required dental treatment, with an alarming prevalence of caries and periodontal disease.[9] Meanwhile, public awareness and engagement with oral health messaging remain limited, especially among adults in non-urban settings.[10] Recognising the need to close this gap, KOA was developed as a strategic initiative to leverage the reach of religious institutions to improve access to preventive dental services and raise awareness among multi-ethnic populations. A basic Logic Model (Figure 1) was developed to illustrate the flow

of the KOA initiative, guiding programme planning, implementation, and dissemination of results.[11, 12]

Since its launch, KOA has been implemented widely across all Malaysian states, with Pahang conducting 95 KOA events between 2018 and 2022. Despite this expansion, no formal evaluation has been undertaken to document implementation processes, identify facilitating factors or barriers, or assess its acceptability among stakeholders. Addressing this evidence gap is crucial for informing future planning, resource reallocation, and the development of national guidelines for religion-based oral health promotion.[13]

Therefore, this study aims to conduct a formative evaluation of the KOA initiative in Pahang, Malaysia, by exploring the experiences, perceptions, and insights of stakeholders involved in its implementation. The objectives are to identify key enablers and barriers, assess community engagement, and provide evidence-informed recommendations to strengthen KOA and guide its expansion to other regions.

Methods

This study employed a qualitative phenomenological design to explore the perspectives of stakeholders involved in the KOA initiatives in Pahang, Malaysia. The approach was suitable for capturing in-depth experiences and meanings related to the implementation, barriers, and perceived value of the programme. The study was conducted in the state of Pahang, Malaysia, where KOA initiatives had been implemented across various religious institutions between 2018 and 2022. Participants were purposively selected to ensure representation from key stakeholder groups, including dental officers, representatives from religious institutions, and community members participating in the study. Inclusion criteria required participants to have been directly involved in or exposed to KOA events. Individuals unable to communicate in Malay or English, or those with hearing or speech impairments, were excluded.

Purposive sampling was employed to identify four KOA initiatives representing Malaysia's major religious groups: Islam, Christianity, Hinduism, and Buddhism. From each initiative, three participants (one dental officer, one religious representative, and one community member) were invited (Figure 2). Recruitment was facilitated through District Dental Health Offices, which provided contact details from most recently conducted events to minimise recall bias.[14]

Sampling continued until data saturation was achieved, which was determined by the absence of new codes or themes during two consecutive interviews. Saturation was reached by the 10th interview, and one additional interview was conducted to confirm thematic redundancy. Although 12 participants were initially identified, the final community member could not be interviewed due to multiple scheduling conflicts and a lack of response, despite three documented follow-up attempts. The final sample comprised 11 participants across all four religious groups.

Data were collected through semi-structured, face-to-face interviews conducted in either Malay or English, depending on the participant's preference. Interviews were held in quiet locations, such as rooms in religious institutions or dental clinics. A validated interview guide with six key domains: (i) programme planning and logistics, (ii) stakeholder collaboration, (iii) community engagement, (iv) perceived benefits and challenges, (v) sustainability and resource use, and (vi) suggestions for

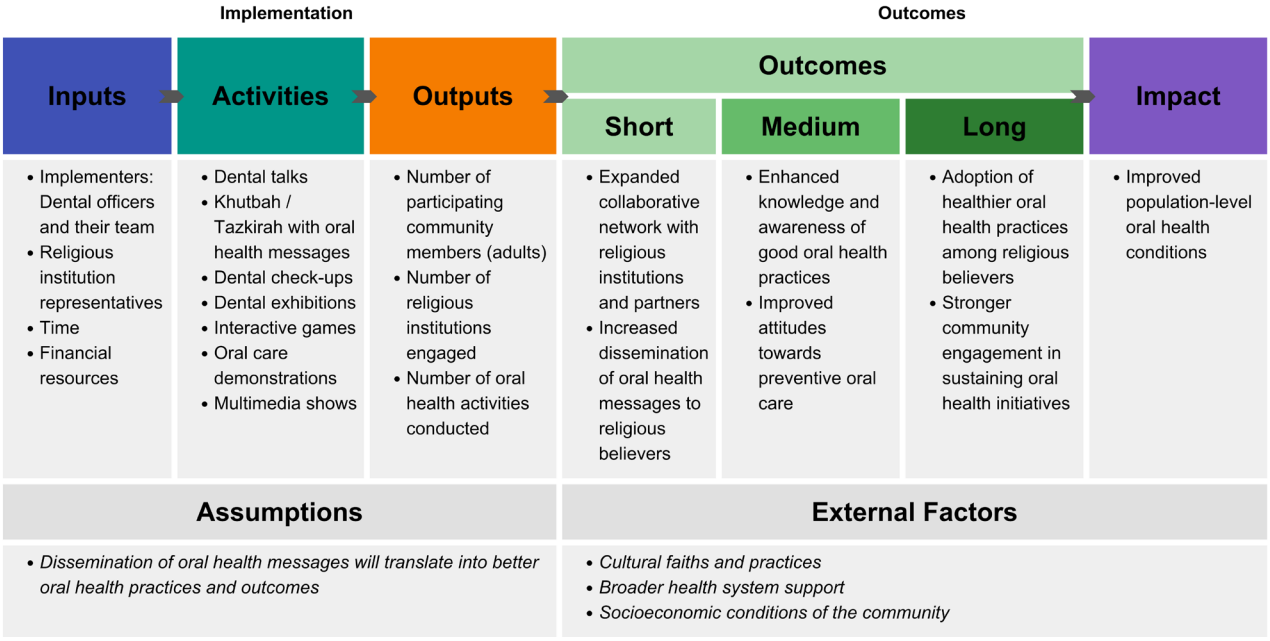

Figure 1. KOA initiative Basic Logic Model[1]

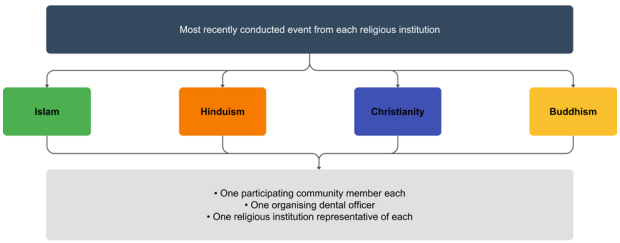

Figure 2. The process of the participants' selection

improvement, containing open-ended questions and probes, was used to explore perceptions of facilitating factors, barriers, acceptability, and improvement suggestions. Interviews lasted 30–55 minutes, were audio-recorded with the participants' consent, and were supplemented by field notes. Written informed consent was obtained before interviews. Ethical approval was granted by the Medical Research and Ethics Committee (MREC) of the Ministry of Health Malaysia. Participants were assured of confidentiality and their right to withdraw at any time.

Interview recordings were transcribed verbatim and analysed using thematic analysis. NVivo version 14 (QSR International) software facilitated systematic coding and theme development. Open coding was followed by grouping into categories and identifying overarching themes. To ensure rigour, transcript validation (member checking) was conducted with two participants, and data and investigator triangulation were also employed, involving an independent qualitative researcher with a background in dental public health and not engaged in data collection.[15] Reflexivity was maintained through journaling and memo writing throughout the study. Credibility was ensured through data triangulation and pilot testing of the interview guide. Transferability was enhanced by providing rich descriptions of the context and participant demographics, as well as the level of interest in the study.[15, 16] Dependability was maintained through audit trails and team-based analysis, and confirmability was supported by independent verification of selected transcripts. The summary of the process involved in the study is illustrated in Figure 3.

Results

A total of 11 participants were interviewed, comprising four dental officers, four religious representatives, and three community members. Due to data saturation on the acceptability, the research team did not contact the final community member for the interview. Participants represented diverse religious backgrounds, including Islam, Hinduism, Christianity, and Buddhism. The median age was 36 years, with a majority of participants being female (72.7%) and holding a tertiary education (72.7%). Table 1 summarises the demographic characteristics of the participants included in this study.

Thematic analysis yielded seven major themes (Table 2):

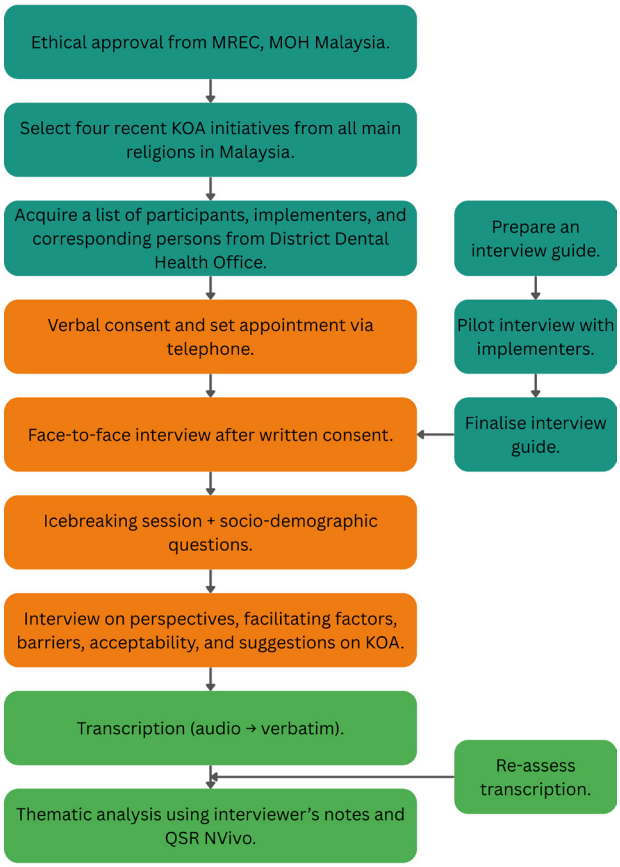

Figure 3. Conduct of the study

five related to facilitating factors, one to barriers, and one to acceptability. Additionally, eight suggestions for improving KOA implementation were derived.

Theme 1: Leadership support as a key facilitator

Participants highlighted strong leadership support and shared commitment to community well-being as critical success factors. Religious institutions and dental officers worked in coordination, fostering mutual respect and motivation. For example, a mosque representative (Participant R2) explained: "*The mosque leadership also agreed to run the programme because they saw benefits for the local community...*" ("*Jadi pihak atasan masjid pun, pengurusan masjid pun dah bersetuju untuk menjalankan program ini kerana mereka melihat manfaat yang besar kepada masyarakat setempat…*". Similarly, a Hindu temple representative (Participant R4) emphasised that their role extended beyond spiritual duties: "*…the temple duty is not just to make sure we collect and bring people to the place for prayer. We also have to make sure that the community is healthy. A healthy community is a healthy state, healthy country, healthy nation.*"

Theme 2: Strong coordination and task clarity

Clear delegation of responsibilities, efficient communication (e.g., via WhatsApp), and prior logistical planning contributed to smooth implementation.

Table 1. Demographic characteristics of the participants (n = 11)

		n	%
Age (Years)		27-65*	36**
Sex	Female	8	72.7
	Male	3	27.3
Ethnicity	Bumiputera	3	27.3
	Chinese	3	27.3
	Indian	4	36.4
	Others	1	9.0
Highest level of education	Primary	0	0.0
	Secondary	3	27.3
	Tertiary	8	72.7

* Minimum – Maximum
** Median (Range)

Joint promotional efforts between dental and religious teams increased community turnout. A dental officer (Participant D1) described this collaborative process: "*We cooperated very well. This was because the division of tasks was done early…*" ("*Kami bekerjasama dengan amat baik. Hal ini kerana agihan tugas telah dilakukan terlebih awal. Oleh itu, setiap orang sudah tahu siapa yang bertanggungjawab…*")

Theme 3: Resourcefulness amid budget constraints

Despite limited budgets, participants described creatively repurposing existing materials. Community sponsorships and donations supplemented logistical needs. Online platforms such as Facebook and WhatsApp were effectively used to advertise events. A dental officer (Participant D1) explained: "*We only used existing materials for now… no additional cost, but they were rather outdated...*" ("*… hanya boleh menggunakan peralatan yang sedia ada… tiada kos yang dikeluarkan dari pihak kami tetapi agak ketinggalan zaman…*").

Theme 4: Accessibility and flexible scheduling

Events held within or near religious institutions on weekends or public holidays facilitated attendance. Attendees appreciated accessibility, familiar surroundings, and cultural relevance of such venues. A church representative (Participant R6) shared her experience: "*… they provided a very good, I think it's a basketball court, I think so. They provided the whole court for us. So, we were able to do it openly and freely. So, we have space. Space is enough for us to conduct activities.*"

Themes 5 and 6: Increased workload and logistical constraints

Dental officers reported difficulties balancing clinical responsibilities and event coordination. Some religious committees faced workforce shortages, leading to multitasking and stress. Delays in planning and outdoor weather conditions (such as excessive heat) also challenged smooth execution. A dental officer (Participant D6) highlighted staffing pressures: "*…If we are the ones who are participating, you are the one who is organising, it's a bit of a burden definitely…if there's not enough staff, how are you going to conduct it, so that would be a bit of a burden sometimes…*". Similarly, another dental officer (Participant D1) described the discomfort of the event environment: "*Only in terms of comfort, as the weather was quite hot that day and no fans were provided…*" ("*Hanya dari segi keselesaan kerana cuaca pada hari itu agak panas dan tiada kipas angin yang disediakan…*").

Theme 7: Public appreciation and accessibility of services

Community members expressed high satisfaction, particularly appreciating the free dental services and convenience. Events held on non-working days were well-received, as they enabled access to dental care without disrupting daily routines. However, participants revealed a mixed understanding of KOA's underlying purpose. While some community members viewed the event as an opportunity for oral health education and awareness, others perceived it primarily as a free check-up service. In a few cases, even religious organisers initially assumed the programme was limited to treatment provision rather than health promotion. This divergence suggests that KOA's objectives were not always communicated clearly to stakeholders and the public.

Contributing factors may include inconsistent messaging across locations, limited pre-event briefings, or varied interpretations of posters and announcements.[17] These differing perceptions may influence how the programme is received[18]—some attendees may expect curative services only, potentially overlooking the preventive or educational components. Such inconsistencies may also affect community turnout and support, depending on how well expectations align with actual services offered.[18] A community member (Participant C10) explained the convenience of the event's scheduling: "*It's good because it was held on a day off. So, we had free time, and after mass, we could go straight for a dental check-up. On a regular workday, it would be more difficult because we have to work.*" ("*Bagus sebab dia buat time orang cuti. So, kita ada masa free, lepas mass terus boleh pergi check gigi. Kalau hari biasa, memang susah sikit sebab kena kerja.*")

Participants proposed several suggestions to enhance the effectiveness and sustainability of KOA initiatives. These included the need to improve cross-sector collaboration with other departments within the MOH to strengthen programme integration. The deployment of additional dental personnel was recommended to better manage large crowds during events. Improved pre-event coordination and communication between organising teams was seen as essential for smoother implementation. To boost community turnout, participants suggested expanding promotional efforts through local radio and

Table 2. Summary of themes formed

KOA INITIATIVES	HUMAN RESOURCES	FINANCIAL RESOURCES	LOGISTICS
Facilitating Factors	Theme 1: Effective and supportive management • Shared commitment to community well-being. • Promotes collaborative initiatives. Theme 2: Good cooperation among the organising committee • Streamlines event logistics and promotion. • Facilitates communication among organisers. • Clear roles and responsibilities with an adequate number of staff.	Theme 3: Utilisation of existing resources • Utilise existing but outdated resources and materials. • Securing sponsorships from religious followers. • Utilising online platforms such as WhatsApp and Facebook for event promotion.	Theme 4: Convenient venue and timing • A spacious area adjacent to the religious institution. • Better crowd on a non-working day.
Barriers	Theme 5: Increase in workload • Limited volunteers necessitated multitasking during event execution. • Miscommunication leads to delayed preparation time.	-	Theme 6: Challenging working environment • Outdoor setting exposed to hot weather • Inadequate time for preparation
Acceptability	Theme 7: Positive acceptance of the KOA Initiative among participating community members • Free outreach oral healthcare services on non-working days should be continued. • Mixed understanding of the purpose of KOA events, either as – Enhancing oral health awareness or – Increasing the number of individuals receiving dental check-ups.		
Suggestions for improvement	• Collaboration with other healthcare departments. • Additional dental personnel may be required if collaboration is necessary. • Streamline communication challenges between organisers.	• Enhance the advertisements and promotion of the KOA event. • Allocate sufficient time for early preparation, oral health activities and complementary gifts or tokens.	• Multiple dental services or activities can be performed simultaneously. • Appropriate timing. • Augment the number of visits to religious organisations or other community places.

printed materials such as leaflets. They also emphasised the importance of allocating more preparation time for activities and logistics, as well as providing small incentives or tokens to attract participation. Moreover, offering multiple oral health services concurrently, such as screenings and health education, was viewed as a way to maximise impact. Finally, participants recommended increasing the frequency of visits and extending outreach to other community venues beyond religious institutions.

Discussion

The findings from this study provide valuable insights into the KOA initiative, a unique public health programme aimed at promoting oral health awareness through religious institutions.[19] The results indicate that KOA was generally well-received by the community, facilitated by effective management, strong cooperation among organisers, and strategic utilisation of existing resources. However, several barriers were also identified, including excessive volunteer workload, logistical limitations, and communication challenges, which need to be addressed to facilitate improved implementation.

The effective management of KOA initiatives, characterised by a shared commitment among dental officers and religious representatives, emerged as a key facilitator. Successful community-based initiatives depend on multi-stakeholder engagement towards shared goals. Similarly, strong cooperation among organisers helped streamline logistics and communication, reinforcing the significance of early task delegation and clear role definition in health promotion programmes.[20]

Another notable strength was the utilisation of existing community resources. Despite constrained budgets and outdated materials, implementers creatively leveraged community sponsorships and digital platforms, such as WhatsApp and Facebook, to advertise events. Mobilising local assets could improve programme reach while minimising costs.[21] Furthermore, the scheduling of events on non-working days and the use of familiar religious venues were critical in maximising community participation. This approach reflects the work of Wells et al,[22] who demonstrated that community-based interventions held in accessible and trusted locations, such as places of worship, tend to yield higher engagement.

Despite its strengths, the KOA initiative faced several challenges during implementation. A key barrier was the increased workload on organisers and volunteers, particularly due to a limited workforce. Participants reported being burdened with multiple responsibilities, which led to delayed preparations and miscommunication.[13, 23] These findings underscore the need for adequate staffing and early event planning to ensure smoother execution. Concrete solutions include developing a formalised pool of trained volunteers, leveraging student dental assistants, or allocating flexi-hours for public-sector dental officers during outreach days.

Another barrier was the environmental discomfort

caused by conducting events in outdoor settings. Exposure to heat, combined with the absence of ventilation measures such as fans, negatively impacted both participant comfort and the quality of service delivery.[24] Moving forward, event guidelines should recommend minimum environmental standards—such as shaded areas, temporary tents, fans, and hydration facilities—to ensure service quality and public comfort.

Community members expressed high levels of satisfaction with KOA, mainly due to the provision of free outreach dental services.[25] These findings are essential considering the well-documented financial barriers to accessing dental care.[26] Kadaluru et al[27] similarly noted that cost is one of the most significant barriers, particularly among underserved populations.

However, the study found that participants held mixed interpretations of KOA's core objectives. While some community members and religious leaders understood the programme as a vehicle for oral health promotion and behaviour change, others perceived it merely as a one-off free dental check-up. This misalignment may stem from inconsistent messaging and community assumptions shaped by the cultural framing of religious events. Such expectation mismatches are not uncommon in health communication interventions, particularly when programme goals are not clearly aligned with audience perceptions or local norms. Ambiguity in health messaging often leads to confusion, especially when health initiatives are embedded within complex social or religious contexts. 17, 18 Co-produced messaging and meaningful civil society engagement are crucial for shaping public understanding and enhancing the legitimacy of state or institutional interventions.[28-30] To address this, KOA would benefit from more consistent upstream engagement with religious leaders, alongside co-designed and culturally tailored materials that explicitly communicate its preventive and promotive goals.

Participants proposed several practical recommendations to strengthen future KOA efforts. These included enhancing collaboration with other healthcare sectors, increasing staff availability, allocating more preparation time, and expanding promotional strategies using both digital and traditional media. These suggestions align with findings by Nghayo et al,[29] who highlighted that interdepartmental collaboration and comprehensive advertising strategies are crucial to improving the reach and sustainability of health programmes. Co-organising events with health screening units, family medicine teams, or NGOs could also spread the workload while offering comprehensive care.

Several limitations must be acknowledged. First, the sample size was relatively small and focused on a single state (Pahang), which limits generalisability to other regions of Malaysia. Second, while efforts were made to ensure neutrality, the involvement of MOH staff in the research may have introduced response bias. Third, the reliance on self-reported data may have influenced participant recall. Despite these limitations, data triangulation and reflexivity measures were implemented to enhance the study's credibility and trustworthiness.

Future evaluations should incorporate quantitative methods to assess the behavioural and clinical outcomes of KOA. Multi-site and longitudinal studies would be beneficial to determine the programme's scalability and cost-effectiveness across diverse communities in Malaysia. This study also suggests that KOA could serve as a replicable model for integrating culturally anchored, faith-based outreach with national oral health strategies—especially in countries with similar socio-religious contexts. This evaluation highlights key strategies for enhancing KOA's sustainability and scalability:

- Institutionalise KOA within the MOH's oral health strategic plan through national guidelines.
- Provide structured training and human resources support to local implementation teams.
- Strengthen inter-agency collaboration and explore co-funding mechanisms to enhance effectiveness and efficiency.
- Improve communication efforts through culturally tailored and multilingual promotional materials.

Conclusion

KOA initiatives have demonstrated strong potential as a replicable model for community-based oral health promotion, particularly through their strategic integration with religious institutions. The programme's success hinges on multi-stakeholder collaboration, community engagement, and the effective execution of logistics. However, challenges related to workload, limited resources, and inconsistent messaging must be addressed to improve programme implementation and sustainability. More transparent communication of programme objectives and enhanced promotion strategies could lead to greater impact and scalability. With thoughtful refinement and adequate resourcing, KOA holds significant promise not only for improving oral health outcomes but also for informing the design of culturally grounded, faith-linked health promotion strategies in Malaysia and similar contexts.

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Visualisation: Farlyana Alia Azizan.
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Writing – original draft: Kurudeven Tamil Chelvan, Nurul Solehah Ismail, Farlyana Alia Azizan, Aznilawati Abdul Aziz.
Writing – review & editing: Kurudeven Tamil Chelvan, Aznilawati Abdul Aziz.

Competing Interests

The authors declare that they have no conflicts of interest.

Ethical Approval

The study adhered to the Declaration of Helsinki and Malaysian Good Clinical Practice guidelines. Approval was granted by the Medical Research & Ethics Committee (MREC) of the Ministry of Health Malaysia (NMRR-21-1619-59916). Written informed consent was obtained from all participants.

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