



Dental and Periodontal Findings in Seafarers :

A single-center retrospective study
in Bangkok, Thailand

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01

Background and Objectives



Background

- Dental problems are common among seafarers and pose significant challenges within the maritime sector, often requiring telemedical assistance.
- These issues not only impact onboard safety protocols, but also affect the seafarers' quality of life.
- Various medical conditions have been associated with periodontal disease.
- Despite extensive research on seafarers' physical and mental health, there has been less done on their dental health.





Objectives

This study aimed to evaluate the prevalence of dental and periodontal problems among Thai seafarers.

Primary Outcome

- Prevalence of dental and periodontal conditions

Secondary Outcome

- Factors associated with poor dental readiness
- Treatment needs



02

Material and Method

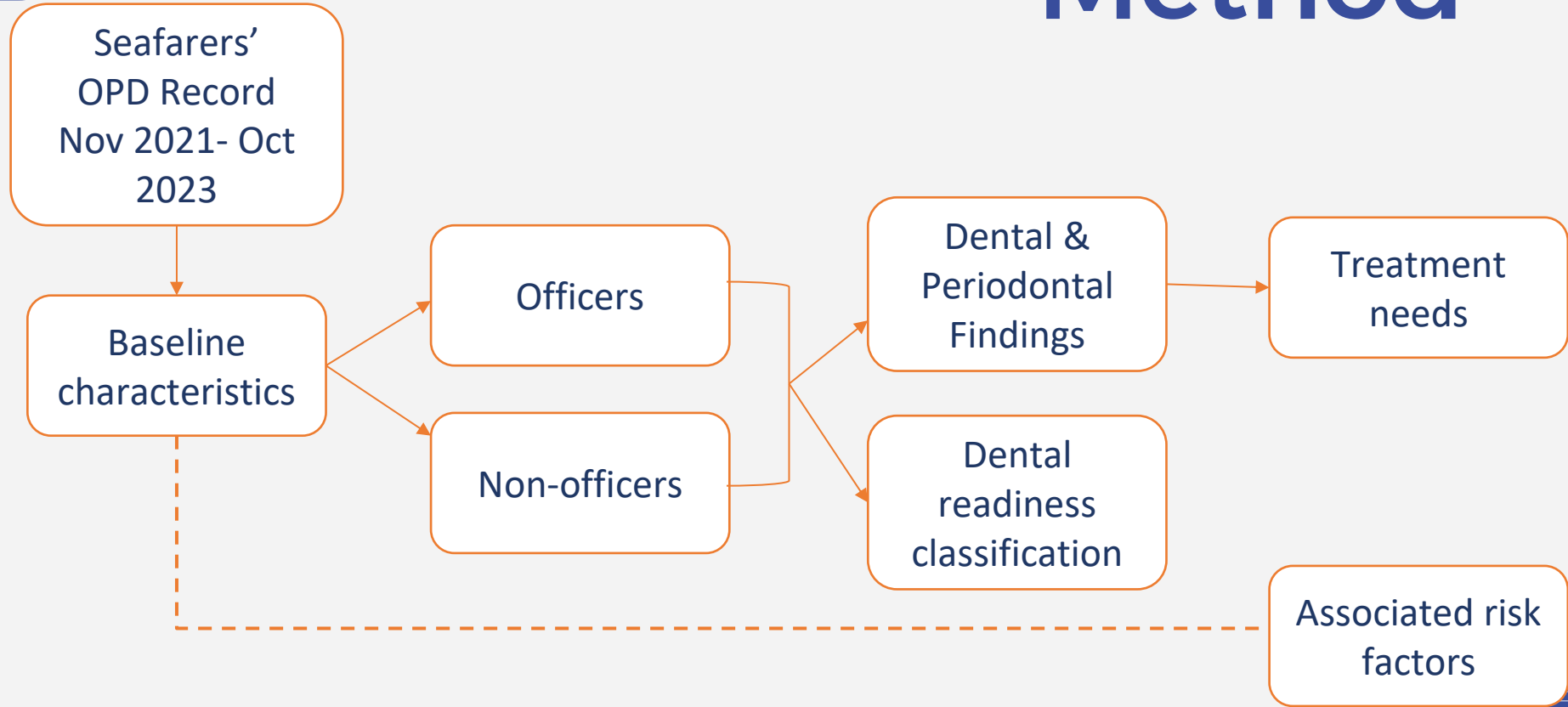


Study Design

- Retrospective study
- Location: Somdech Phra Pinklao Hospital, Bangkok, Thailand
- Period: Nov 2021 – Oct 2023
- Participants: 602 Thai seafarers



Method





Dental Readiness Classification (DRC)

Class	Description
1	Patients with no dental treatment required
2	Patients with dental conditions which are unlikely to result in dental emergencies within 12 months if not treated.
3	Patients with dental conditions which require urgent or emergent dental treatment and expected to have dental emergencies within 12 months if not treated.
4	Patients with unknown dental condition.



Statistical Analysis

- Data analyzed using **STATA/BE 18.0**
- **Means $\pm$ SD** for continuous variables
- **Frequencies and percentages** for categorical data
- **Chi-square tests** assessed associations between study variables
- **Multivariate logistic regression** (adjusted for age, rank, smoking, alcohol, BMI) explored predictors of poor dental readiness
- **Dental fitness** was dichotomized: Class 1 (fit) vs Class 2–3 (needs treatment/re-evaluation)
- **$p < 0.05$** considered statistically significant



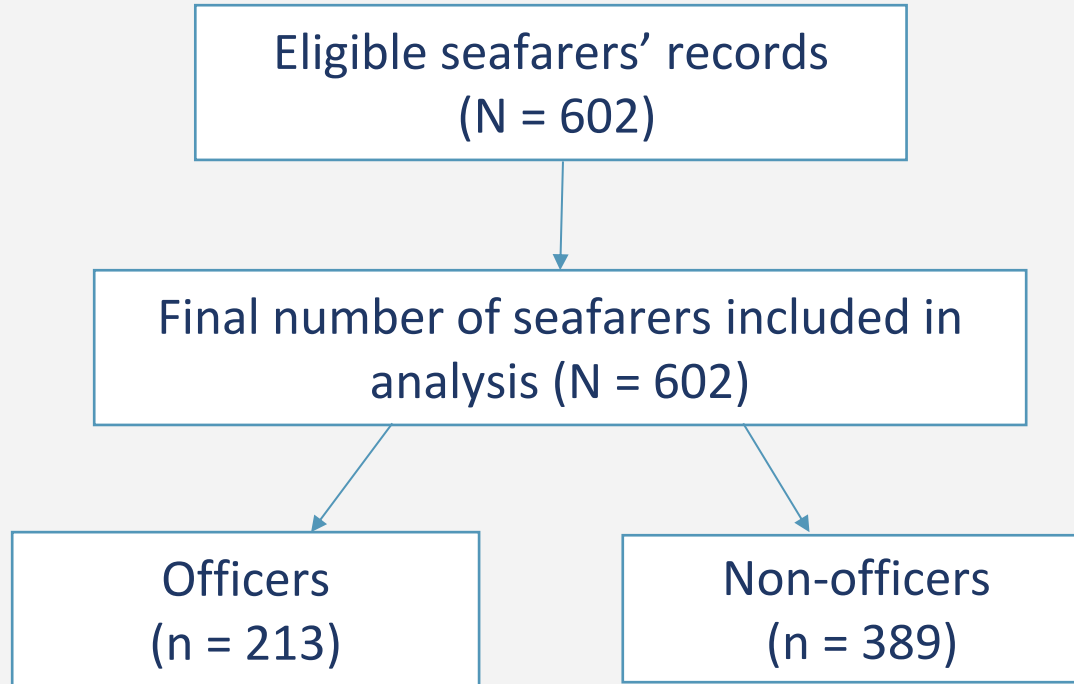


03

Results



Participants Flowchart



Baseline Characteristics

Baseline characteristics	n (%)
Sex	
• Male	600 (99.7)
• Female	2 (0.3)
Age Group	
• <30	212 (35.2)
• 30–39	207 (34.4)
• 40–50	133 (22.1)
• >50	50 (8.3)
Mean age:	35.26 ± 9.78 years
BMI Category	
• Underweight (<18.5)	25 (4.1)
• Normal (18.5–22.99)	199 (33.1)
• Overweight (23–24.99)	135 (22.4)
• Obese (≥25)	243 (40.4)

Baseline characteristics	n (%)
Smoking	
• Yes	205 (34.1)
• No	397 (65.9)
Alcohol drinking	
• Yes	375 (62.3)
• No	227 (37.7)
Department	
• Deck	179 (27.7)
• Engine	174 (28.9)
• Other	249 (41.4)
Rank	
• Officer	213 (35.4)
• Non-officer	389 (64.6)
Underlying disease	
• IFG	58 (9.6)
• DM	10 (1.7)
• HT	38 (6.3)
• DLP	155 (25.8)

43.5%

Of the participants have dental caries.

The mean (SD) of decayed, missing, and filled teeth were $1.2 (\pm 2.0)$, $2.9 (\pm 3.3)$, and $1.6 \pm (2.8)$, respectively.

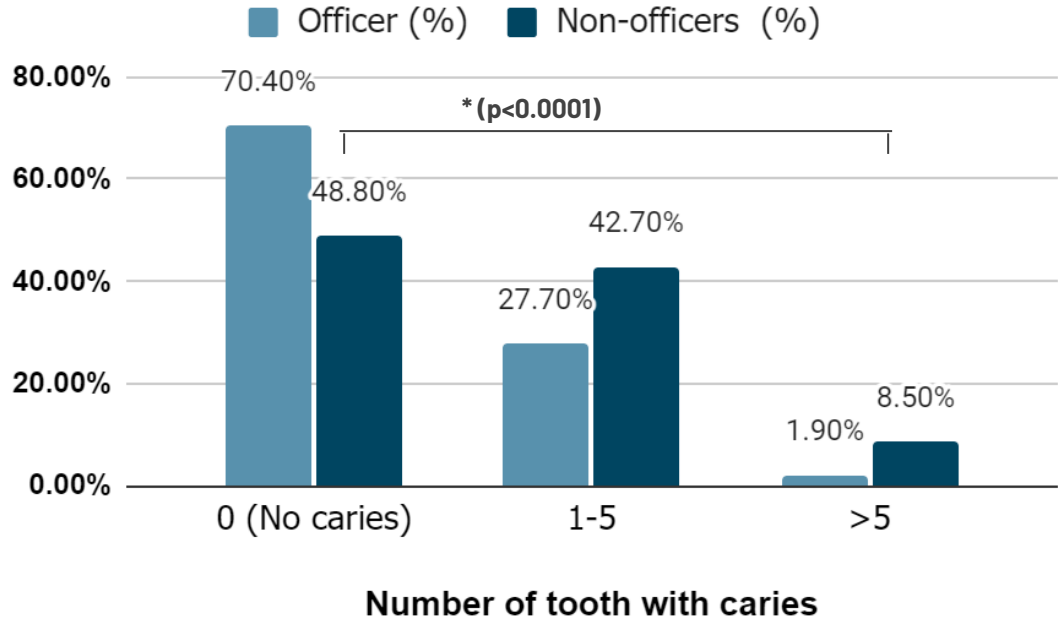


Figure1: Comparison of number of dental caries between officers and non-officers (%). Chi-square were used to test the statistical difference of dental caries between officers and non-officers;; * $p \leq 0.05$ is considered statistically significant ($p < 0.0001$)

There were statistically significant differences in the number of dental caries between officers and non-officers as shown in Fig1. ($p < 0.0001$).



Periodontal Findings

Periodontal findings	Total N=602, n (%)	Officers n=213, n (%)	Non-officers n=389, n (%)	P-value
Normal	262 (43.5)	125 (55.7)	137(35.2)	< .001
Calculus	256 (42.5)	65 (30.5)	191 (49.1)	< .001
Gingivitis	108 (17.9)	29 (13.6)	79 (20.3)	0.0405
General periodontitis	15 (2.5)	3 (1.4)	12 (3.1)	0.201
Localized periodontitis	4 (0.7)	1 (0.5)	3 (0.8)	0.672

*p-value ≤ 0.05 = statistically significant



Treatment needs	Total N=602, n (%)	Officers n=213, n (%)	Non-officers n=389, n (%)
Required Treatment	422 (70.1)	125 (58.7)	297 (76.3)
Dental Scaling	323 (53.7)	87 (40.8)	236 (60.7)
Root Planing	11 (1.8)	3 (1.4)	8 (2.1)
Root canal treatment	9 (1.5)	3 (1.4)	6 (1.5)
One surface filling	72 (12)	22 (10.3)	50 (12.9)
Two or more surface filing	151 (25.1)	32 (15)	119 (30.6)
Extraction	168 (27.9)	34 (16)	134 (34.4)
• Third molars extraction	141 (23.4)	29 (13.6)	112 (28.8)

70.1%

**Of the participants
required dental
treatment.**

Dental scaling was the most treatment needed for both officers and non-officers.



04

Discussion





Discussion

- High prevalence of caries, missing teeth, and calculus aligns with international maritime studies*
- Non-officers had significantly worse dental readiness in our study, also reported in studies from Germany and India**
- Smoking is prevalent in seafarers worldwide (Korea, Europe), but in our study, not linked to dental unfitness after adjustment
- Prior research links obesity to poor oral health, but our study found underweight status significant
- High-carb, processed diets increase caries risk; often unmeasured in studies
- Highlights need for broader lifestyle data in future maritime health research



Strengths & Limitations

STRENGTHS

- The first study in Thailand to study seafarers' dental health
- The study highlighted several important aspects that require attention from healthcare providers and the maritime industry

LIMITATIONS

- Cross-sectional, retrospective design limits causal inference
- Lacked detailed data on oral hygiene practices and diet.



CONCLUSION

- The study emphasizes the prevalence of dental problems among seafarers, revealing a significant burden of dental caries and periodontal disease in this population, especially non-officers.
- Thorough dental examination by dentists should be incorporated into the pre-boarding fitness assessment to mitigate dental emergencies at sea.
- Implementing interventions focused on enhancing the oral health of seafarers, including educating them about proper oral hygiene, ensuring they have access to dental services, and encouraging healthier lifestyles, are essential.



THANK YOU

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