INCREASING PERCENTAGE OF GINGIVITIS FREE MOUTH AMONG PRIMARY SCHOOLCHILDREN IN KULAI

PROGRAM KESIHATAN PERGIGIAN
KEMENTERIAN KESIHATAN MALAYSIA

GROUP MEMBERS

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KP Kulai

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KP Kulai Besar

PROBLEM IDENTIFICATION

1. Long waiting time for issue dentures to elderly patient in primary dental clinics in Kulai, Johor.
2. Low percentage of gingivitis free mouth among primary schoolchildren in Kulai, Johor
3. Long waiting time for outpatient in primary dental clinics in Kulai,Johor.
4. Low percentage of new attendance of antenatal patient dental check up in primary dental clinics in Kulai,Johor.
5. Low percentage of new attendant of toddler patient dental check up in primary dental clinics in Kulai,Johor.

PROBLEM PRIORITIZATION – S.M.A.R.T CRITERIA

No	Proposed topic	S	M	A	R	T	Total marks
1	Long waiting time for issue dentures to patient in primary dental clinics in Kulai, Johor.	18	14	13	12	8	65
2	**LOW PERCENTAGE OF GINGIVITIS FREE MOUTH AMONG PRIMARY SCHOOLCHILDREN IN KULAI, JOHOR**	21	21	15	18	12	**87**
3	Long waiting time for outpatient in primary dental clinics in Kulai,Johor.	13	14	12	12	8	59
4	Low percentage of new attendance antenatal patient in primary dental clinics in Kulai, Johor.	15	14	11	9	10	59
5	Low percentage of new attendant of toddler patient dental check up in primary dental clinics in Kulai,Johor.	13	12	8	11	12	56

Weightage : 1 = Low, 2 = Medium, 3 = High

NGT (Nominal Group Technique)
(7 GROUP MEMBERS)

PROBLEM TO BE STUDIED

Low Percentage of Gingivitis Free Mouth Among Primary Schoolchildren in Kulai

REASONS FOR SELECTION

S	**SERIOUSNESS**	• NOHSA 2020, revealed 94% of Malaysian adults have some form of periodontal disease, highlighting the need for early prevention in children. National Oral Health Survey for Adults in Malaysia (NOHSA) • Impact of untreated Gingivitis can lead to severe periodontal disease and other health issues like cardiovascular disease (Tonetti, Greenwell & Kornman, 2018). • In Kulai, gingivitis-free mouth among primary schoolchildren was 55.37% (2018) significantly below the national standard
M	**MEASURABLE**	Data of primary schoolchildren is easily retrievable from Health Information Management System (HIMS) and dental records.
A	**APPROPRIATENESS**	The Ministry of Health Malaysia has set clear objectives to improve children's oral health through School Dental Services under the Oral Health Programs.
R	**REMEDIABLE**	Remedial actions can be implemented to enhance outcomes through a multi-collaborative approach.
T	**TIMELINESS**	This study can be conducted and completed within recommended time frame.

INTRODUCTION

School Dental Service (SDS) School Dental Health Services in Malaysia began in **1948**. The services are delivered to schools through three main methods:

1. **School Dental Clinics**
2. **Mobile Dental Clinics**
3. **Mobile Dental Teams**

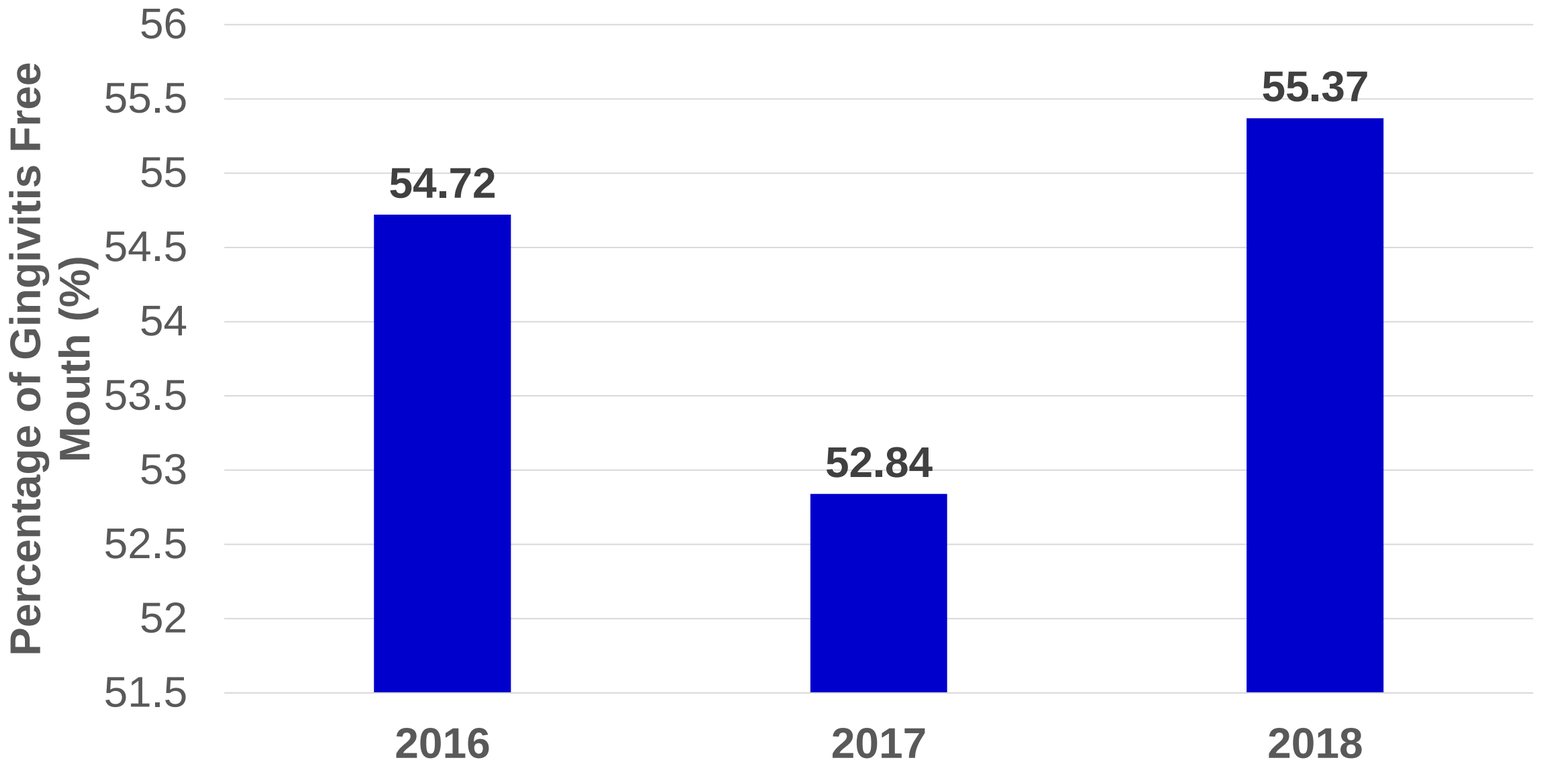
In 1985, **Incremental Dental Care** was introduced, focusing on comprehensive care for schoolchildren through the **Incremental Dental Care Concept**.

This comprehensive care includes preventive, curative, and restorative care delivered to school children.

In Kulai district, **School Dental Health Services** successfully provided **100% coverage** to **34 primary schools** with **total enrolment** of student **22314** in year 2023.

VERIFICATION OF THE PROBLEM

Trend gingivitis-free mouth among primary schoolchildren in Kulai from year 2016 to 2018



Standard: ≥73%

Reference:
Plan of Action Oral Health Program Ministry of Health Malaysia.

Year	2016	2017	2018
Total number of primary school	34	34	34
Total number student gingivitis-free mouth	11818	11249	11706
Total number of new case	21598	21289	21141
% Gingivitis-free mouth	**54.72%**	**52.84%**	**55.37%**

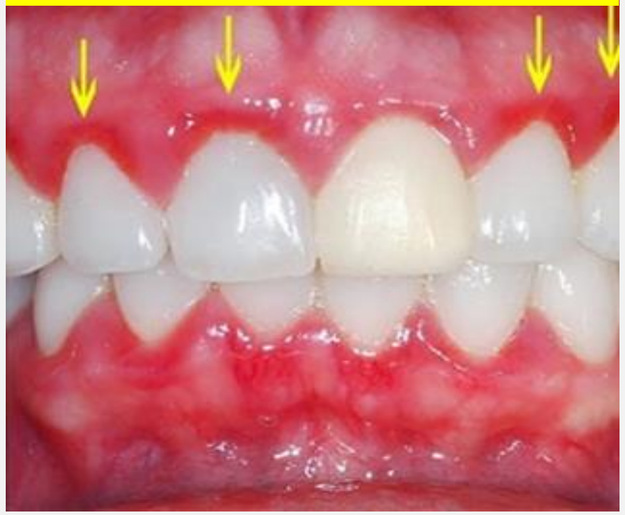
DEFINITION OF TERMS

Gingivitis

- Gingivitis is a **mild form of gingiva disease** .It causes **redness, swelling, and bleeding of the gingiva**. It is usually caused by **plaque buildup** on teeth.
- **Reversible** with proper oral hygiene care

Lang, N.P., & Bartold, P.M. (2018).

Gingivitis



Gingivitis Free Mouth ‘ Mulut Bebas Gingivitis’ (MBG)

- Refers to the indicates that there is **no presence of gingivitis,** and the **gum tissues are healthy**,

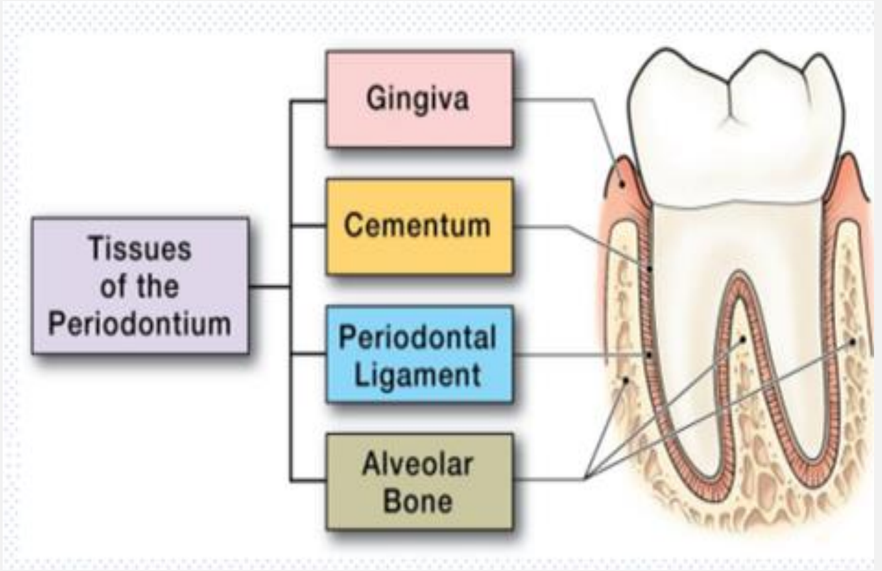
Lang, N.P., & Bartold, P.M. (2018).

Healthy Gingiva

Periodontium

- **Supporting structures of the teeth**, which include the gingiva, periodontal ligament, cementum, and alveolar bone.
- **main role is to keep teeth anchored in the jaw and absorb the forces from chewing and biting.**

Bartold, P.M., & Narayanan, A.S. (2006)



LITERATURE REVIEW

WHO has reported about 10-15% of the world population is suffering from **severe periodontal condition** affect patient social life and psychological wellbeing.

Dubey, Pragati et al. (2020)

Oral disease is a global burden and the importance of **preventive strategies targeting children**. Early intervention in oral health can prevent the progression of gingivitis, which has lifelong health implications.

Watt et al. (2019)

School-based oral health promotion programs are particularly **effective in low- and middle-income countries like Malaysia**, providing immediate dental care and instilling lifelong healthy habits through consistent and accessible education.

Akera et al. (2022)

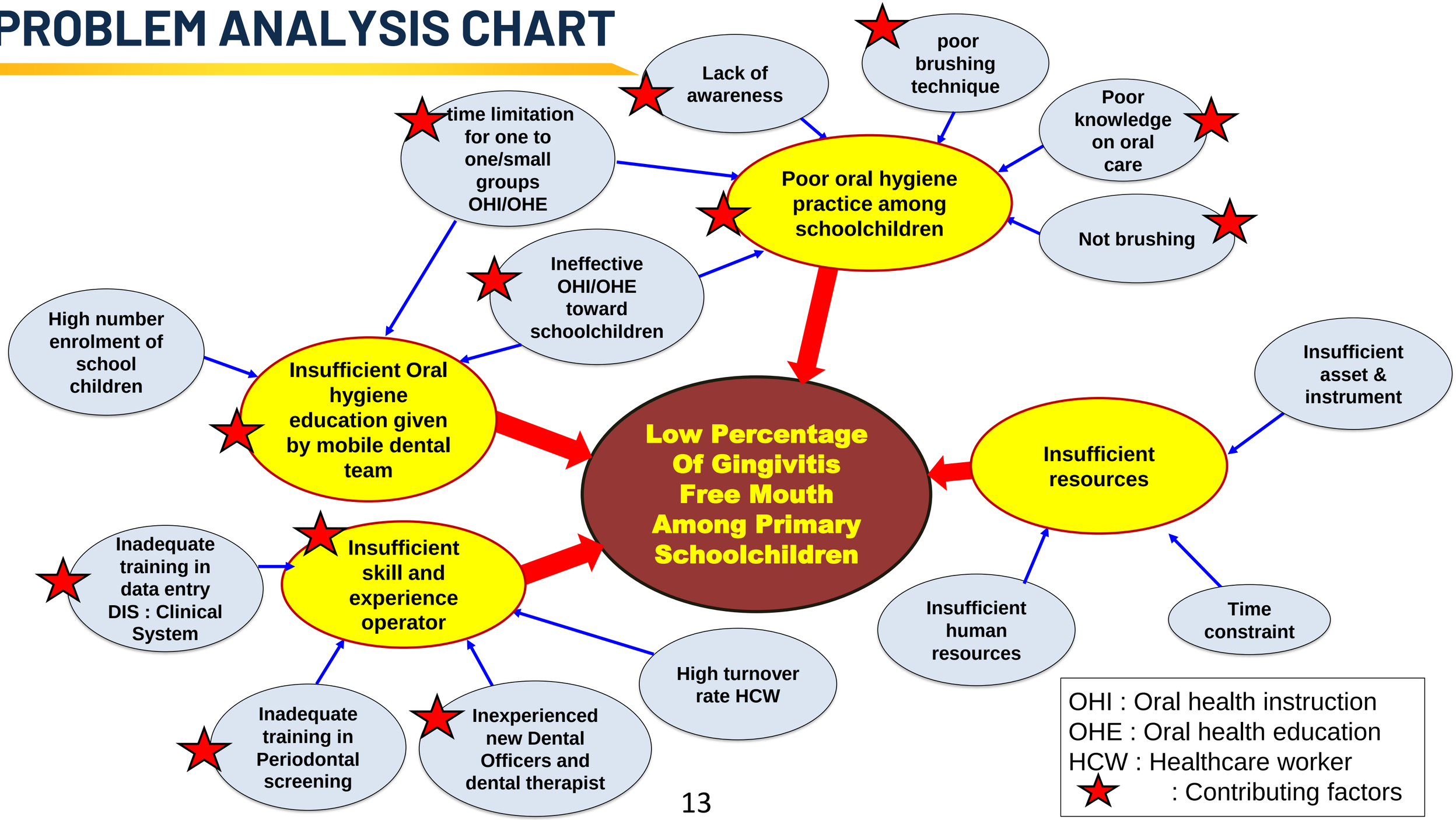
IMPACT OF PROGRESSIVE PERIODONTAL DISEASE ON CHILDREN AND ADULTS

Costing Impact:	• **High Treatment Costs:** Untreated gingivitis progresses **to periodontitis**, which requires more **expensive treatments** such as periodontal debridement, surgeries, and tooth replacements. Cecoro et al. (2020)
Systemic Health Impact:	• **Links to Systemic Diseases:** Periodontal disease is associated with an increased risk of systemic conditions, such as **cardiovascular disease, diabetes, and respiratory infections.** Tonetti et al. (2018) • **Effect on Children:** Chronic oral infections in children can affect growth and development, with potential impacts on their immune system. Jumanca et al. (2023)
Quality of Life Impact:	• **Decreased Quality of Life:** Periodontal disease leads to **pain, difficulty eating, and aesthetic concerns**, which affect **self-esteem** and **daily functioning.** • Poor oral health significantly **reduces children's academic performance** and **social interactions**. Guarnizo-Herreño & Wehby (2014)

PROBLEM ANALYSIS

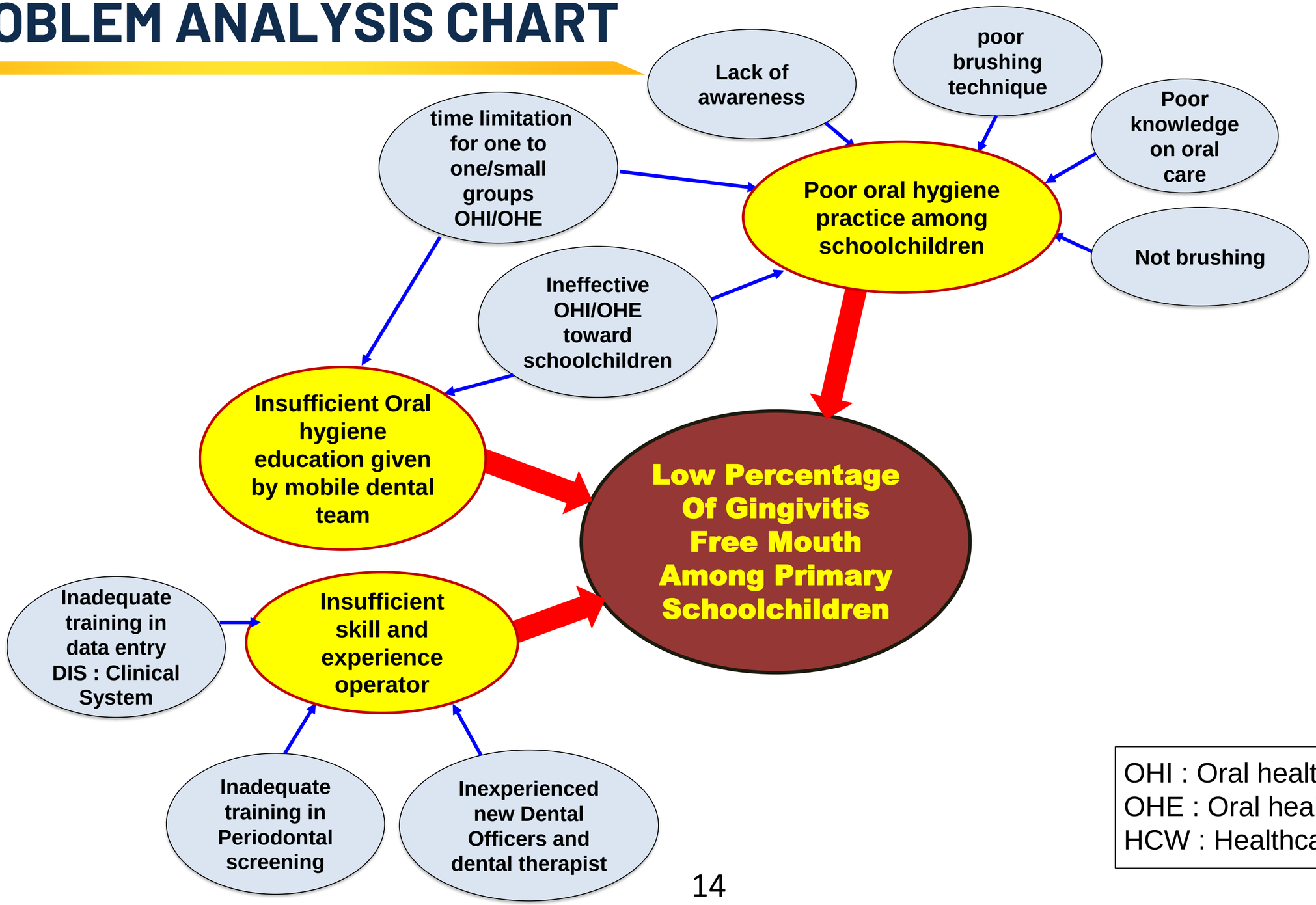
What	Low percentage of gingivitis free mouth among primary schoolchildren in Kulai
Why	Insufficient oral hygiene education provided by mobile dental teams, poor oral hygiene practices among primary schoolchildren and insufficient skills and training for healthcare workers
Where	All government primary schoolchildren in Kulai
Who	Dental officers, dental therapists and primary schoolchildren in Kulai
When	Since 2016 when the key performance indicator for gingivitis free mouth among primary schoolchildren in Kulai not achieved
How	The percentage of gingivitis free mouth remains low due to multiple factors such as insufficient oral hygiene education, poor oral hygiene practices and insufficient skills and training for healthcare workers

PROBLEM ANALYSIS CHART



OHI : Oral health instruction
OHE : Oral health education
HCW : Healthcare worker
★ : Contributing factors

PROBLEM ANALYSIS CHART



OHI : Oral health instruction
OHE : Oral health education
HCW : Healthcare worker

PROBLEM STATEMENT

01 PROBLEM

- In **2018**, only **55.37%** of primary schoolchildren in Kulai were **gingivitis-free**, far below the national standard **≥ 73%**

02 CAUSE

Multiple contributing factors:

- **Inadequate oral hygiene education** in schools (Tinanoff et al., 2020).
- **Poor oral hygiene practice among schoolchildren**
- **Insufficient skills among oral healthcare workers** in delivering effective preventive education and care(Riley et al., 2019).

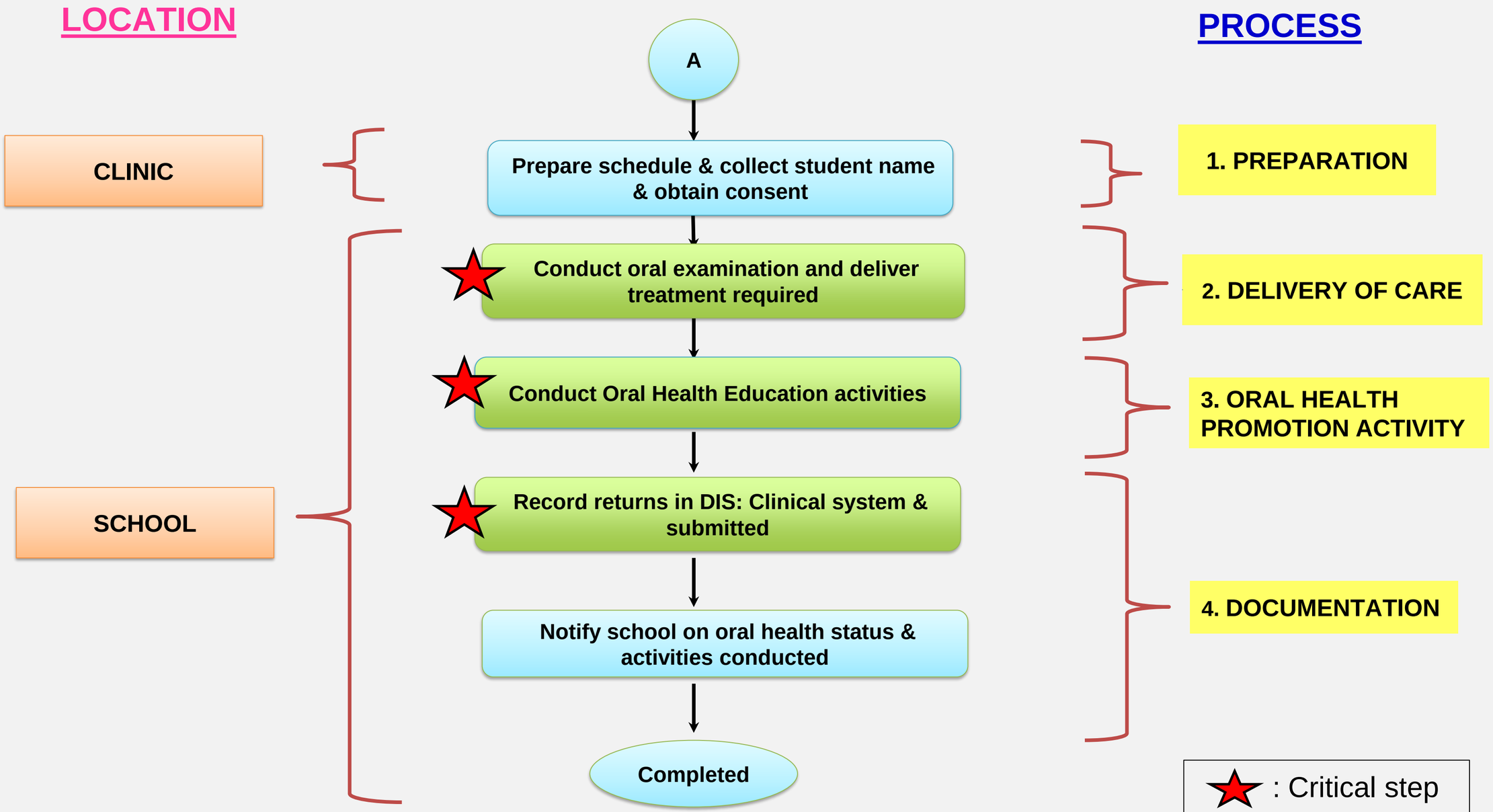
03 EFFECTS

- **Untreated gingivitis** can progress to **periodontal disease**, leading to **tooth loss** and increasing the risk of **systemic health problems** such as cardiovascular disease and diabetes (Tonetti et al., 2018)
- Poor oral health impacts **children's quality of life**, leading to discomfort, absenteeism, and lower academic performance (Guarnizo-Herreño et al., 2014).

04 AIM OF THE STUDY

- **To increase percentage of gingivitis free mouth among primary schoolchildren in Kulai.**

PROCESS OF CARE



MODEL OF GOOD CARE

No	Critical Step	Criteria	Standard
1.	Conduct oral examination and deliver treatment required	Examination and diagnosis with accuracy	100%
		Delivery of dental treatment required based on treatment plan	100%
2.	Conduct oral health education activities	Oral Health Education activities in small group	100%
		Personalised oral health education for prioritised student with poor oral hygiene	100%
3.	Record returns in DIS : Clinical System and submitted	Record returns in DIS : Clinical System without error	100%

KEY MEASURES FOR IMPROVEMENT

OBJECTIVES

General Objective

To increase percentage of gingivitis free mouth among primary schoolchildren.

Specific Objectives

1. To determine the percentage of gingivitis free mouth among primary schoolchildren in Kulai
2. To identify the contributing factors towards low percentage of gingivitis free mouth
3. To carry out remedial measures toward those contributing factors.
4. To evaluate the effectiveness of remedial measures.

INDICATOR AND STANDARD

Indicator

Percentage of Gingivitis free mouth among primary schoolchildren in Kulai.

Standard

$$\frac{\text{Total Gingivitis Free Mouth (MBG)}}{\text{Total primary school children}} \times 100$$

Standard: ≥73%

Reference*:* Plan of Action Oral Health Program Ministry of Health Malaysia.

PROCESS OF GATHERING INFORMATION

METHODOLOGY

PHASE	STUDY PERIOD
Verification	7 months (April 2019 - October 2019)
Cycle 1	9 months (April 2022 - December 2022)
Cycle 2	15 months (January 2023 – March 2024)

*Restriction Movement Order due to Pandemic Covid-19 hinder the continuation of remedial measures from end March 2020-March 2022

METHODOLOGY

Study Design	QA/QI study
Sampling Technique	Universal sampling
Sample Size	22266 primary school children
Tools	• Questionnaires (for primary schoolchildren, n= 134) • Questionnaire to operators in Klinik Pergigian Kulai Besar and Klinik Pergigian Kulai (n = 32) • Clinical monitoring audit form • Health Information Data System *via* DIS : Clinical System
Data Analysis	SPSS version 16.0

DIS : Clinical System - Dental Integrated Clinical System

INCLUSION AND EXCLUSION CRITERIA

Inclusion Criteria

All government primary schoolchildren (7-12 years old) in Kulai district.

Exclusion Criteria

Primary schoolchildren that refused examination treatment.

DATA COLLECTION FOR CONTRIBUTING FACTORS

Questionnaires : Increasing Percentage of Gingivitis Free Mouth Among Primary Schoolchildren in Kulai

Due to low percentage of gingivitis free mouth among primary schoolchildren in Kulai, we are conducting a survey to **identify the contributing factors** in order to implement appropriate measures to tackle the problem. Thank you for the cooperation.

kpbukitliki@gmail.com Switch account

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NAME

DR CHAI MIN WEI

POSITION

DENTAL OFFICER

DEPARTMENT

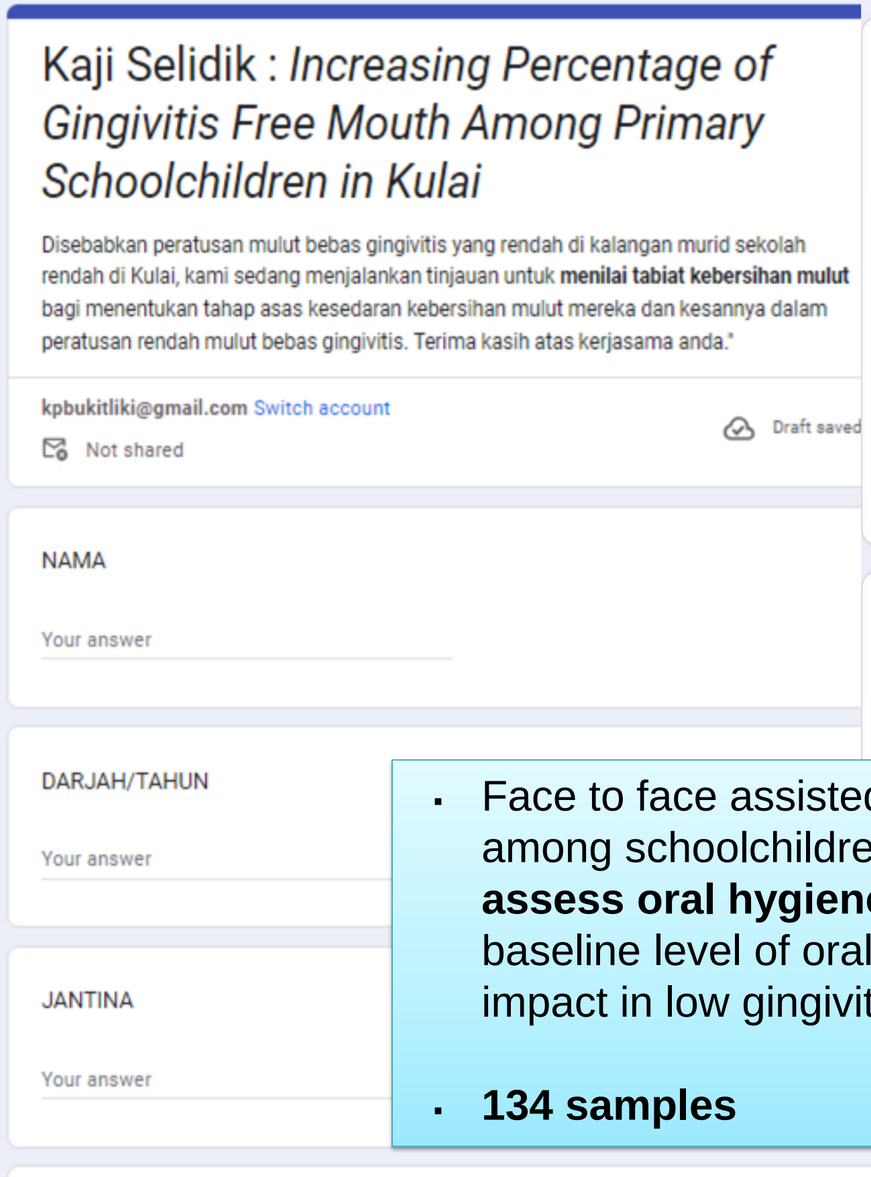
KP KULAI

Total number of samples = 32

(8 dental therapist, 24 dental officers)

Samples of questionnaire to operators in Klinik Pergigian Kulai Besar and Klinik Pergigian Kulai to **identify the contributing factors.**

DATA COLLECTION FOR CONTRIBUTING FACTORS



Kaji Selidik : *Increasing Percentage of Gingivitis Free Mouth Among Primary Schoolchildren in Kulai*

Disebabkan peratusan mulut bebas gingivitis yang rendah di kalangan murid sekolah rendah di Kulai, kami sedang menjalankan tinjauan untuk **menilai tabiat kebersihan mulut** bagi menentukan tahap asas kesedaran kebersihan mulut mereka dan kesannya dalam peratusan rendah mulut bebas gingivitis. Terima kasih atas kerjasama anda."

kpbukitliki@gmail.com Switch account

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NAMA

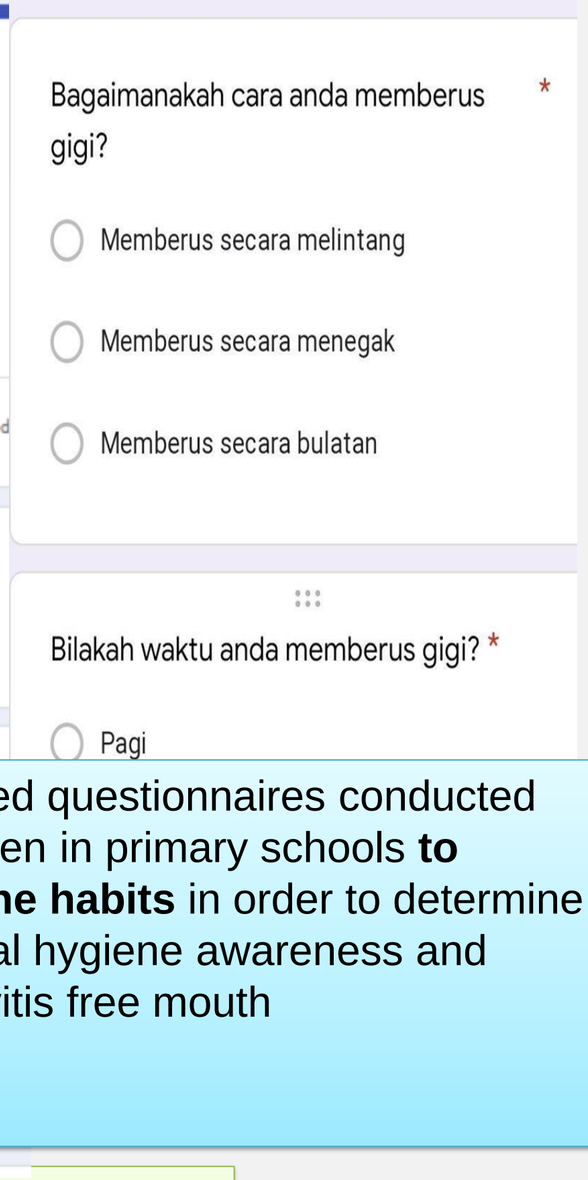
Your answer

DARJAH/TAHUN

Your answer

JANTINA

Your answer



Bagaimanakah cara anda memberus gigi? *

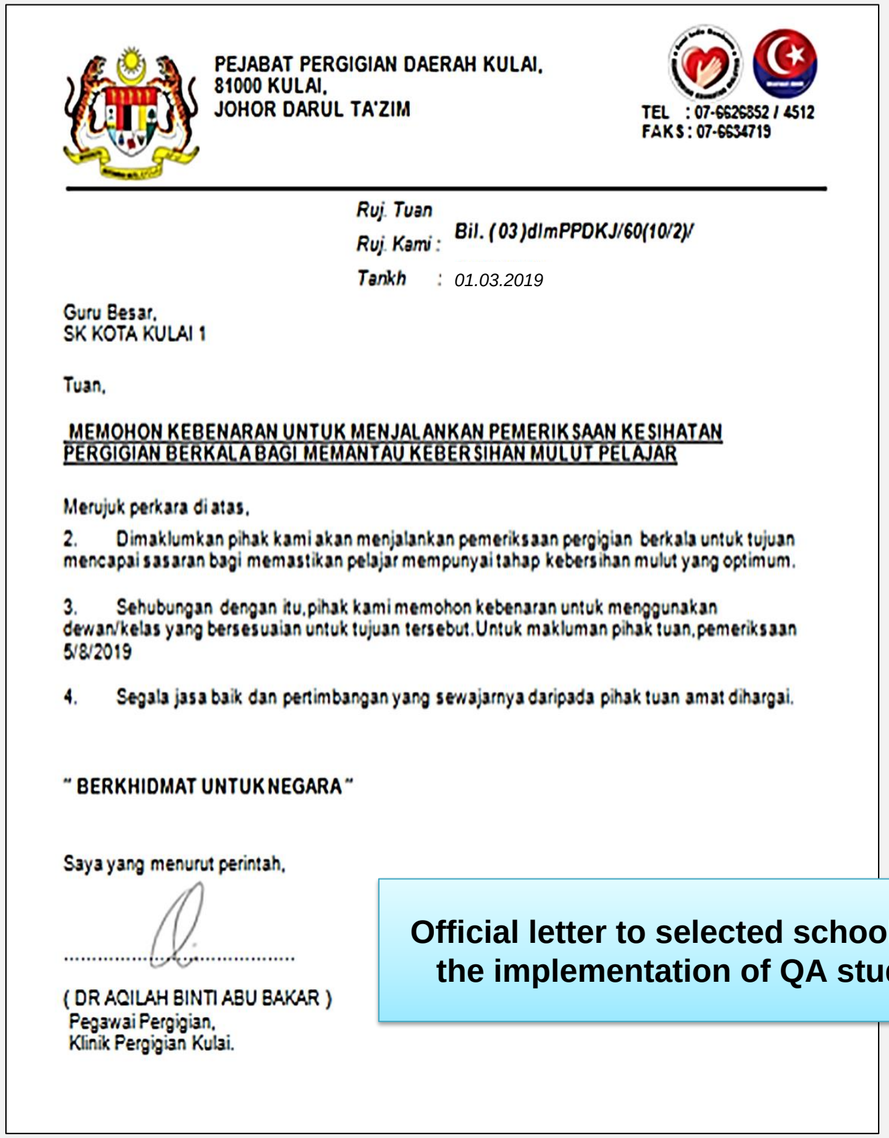
- Memberus secara melintang
- Memberus secara menegak
- Memberus secara bulatan

Bilakah waktu anda memberus gigi? *

- Pagi

- Face to face assisted questionnaires conducted among schoolchildren in primary schools **to assess oral hygiene habits** in order to determine baseline level of oral hygiene awareness and impact in low gingivitis free mouth
- **134 samples**

Questionnaire Modified Based On Study Phillip et.al 2017, Translated Into Malay Language and obtained Expert Opinion Analysis (EOA) from DPH Specialist



PEJABAT PERGIGIAN DAERAH KULAI,
81000 KULAI,
JOHOR DARUL TA'ZIM

TEL : 07-6626852 / 4512
FAKS : 07-6634719

Ruj. Tuan
Ruj. Kami : *Bil. (03)dlmPPDKJ/60(10/2)/*
Tarikh : *01.03.2019*

Guru Besar,
SK KOTA KULAI 1

Tuan,

MEMOHON KEBENARAN UNTUK MENJALANKAN PEMERIKSAAN KESIHATAN PERGIGIAN BERKALA BAGI MEMANTAU KEBERSIHAN MULUT PELAJAR

Merujuk perkara di atas,

2. Dimaklumkan pihak kami akan menjalankan pemeriksaan pergigian berkala untuk tujuan mencapai sasaran bagi memastikan pelajar mempunyai tahap kebersihan mulut yang optimum.

3. Sehubungan dengan itu,pihak kami memohon kebenaran untuk menggunakan dewan/kelas yang bersesuaian untuk tujuan tersebut.Untuk makluman pihak tuan,pemeriksaan 5/8/2019

4. Segala jasa baik dan pertimbangan yang sewajarnya daripada pihak tuan amat dihargai.

" BERKHIDMAT UNTUK NEGARA "

Saya yang menurut perintah,

.....

(DR AQILAH BINTI ABU BAKAR)
Pegawai Pergigian,
Klinik Pergigian Kulai.

Official letter to selected school for the implementation of QA study

Clinical Monitoring Audit form

Lampiran B

BORANG PEMANTAUAN KLINIKAL (PENYAMPAIAN DAN KESEMPURNAAN RAWATAN)

Nama Perawat :

Jawatan :

Nama Klinik : KP KULAI BESAR

Nama Auditor : DR DIYANA

KATEGORI	NO.	VARIABEL Tandakan 0 : Tidak Tepat 1: Tepat	PESAKIT		
			PERTAMA Tarikh : Mula : Tamat :	KEDUA Tarikh : Mula : Tamat :	KETIGA Tarikh : Mula : Tamat :
Pencartaan & Pelan rawatan	1	Pencartaan MMI (Percentage Agreement ≥ 75%)			
	2	Pencartaan GIS (Percentage Agreement ≥ 75%)			
	3	Ketepatan pelan rawatan			
	4	Pemilihan kes *Space Maintenance*			
Rawatan Pencegahan Klinikal	5	a. Teknik aplikasi (eg : Kawalan lembapan, teknik aplikasi)			
	6	b. Kesempurnaan kes PRR / FS / FV			
Rawatan Tampalan	7	a. Penyediaan kaviti			
	8	b. Pemilihan bahan pergigian			
	9	c. Perapian : i. Titik sentuh			
	10	ii. Oklusi			
	11	iii. Margin			

Clinical Monitoring Report

LAPORAN PEMANTAUAN KLINIKAL
Tahun : _____2022_____
(Pemantauan Peringkat Daerah / Negeri)

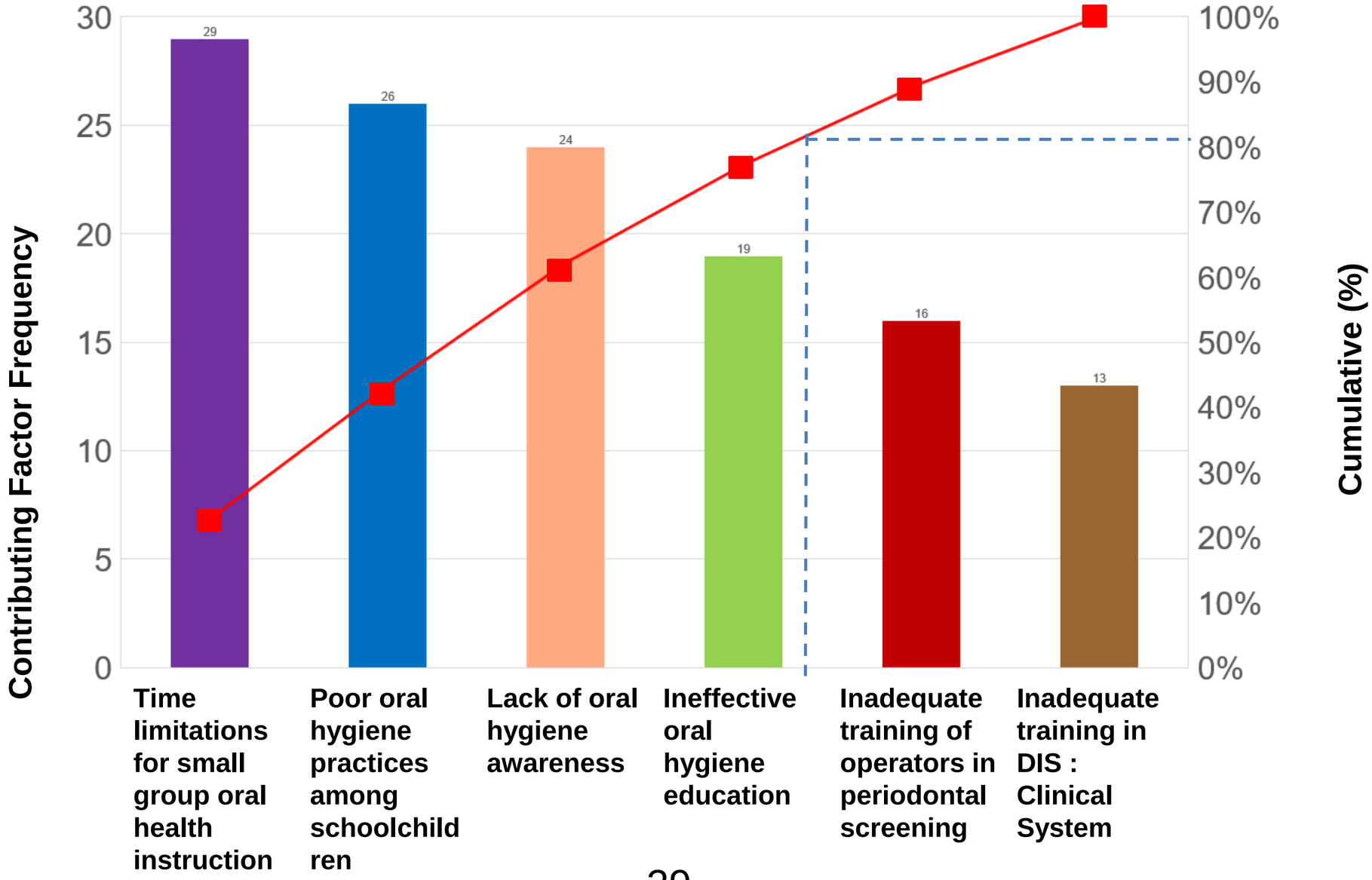
Klinik: KLINIK PERGIGIAN KULAI BESAR
Daera KULAI
Negeri JOHOR

Bil.	Nama Perawat	Kategori Perawat																								
		Juruterapi Pergigian									Pegawai Pergigian Lantikan Tetap									Juruterapi Pergigian Lantikan Bahare						
		Skor Bahagian A			Skor Bahagian B			Tindakan Susulan			Skor Bahagian A			Skor Bahagian B			Tindakan Susulan			Skor Bahagian A			Skor Bahagian B			Tindakan Susulan		
		<80%	84-94%	≥95%	<70%	70-84%	≥85%	C	B	A	<80%	84-94%	≥95%	<70%	70-84%	≥85%	C	B	A	<80%	84-94%	≥95%	<70%	70-84%	≥85%	C	B	A
	JP NUR ADIRA			100																								
	JP MAZLINDA			100																								
	JP LIM CHEANG FANG			100																								
	JP KOGILAVANEE			100																								
	JP ALWANI			100																								
	JP ZEATI																											
		0	0	500	0	0	0	0	0	0																		
		JUMLAH (D)									JUMLAH (D)									JUMLAH (D)								

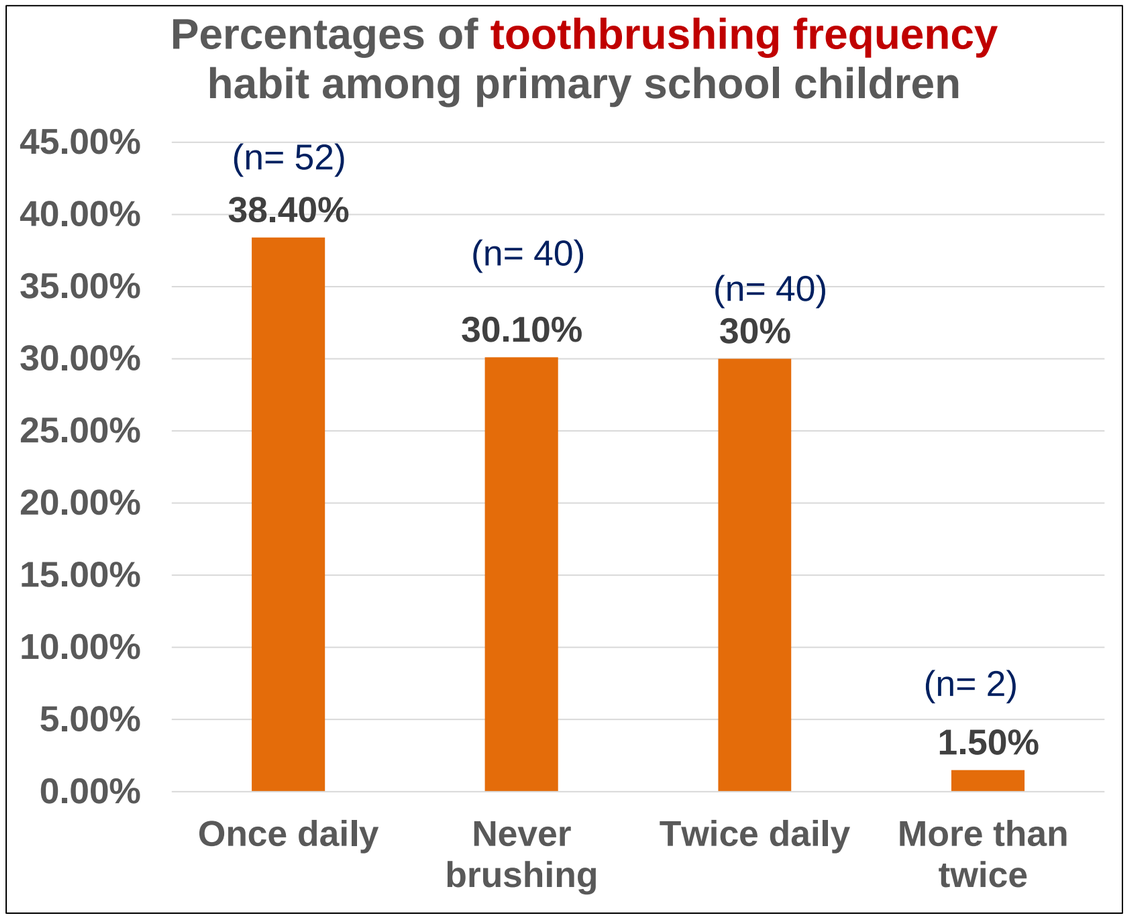
ANALYSIS & INTERPRETATION (VERIFICATION STUDY)

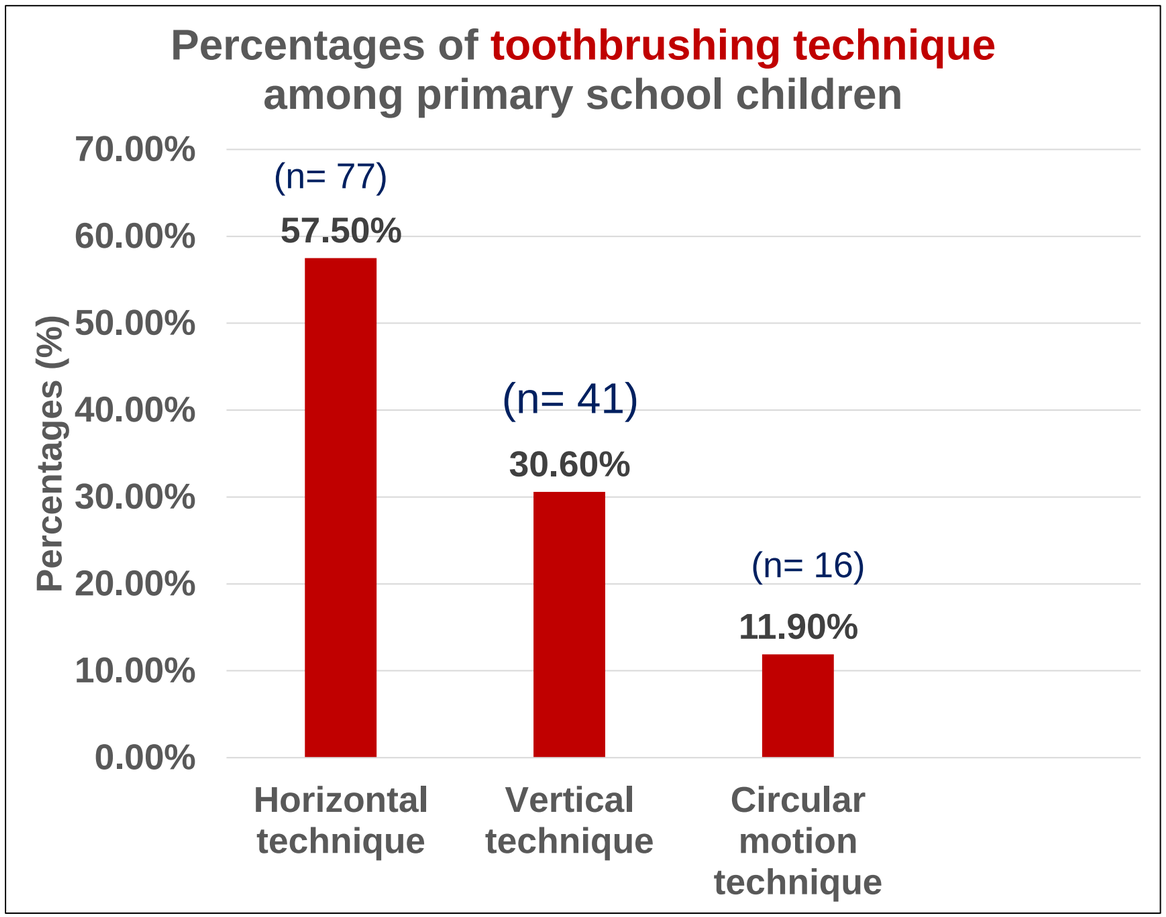
PARETO CHART

Contributing factors low percentage gingivitis free-mouth among primary school children in Kulai



Pre remedial study : Percentage toothbrushing frequency habit and toothbrushing technique among primary schoolchildren





Key Findings (n = 134):

- **30.1%** of children (n = 40) **never brush their teeth**, putting them at high risk for dental issues eg dental caries & gingivitis
- **57.5%** of children (n = 77) use the **horizontal brushing technique**:
  - ➢ This technique is **less effective** for **plaque removal**.
  - ➢ It can contribute to **gingival recession** if done too vigorously, making it **suboptimal** for good oral health.

STRATEGY FOR CHANGE

REMEDIAL MEASURES:

Cycle 1

Implementation and evaluation of remedial measures **(Apr-Dec 2022)**

STRATEGY OF CHANGE

1

Time Limitations for small group oral health instruction

2

Poor oral hygiene practices among schoolchildren

3

Lack of oral hygiene awareness

4

Ineffective oral hygiene education

REMEDIAL MEASURES: Cycle 1

STRATEGIES	ACTIVITIES
1 Time Limitations for small group oral health instruction	Dental Dedicated Team
	Interactive Oral Health Education Videos
2 Poor oral hygiene practices among primary schoolchildren	Dental Health Education Corner
3 Lack of oral hygiene awareness	Periodontal Screening Course to all operators
	Clinical Monitoring
4 Ineffective oral hygiene education	Collaboration program with Pejabat Pendidikan Daerah Kulai & School

Text 2

Text 1

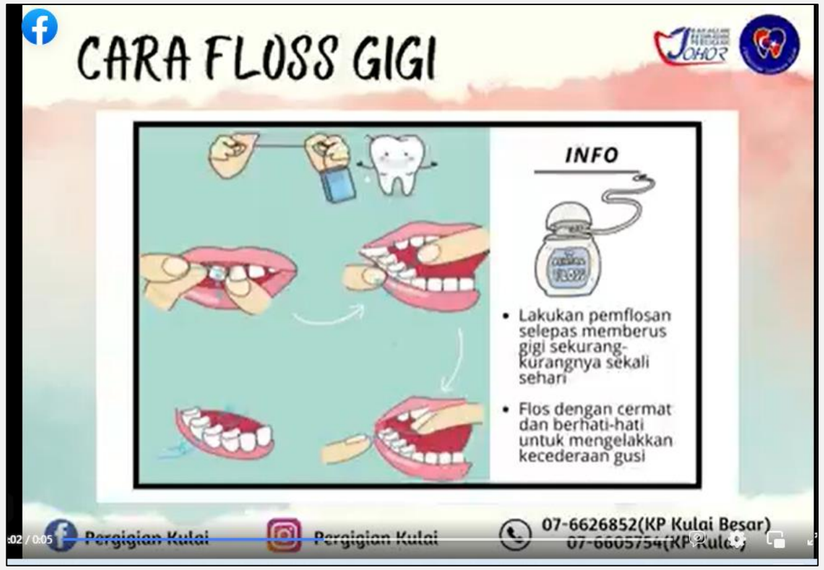
Dental Dedicated Team

- Establishment of **Dental Dedicated Team (DDT) Kulai** was in **2022** involving **dental officer and dental therapist** to conduct oral hygiene instruction in small groups or one to one
- **individualized care plans** for students struggling with oral hygiene, such as providing **additional brushing sessions** or one-on-one brushing demonstrations

Interactive Oral Health Education Videos

- Provide engaging oral health education videos during the school's "Oral Health Talk" to capture students' attention.

- Oral health Talk will be provided by dental team during school dental service period



Dental Health Education Corner in Schools

Establish dental health education corners in **10 out of the 34 schools**, in collaboration with school teachers and students

Periodontal Screening Course

Workshop on enhancing Gingival index score screening among **dental therapist** was conducted

Workshop title “Enhancing Gingival Index Score training Screening” to dental therapist in Kulai district (10th July 2022)

Clinical Monitoring

Clinical monitoring for dental therapists and new dental officers conducted as part of a calibration for Gingival Index Score and Basic Periodontal Examination score as process for accurate dental charting, examination and diagnosis.

Collaboration program with Pejabat Pendidikan Daerah Kulai & School

Dental Health Seminar For Primary School Teachers In Kulai District done on 17th May 2022

Objectives:

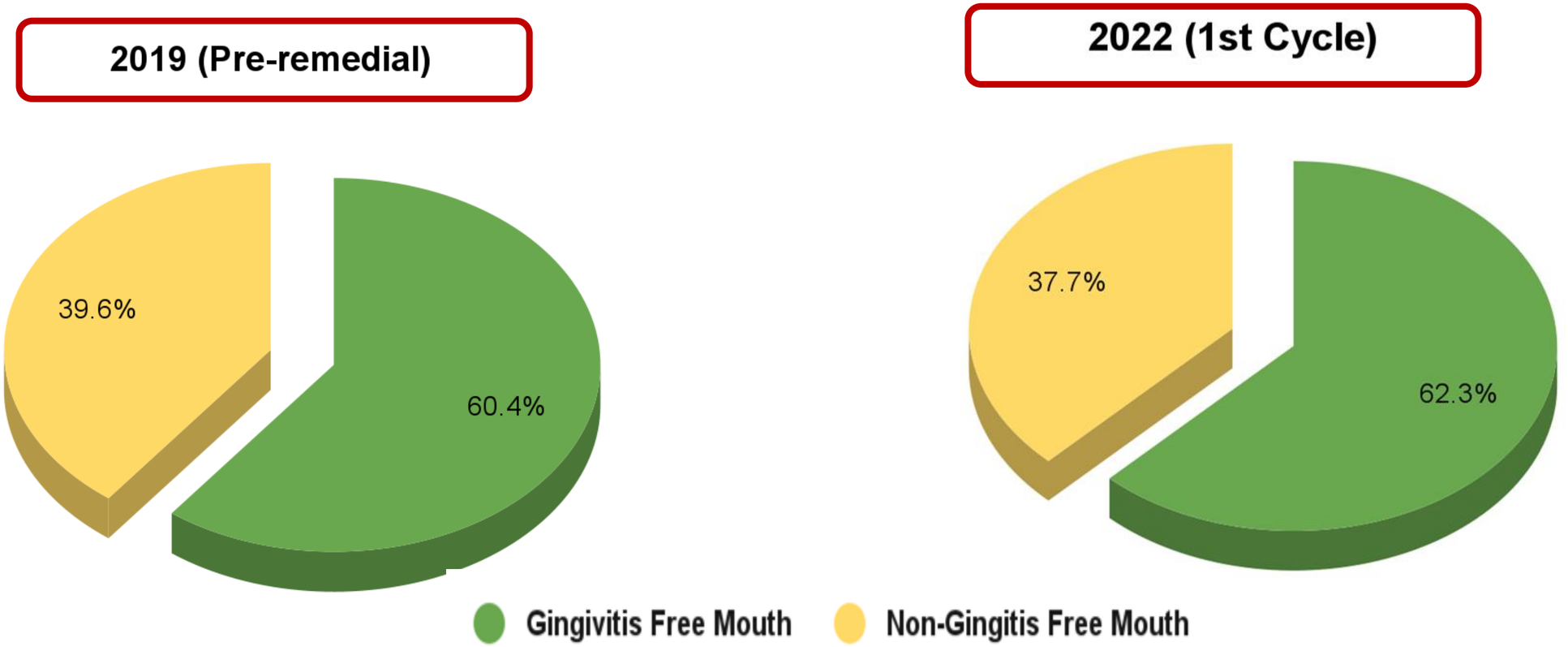
1. To give **teachers awareness** about their **role in promoting good oral health among school students.**
2. Getting the involvement and cooperation of **teachers** in a**pplying good habits in oral health care among school students.**
3. **Role of school teachers** to carry out **oral health promotion activities** as part of their **teaching curriculum**

EFFECT OF CHANGES (CYCLE 1)

MODEL OF GOOD CARE

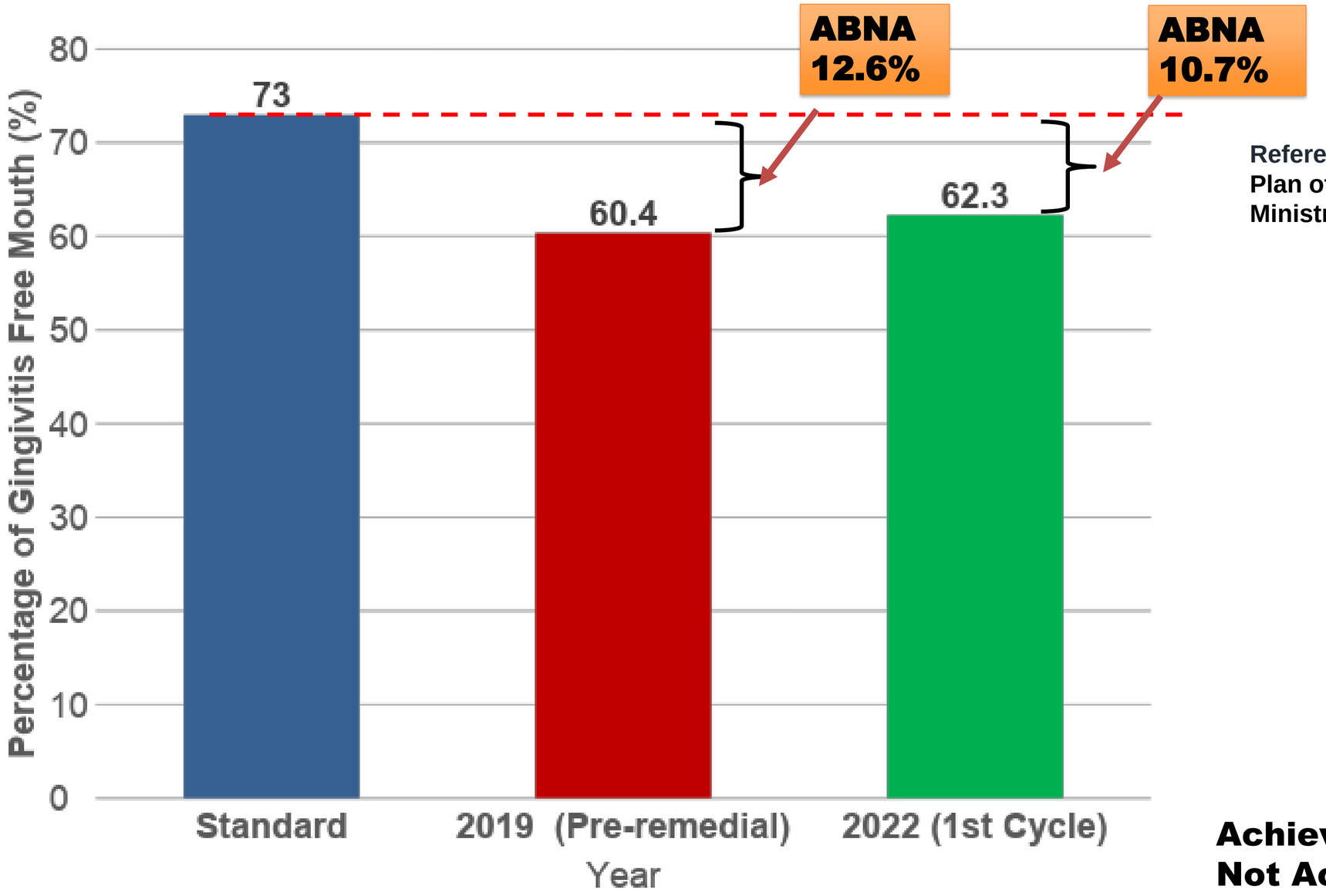
No	Critical Step	Criteria	Standard	Pre-remedial	Post-remedial cycle 1
1.	Conduct oral examination and deliver treatment required	Examination and diagnosis with accuracy	100%	60%	80%
		Delivery of dental treatment required based on treatment plan	100%	70%	90%
2.	Conduct oral health education activities	Oral Health Education activities in small group	100%	50%	80%
		Personalised oral health education for prioritised student with poor oral hygiene	100%	0%	70%
3.	Record returns in DIS : Clinical System and submitted	Record returns in DIS : Clinical System without error	100%	70%	90%

Percentage of Gingivitis Free Mouth Among Primary Schoolchildren in Kulai in Cycle 1



Year	2019 (Pre-remedial)	2022 (1st Cycle)
Total number of primary school	34	34
Total number student gingivitis-free mouth	13446	14056
Total number of new case	22266	22561
% Gingivitis-free mouth	**60.4%**	**62.3%**

ABNA of Percentage Of Gingivitis Free Mouth Among Primary Schoolchildren



Standard: ≥73%

Reference:
Plan of Action Oral Health Program
Ministry of Health Malaysia.

Achievable Benefit
Not Achieved (ABNA)

STRATEGY FOR CHANGE

REMEDIAL MEASURES:

Cycle 2

Implementation and evaluation of remedial measures **(Jan-Dec 2023)**

REMEDIAL MEASURES: Cycle 2

STRATEGIES	ACTIVITIES
1 Time Limitations for small group oral health instruction	Dental Dedicated Team
	Interactive Oral Health Education Videos
2 Poor oral hygiene practices among primary schoolchildren	Dental Health Education Corner
3 Lack of oral hygiene awareness	Periodontal Screening Course to all operators
	Clinical Monitoring
	DIS : Clinical system workshop
4 Ineffective oral hygiene education	Collaboration program with Pejabat Pendidikan Daerah Kulai & Schools
	Collaboration program with Dental Private Practitioner

IGG-J On the Go Kit

IGG Junior

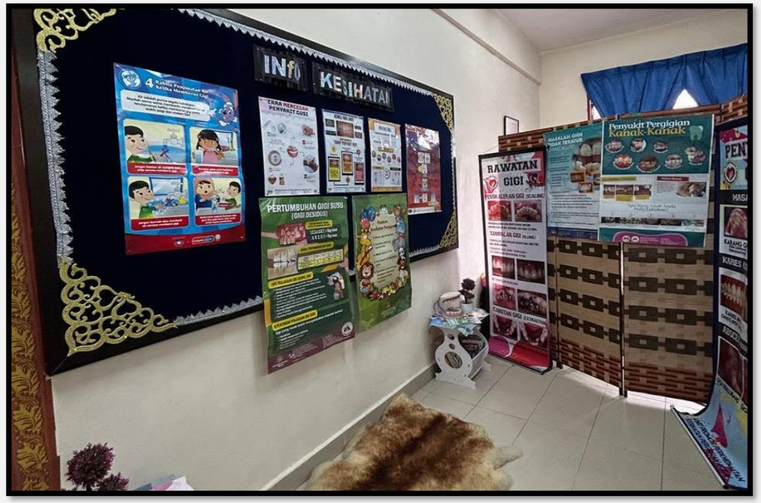
'5 minute ToothBrush break' campaign

Strengthening Dental Dedicated Team

Expand the members of Dental Dedicated Team and increased coverage to more schools. They also serve as facilitators for Ikon Gigi Junior.

Increase coverage Dental Health Education Corner in more schools in Kulai

Establish more dental health education corners in **25 out of the 34 schools**, increase in percentage of coverage for dental health education corner in school around Kulai district



DIS : Clinical system workshop

Workshop on DIS : Clinical system was done on 29th June 2023 to all clinical staffs to increase competency in data entry

Innovation

Ikon Gigi Junior (IGG-J)

IGG-J was formed based on the concept of peer-to-peer influence (transformation agent) aiming to increase awareness oral health among primary schoolchildren

Ikon Gigi Junior (IGG-J)

Established in 2023, this initiative involved top-performing students from each school to promote peer-led learning and engagement with IGG-J, participating in 10 out of 34 schools.

Innovation

“IGG-J On the Go Kit”

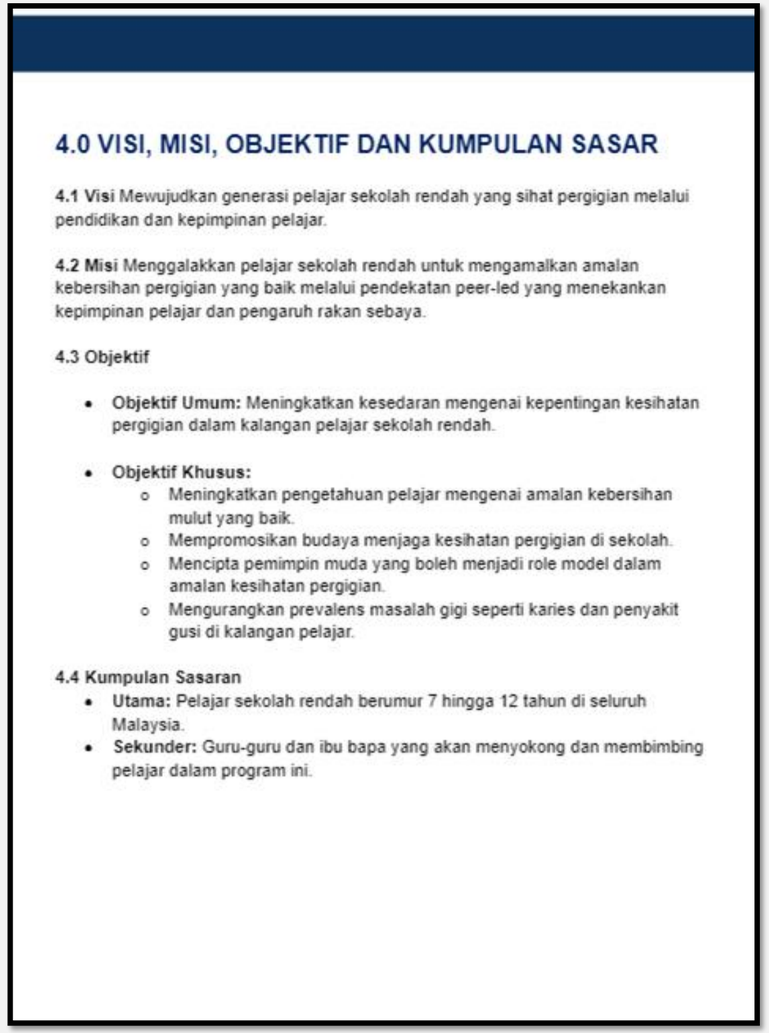
IGG-J On The Go

Interactive Flip Chart

IGG-J On The Go Kit (Interactive Flip Chart, Dental Model & toothbrush set, mouthwash, dental floss, face mirror and oral hygiene care set) give to IGG-J with training of trainer session

New Guideline

"*Garispanduan* IGG-J"



4.0 VISI, MISI, OBJEKTIF DAN KUMPULAN SASAR

4.1 Visi Mewujudkan generasi pelajar sekolah rendah yang sihat pergigian melalui pendidikan dan kepimpinan pelajar.

4.2 Misi Menggalakkan pelajar sekolah rendah untuk mengamalkan amalan kebersihan pergigian yang baik melalui pendekatan peer-led yang menekankan kepimpinan pelajar dan pengaruh rakan sebaya.

4.3 Objektif

- **Objektif Umum:** Meningkatkan kesedaran mengenai kepentingan kesihatan pergigian dalam kalangan pelajar sekolah rendah.

- **Objektif Khusus:**
  - Meningkatkan pengetahuan pelajar mengenai amalan kebersihan mulut yang baik.
  - Mempromosikan budaya menjaga kesihatan pergigian di sekolah.
  - Mencipta pemimpin muda yang boleh menjadi role model dalam amalan kesihatan pergigian.
  - Mengurangkan prevalens masalah gigi seperti karies dan penyakit gusi di kalangan pelajar.

4.4 Kumpulan Sasaran

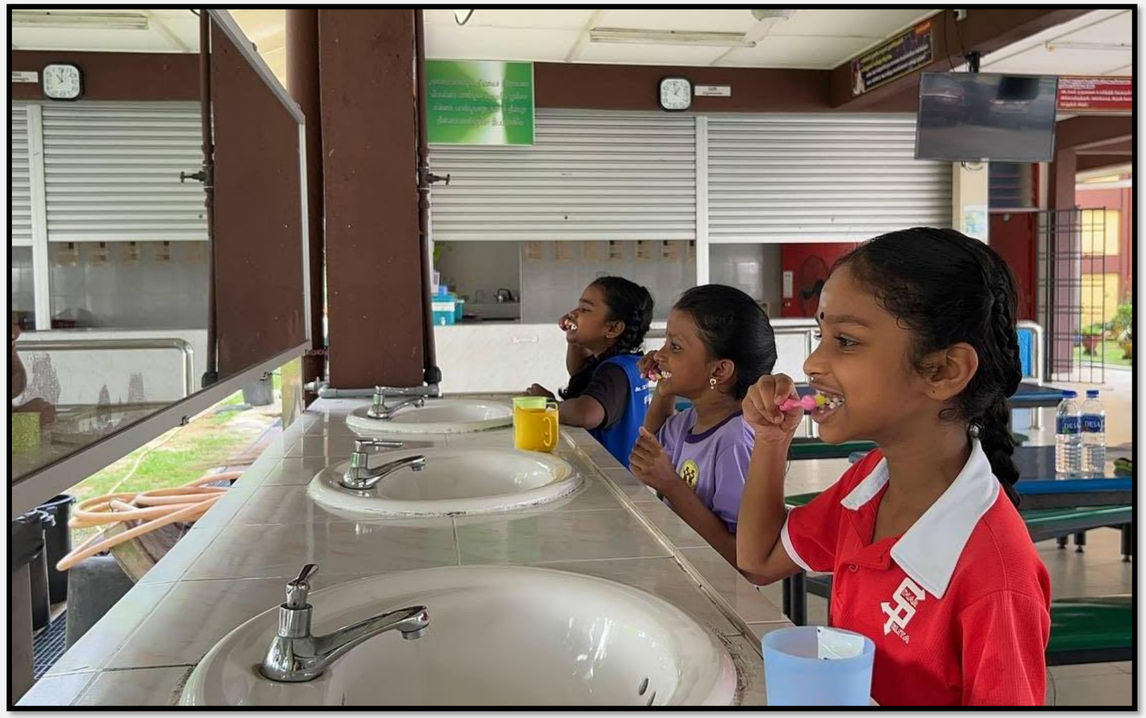
- **Utama:** Pelajar sekolah rendah berumur 7 hingga 12 tahun di seluruh Malaysia.
- **Sekunder:** Guru-guru dan ibu bapa yang akan menyokong dan membimbing pelajar dalam program ini.

The guideline was developed in 2023 by Perkhidmatan Pergigian Kulai as a Standard Operating Guideline, designed for replication in other districts.

Collaboration initiatives

Provide Toothbrushing After Meal Habit Campaign in schools

The idea for the ‘Healthy Smile: 5-Minute Brushing Habit’ campaign was proposed to schools, with the schedule tailored to each school's availability and existing timetable.



Collaboration initiatives

Collaboration with private dental practitioner

Collaboration with private dental practitioner Klinik Pergigian Aura, Kulai to deliver oral health education to primary schoolchildren during the Oral Health Promotion Week

Collaboration initiatives

Mesyuarat Program Bersepadu Sekolah Sihat (PBSS)

Annual engagements program with Pejabat Pendidikan Daerah Kulai, Pejabat Kesihatan daerah Kulai and schools.

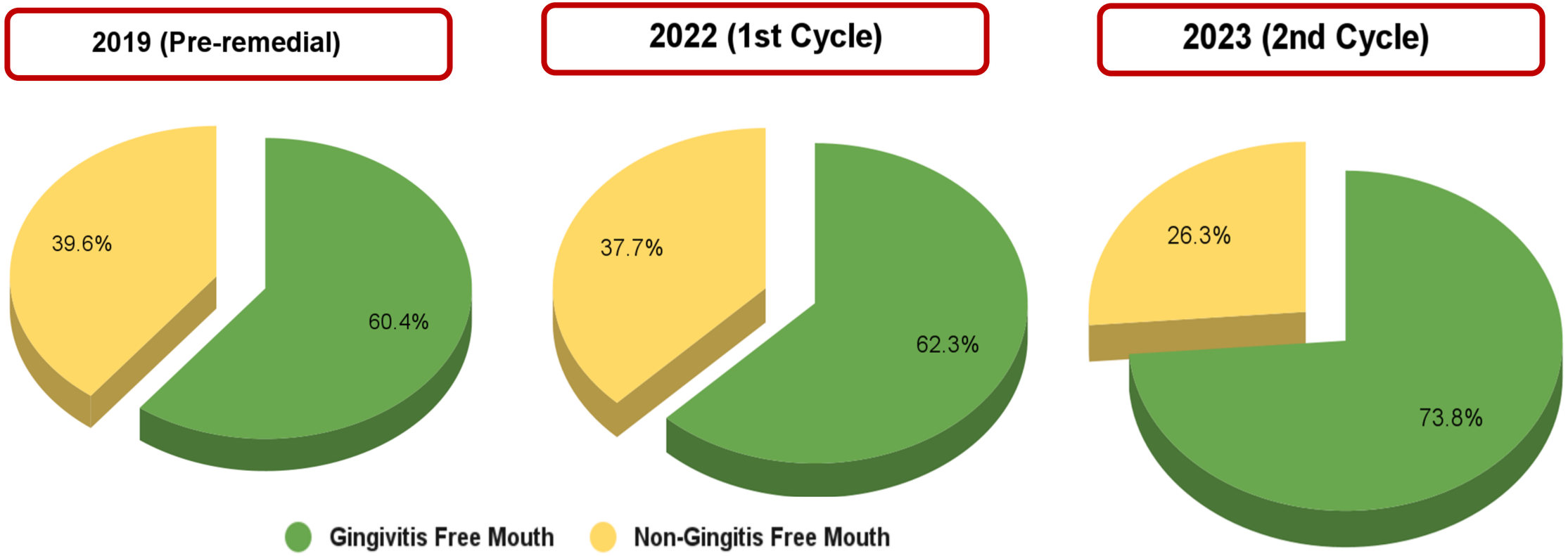
The QA study was presented on 1st April 2024

EFFECT OF CHANGES (CYCLE 2)

MODEL OF GOOD CARE

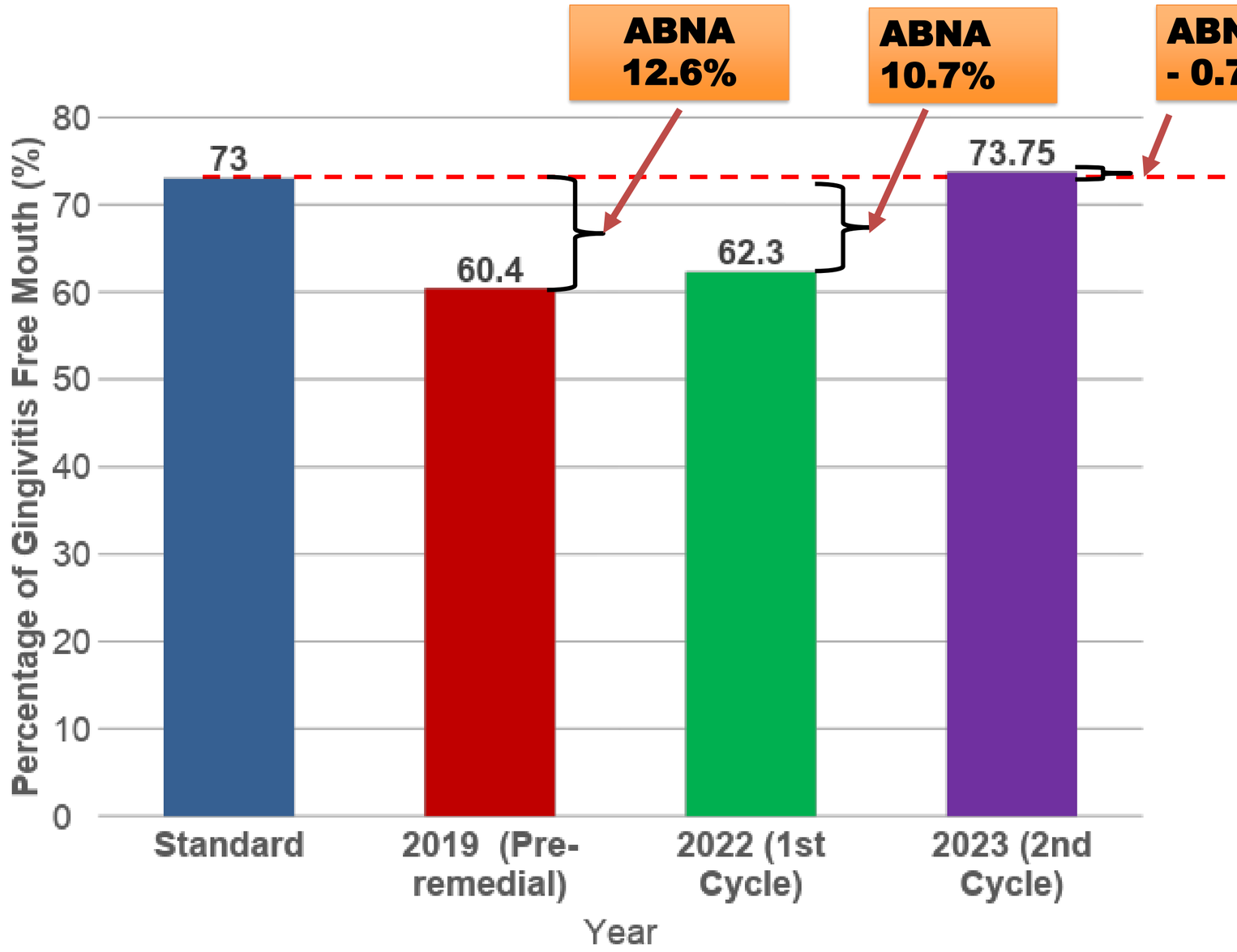
No	Critical Step	Criteria	Standard	Pre-remedial	Post-remedial cycle 1	Post-remedial cycle 2
1.	Conduct oral examination and deliver treatment required	Examination and diagnosis with accuracy	100%	**60%**	**80%** ↑	**100%** ↑
		Delivery of dental treatment required based on treatment plan	100%	**70%**	**90%** ↑	**100%** ↑
2.	Conduct oral health education activities	Oral Health Education activities in small group	100%	**50%**	**80%** ↑	**100%** ↑
		Personalised oral health education for prioritised student with poor oral hygiene	100%	**0%**	**70%** ↑	**100%** ↑
3.	Record returns in DIS : Clinical System and submitted	Record returns in DIS : Clinical System without error	100%	**70%**	**90%** ↑	**100%** ↑

Percentage of Gingivitis Free Mouth Among Primary Schoolchildren in Kulai in Cycle 1 and Cycle 2



Year	2019 (Pre-remedial)	2022 (1st Cycle)	2023 (2nd Cycle)
Total number of primary school	34	34	34
Total number student gingivitis-free mouth	13446	14056	16787
Total number of new case	22266	22561	22761
% Gingivitis-free mouth	**60.4%**	**62.3%**	**73.6%**

ABNA of Percentage Of Gingivitis Free Mouth Among Primary Schoolchildren



Standard: ≥73%

Reference:
Plan of Action Oral Health Program Ministry of Health Malaysia.

Achievable Benefit Not Achieved (ABNA)

IMPACT OF THE REMEDIAL MEASURES

COST REDUCTION IMPACT

Year	2019 (Pre-remedial)	2022 (1st Cycle)	2023 (2nd Cycle)
Total number student gingivitis-free mouth	13446	14056	16787
Total number of new case	22266	22561	22761
% Gingivitis-free mouth	**60.4%**	**62.3%**	**73.6%**

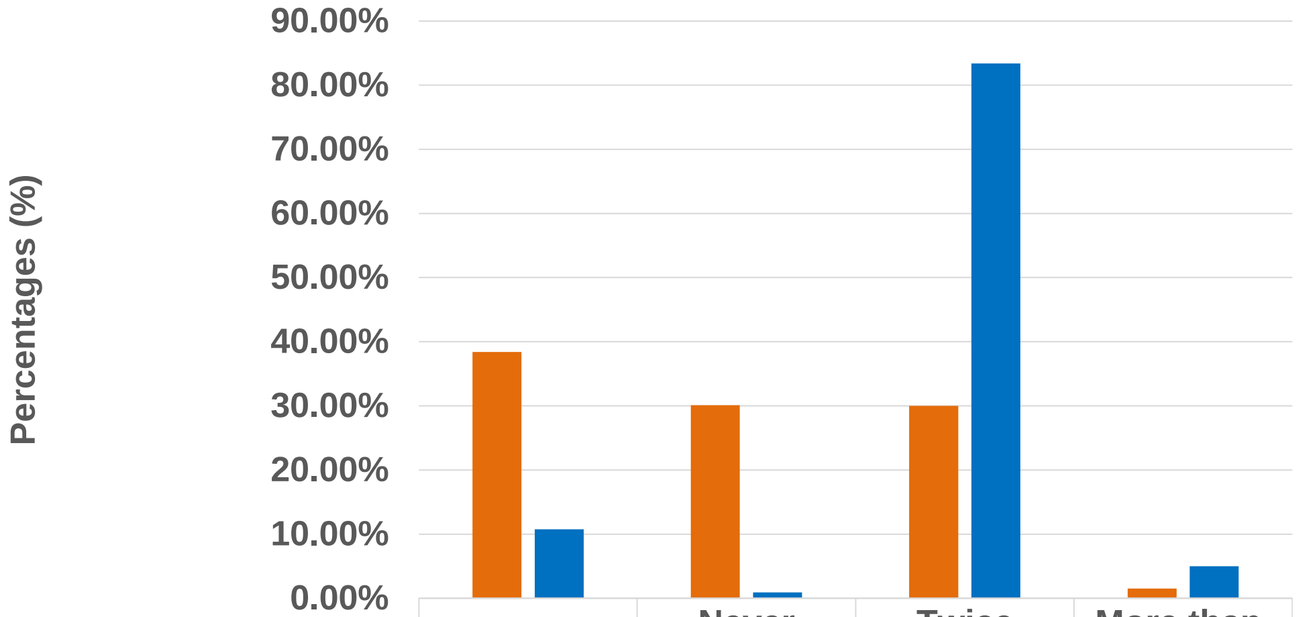
Detail	Value (RM)
Preventive Care Cost (Scaling & polishing)	RM 150 per student
Advanced Periodontal Treatment Cost	RM 8,400 per student

Reference: Malaysian Dental Association, **Private Dental Fee Schedule**.

Year	Preventive Care (Students x Cost)	Advanced Treatment (Students x Cost)	Total Cost (RM)	Cost Reduction (Compared to 2019)
2019 (Pre-remedial)	13,446 x RM 150 = RM 2,016,900	8,820 x RM 8,400 = RM 74,088,000	**RM 76,104,900**	-
2022 (1st Cycle)	14,056 x RM 150 = RM 2,108,400	8,505 x RM 8,400 = RM 71,442,000	**RM 73,550,400**	**RM 2,554,500**
2023 (2nd Cycle)	16,787 x RM 150 = RM 2,518,050	5,974 x RM 8,400 = RM 50,181,600	**RM 52,699,650**	**RM 23,405,250**

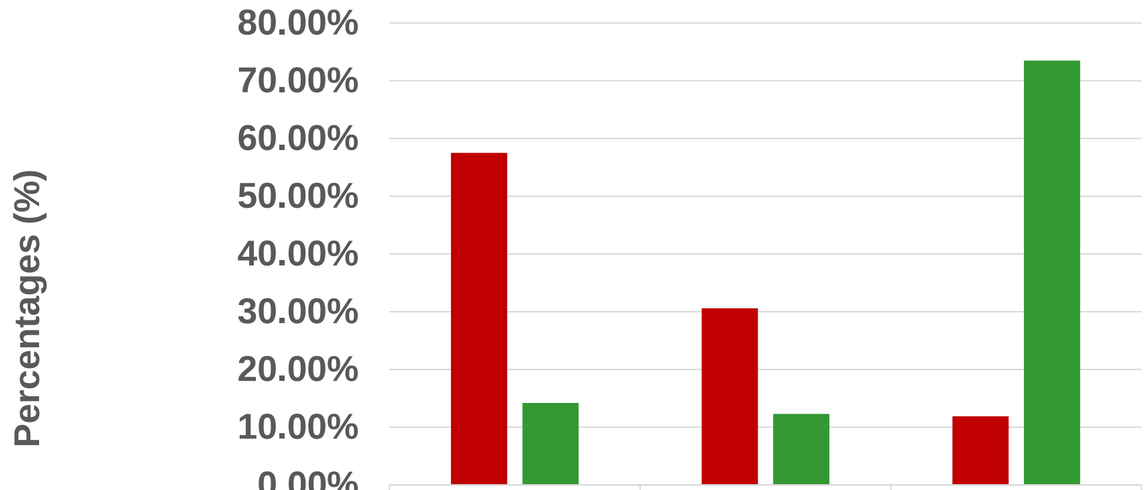
BEHAVIOUR TRANSFORMATION IMPACT

Percentages of toothbrushing frequency habit among primary schoolchildren pre-remedial (2019) vs post-remedial intervention (2023)



	Once daily	Never brushing	Twice daily	More than twice
Pre-remedial : 2019 (n=134)	38.40%	30.10%	30%	1.50%
Post Remedial: 2023 (n= 140)	10.75%	0.90%	83.40% ★	5%

Percentages of toothbrushing technique among primary schoolchildren pre-remedial (2019) vs post-remedial intervention (2023)



	Horizontal technique	Vertical technique	Circular motion technique
Pre-remedial :2019 (n=134)	57.50%	30.60%	11.90%
Post-remedial: 2023 (n=140)	14.20%	12.30%	73.50% ★

30% (2019) → 83.4% (2023) : brush twice daily
11.90% (2019) → 73.5% (2023) : brush in circular motion

The interventions led to a **drastic improvement** in both **brushing frequency** and the adoption of the **circular brushing technique**, highlighting the **effectiveness of the educational program.**

LESSONS LEARNT

Category	Details
Strengths	• **Improved oral health:** Gingivitis-free increased from **60.4%** (2019) to **73.6%** (2023). • **Systemic health benefits**: Reduced risk of cardiovascular and respiratory diseases. • **Behavioral change**: **83.4%** now brush twice daily, **73.5%** use circular brushing technique. • **Effective education: Improved hygiene practices through education**.
Limitations	• Project deferred due to Covid-19 pandemic on 2020 and 2021 cause limitations to carry out further intervention as all primary and secondary schools prohibited entry. • Short-term focus: **Long-term sustainability not evaluated.** • Limited scope: Focus on oral health, **minimal exploration of systemic impacts**.
Areas for Improvement	• **Long-term tracking**: Monitor habits and health outcomes over time. • **Expand education**: Involve **parents** and **teachers** to reinforce practices. • **Broader assessments**: Include **absenteeism, academic performance**. • **Scale program: Replicate** to other district or regions.

THE NEXT STEPS

Next Steps	Details
Long-Term Tracking	Monitor children's oral health over a **longer period** to ensure sustained behavior change and health improvements.
Elevate the standard	To elevate the standard to **75%** for **District Kulai**
Expand Educational Outreach	To organize **workshops** for **parents and teachers** to educate them on monitoring and encouraging children's brushing habits.
Broader Health Assessment	Conduct assessments on the impact of oral health on **absenteeism**, **academic performance**, and **systemic health**. Track **school attendance** and **compare performance metrics** before and after the intervention; evaluate connections between improved oral health and academic outcomes.
Replicate the program	To replicate the program in **other regions** and **different demographic groups** (e.g., secondary school students) to test adaptability.
Community Engagement	Foster partnerships **with local healthcare providers** and **community leaders** to ensure **widespread adoption of oral hygiene programs** eg Oral Health Promotion Week
Secure Funding for Expansion	To secure funding for scaling the project to new areas **and improving resources for long-term sustainability** eg invest in more educational materials and tools.

CONCLUSION

1. Pre-remedial data revealed that only **60.4% (2019)** of primary schoolchildren in Kulai were gingivitis-free**, indicating the need for intervention.**

2. The primary factors included **limited time** for oral health instruction, **poor oral hygiene practices**, **lack of awareness**, and **ineffective hygiene education**

3. Remedial measures formulated by target the identified challenges by **enhancing oral health educational resources and student awareness**, strengthening **clinical monitoring**, and fostering **collaborations** with local education and dental authorities to ensure **sustained improvements** in oral hygiene among primary schoolchildren

4. Post-remedial data showed a significant improvement, with the percentage of gingivitis-free mouths increasing from **60.4% (2019)** to **73.75% (2023)**, demonstrating **the success of the intervention strategies**

Gantt Chart

	Planning		Action

Time	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sept 2019	Oct 2019	Nov 2019
Committee Establishment								
Brainstorming Problem Statement								
Develop related QA forms								
Data Collection (Verification study)								
Data Analysis								

Gantt Chart

	Planning		Action

Time	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sept 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mac 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sept 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mac 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sept 2024
Remedial action implementation																													
Re-evaluation Data Collection (Cycle 1)																													
Data Analysis																													
Discussion and Remedial Action Cycle 2																													
Data Collection (Cycle 2) + Report Writing																													
Data Analysis Cycle 2																													
Discussion + Sharing Session																													
Data Collection Post-Remedial																													
Data Analysis and Discussion																													
Screening and review for National Convention																													
Preparation for National Convention																													

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THANK YOU

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