



Prevalence of, and Factors Associated with, Unmet Healthcare Need in Urban Refugees and Asylum Seekers in Bangkok, Thailand: a Mediation Analysis

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Abstract

This study examines the prevalence of, and factors mediated to, unmet healthcare need of urban refugees and asylum seekers (URAS) in Thailand. In 2019, a cross-sectional survey of 181 URAS was merged with Thai Health and Welfare Survey data (total n=3,122). Self-reporting questionnaire was applied. Unmet healthcare need, defined as a status where a person needed health examination or treatment within the past 12 months, but he or she did not receive it, were analysed using multivariable logistic regression within a concept of mediation analysis. URAS were younger and had lower household economic status than Thais, and almost all URAS were uninsured. Most URAS suffered from a high prevalence of unmet healthcare need, 54.1% (range 31.4–100.0%) for outpatient (OP) care and 28.0% (range 0–83.3%) for inpatient (IP) care, while unmet healthcare need prevalence amongst Thais was 2.1% for both OP and IP care. For OP care, the direct effect of URAS status (predictor) on unmet healthcare need (outcome) showed a significant adjusted odds ratio (AOR) of 8.8 (95% CI 1.3–58.6), and a total effect (combining direct effect and indirect effect where insurance status served as a mediator) had AOR as large as 42.3 (95% CI 26.4–67.8). A significant total effect was also observed for IP care (AOR 13.1, 95% CI 7.8–22.0). Since most URAS substantially suffer from a lack of insurance coverage and this markedly influenced healthcare inaccessibility, policymakers should prioritise expanding insurance coverage towards URAS to promote health equity for all.

Keywords: urban refugee, asylum seeker, unmet healthcare need, healthcare, Thailand, mediation analysis

Introduction

According to the World Migration Report 2022 by the International Organization for Migration, one in every thirty people lives in a country other than his/her country of birth.¹ Various factors are responsible for global mobility, including political conflicts and violence, as well as lack of economic opportunities.²

Migration is recognised as a key social determinant of health, with migrants mostly suffer from social discrimination, language barrier, and exclusion from migrant-inclusive health policies in destination countries.³ The COVID-19 pandemic has further highlighted existing healthcare inequities amongst migrants.⁴ The United Nations and the World Health Organization have called for migrants' inclusive health policies in the host nations.^{5,6}

Amongst several kinds of cross-border migrants, forcibly displaced people; including refugees and asylum seekers (RAS), are one of the most neglected populations in society. RAS represented nearly one-third of all immigrants worldwide.⁷

Thailand, a key migration hub in Southeast Asia, relies significantly on workers from Cambodia, Lao People's Democratic Republic, and Myanmar (CLM).⁸ Thailand's demand for foreign workers is growing rapidly due to a relative lack of internal labour force.^{9,10}

Since implementing the National Health Insurance Act in 2002, Thailand has made substantial progress toward universal health coverage. Public insurance covers all Thai nationals.^{11–13} The Thai government has ensured healthcare access for CLM migrant workers and their children by establishing the Health Insurance Card Scheme in 2004 which provides a

comprehensive benefit package, close to public insurance for Thai populations.^{14,15}

Compared to CLM foreign workers, the well-being of RAS in Thailand is highly neglected. They are ineligible for public health insurance schemes, with only a few having private insurance. Although refugee camps along the Thai border are frequently supported by several non-profit or non-governmental organizations (NGOs), the health of urban refugees and asylum seekers (URAS) in urban settings remains largely neglected. Moreover, they are at risk of detention and deportation.¹⁶ Previous studies have revealed numerous barriers limiting URAS healthcare access.^{17–21}

This study therefore aimed to explore prevalence of and factors associated with unmet healthcare need amongst URAS in Bangkok, Thailand. This study also hypothesized that the lack of insurance played a critical role in mediating the effect of URAS on unmet healthcare need as described later in the methods section.

Methods

Study Design, Populations, and Samples

This study revisited data from an earlier project focused on examining healthcare access, specifically unmet healthcare needs, within the URAS population against the Thai population.¹⁸ Bangkok was selected due to its significant URAS population.

Data was integrated from both primary and secondary sources, namely, the 2019 Health and Welfare Survey (HWS).²² This was a cross-sectional primary survey of URAS conducted between October and December 2019. The HWS was a biennially nationwide survey on the Thai population conducted by the National Statistical Office and International Health Policy Programme, Ministry of Public Health (MOPH).

For the primary survey in URAS, this study communicated with the Bangkok Refugee Centre (BRC), supported by UNHCR, to promote URAS health. The URAS enrolled in this study included only Pakistanis, Vietnamese, Cambodians, Somalis, Afghans, Palestinians, Chinese, Sri Lankans, Iraqis, and Syrians, the top-ten most common nationalities in Thailand (n=3,021). Note that CLM migrants are considered economic migrants—hence being excluded from this survey. This study then sampled 206 URAS. Of these 206 samples, 181 completed the survey. This data was combined with responses from the Thai population in the 2019 HWS (n=2,941), resulting in a final dataset of 3,122 observations.

Sample Size Calculation, Sampling Methods, and Survey Design

This study employed the prevalence of unmet healthcare need to determine the sample size using the formula:

$$n = \frac{(Z_{(1-\frac{\alpha}{2})}\sqrt{2PQ} + Z_{(1-\beta)}\sqrt{P_1Q_1 + P_2Q_2})^2}{(P_1 - P_2)^2}$$

In this formula, this study set $\alpha = 0.05$ for significance level; $\beta = 0.2$ for power; $Z_{(1-\frac{\alpha}{2})} = 1.96$; $Z_{(1-\beta)} = 0.84$; $P_1 = 0.11$; $Q_1 = 1 - P_1$; $P_2 = 0.012$; $Q_2 = 1 - P_2$; $P = \frac{(P_1 + P_2)}{2}$ and $Q = 1 - P$. P_1 represents the unmet healthcare need prevalence in URAS samples, while P_2 represents the similar prevalence in the Thai population. P_2 was suggested to be 0.012 based on Thammatacharee et al.²³ For P_1 , this study used the prevalence of unmet healthcare need of refugees in Italy by Busetta et al.,²⁴ suggesting an 11% prevalence. Accounting for 20% incomplete information, this study aimed for at least 140 Thais and 140 URAS samples. The available data from Thai respondents in the HWS exceeded the required sample size. For URAS sampling, this study used stratified random sampling on the BRC roster, proportionate to size with respect to age, gender, and nationality. This study ended up with 181 URAS and 2,941 Thai participants.

Data Collection

All the selected participants were asked to visit the BRC office to complete the paper questionnaire. Financial support was provided as compensation for travelling costs (about US\$10 each, using the exchange rate on 1 Oct 2019). Phone interviews were conducted for those unable to travel. Legal guardians responded for children under 15. The questionnaire was translated into the participants' language and took approximately 30 minutes.

Questionnaire Design and Key Determinants

The questionnaire for the URAS survey contained two sections: (i) demographic data and (ii) profile of unmet healthcare need.

In the first section, demographic questions consisted of gender, age, education background (primary, secondary or degree and above), health insurance status (public, private, or uninsured) and household monthly income. Note that, by the Thai employment laws, URAS are not eligible to be insured by the public insurance scheme. However, some URAS might possess private insurance. For convenience, age was categorised into three groups (≤ 15 years, 16–60 years, and > 60 years). This study created a new binary variable, 'household economy', by dividing the

household monthly income into two divisions, 'below average' and 'above-or-equal average' by a cut-off at US\$ 1,428 (using the exchange rate on 8 May 2020)—the mean monthly household income amongst Bangkok residents.²⁵

In the second section, participants assessed their unmet healthcare need based on self-reported responses. This study defined unmet healthcare need as a status where a person reported that he or she required health examination or treatment for any health issues within the past 12 months, but he or she did not receive or failed to seek it. In the questionnaire, this study asked each respondent to report whether he or she had ever felt unwell and needed healthcare, but not received it during the last 12 months. This study categorised this question into outpatient (OP) and inpatient (IP) care. This study also asked the participants to provide the most important cause of unmet healthcare need, for instance, 'unable to afford the treatment cost' or 'long waiting times.'

Statistical Analysis

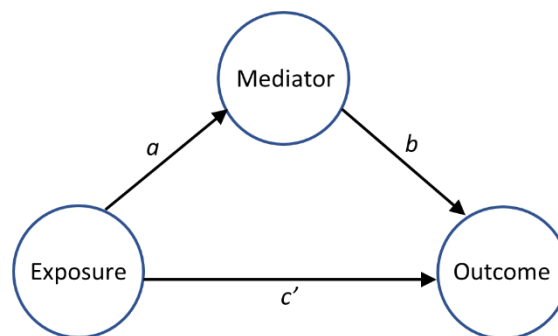
All statistical analyses were performed by Stata v14.0 (US-serial number: 401406358220). This study divided the analysis into four parts: (i) univariable analysis, (ii) multivariable logistic regression, (iii) mediation analysis, and (iv) descriptive analysis on the most compelling reasons for unmet healthcare need.

First, in univariable statistics, all categorical variables were shown as frequency and percentage, while age and household economy were expressed by median and percentile. Chi-square test, Fisher's exact test, and Mann-Whitney U test were performed to compare the proportionate difference of unmet healthcare need between Thais and URAS.

Second, in multivariable logistic regression, unmet healthcare need was the main dependent variable, and insurance status was the main predictor, adjusted for economic status of household, age, gender, and nationality.

Third, mediation analysis was conducted to complement multivariable analysis, considering URAS status as the main predictor and experiencing unmet healthcare need as the main outcome, with insurance status as a mediator. This idea was supported by the results from univariable analysis and the fact that URAS are ineligible for public insurance. The simplified concept of mediation analysis is as follows. This study first regressed the outcome on the predictor, the mediator and the covariates. The coefficient of the predictor was considered direct effect (suppose, θ). Then this study regressed the mediator on the predictor and the covariates. Suppose the predictor

coefficient at this time is ϕ , the indirect effect is the product of θ and ϕ . The sum (in linearity) between direct and indirect effect is the total effect. This study used 'PARAMED' package in STATA. Gender, age group and economic level were treated as covariates. Results were presented in the form of adjusted odds ratio (AOR) like multivariable logistic regression, but sorted into total effect, direct effect, and indirect effect (Figure. 1).



A mediation analysis was applied in this study.²⁶ a and b illustrate the path coefficients from the exposure to the mediator and the mediator to the outcome, respectively. c' is the path coefficient of direct effect from the exposure. The product of a and b display the mediation effect of the exposure on the outcome through the mediator. The sum of a b and c' (in linear system) is total effect.

Figure 1. Causal diagram for performing mediation analysis

Fourth, this study focused on URAS suffering for unmet healthcare need. This study began by descriptively analysing the frequency of the most important reasons contributing to unmet healthcare need from the URAS' perspective.

Ethics

This study received ethics approval from the Institute for the Development of Human Research Protection under the reference number IHRP592/2562. Written consent was obtained from the participants.

Results

Demographic Profiles

A total of 3,122 records were entered into the analysis, of which 5.8% were URAS ($n=181$). Among the URAS group, 88.4% ($n=160$) were refugees and 11.6% were asylum seekers ($n=21$). Males and females in both Thais and URAS were almost equal in number. The median age of Thais was 42 years. In contrast, the median age of URAS was 23 years. Approximately 65.4% of Thais completed secondary education or higher, compared to 36.5% of URAS participants. Thais' median household income was about fivefold greater than URAS (US\$ 469 *versus* US\$ 188; using the exchange rate on 8 May 2020). While almost all Thais were insured by either public or private insurance (99.8%), only 2.2% of URAS were insured.

More than half of URAS (54.1%) had unmet healthcare need for OP care and about 28.0% for IP care. These

figures presented with statistical difference compared with Thais (p -value < 0.001), Table 1.

Table 1 Demographic characteristics of the participants by nationality

Variable	Thai (n=2,941)	URAS* (n=181)	P-value	Test
Sex, n (%)			0.955	Chi-square
Female	1,550 (52.7)	95 (52.5)		
Male	1,391 (47.3)	86 (47.5)		
Median age, years (IQR)	42 (31)	23 (27.3)	<0.001	Mann-Whitney U
Age group (years), n (%)			<0.001	Chi-square
≤15	349 (11.9)	68 (37.6)		
>15–60	2,033 (69.1)	102 (56.3)		
>60	559 (19.0)	11 (6.1)		
Education			<0.001	Chi-square
Up to primary	981 (34.6)	115 (63.5)		
Secondary or above	1,856 (65.4)	66 (36.5)		
Median household income, US\$ (IQR)	938 (469–1,406)	188 (141–281)	<0.001	Mann-Whitney U
Household monthly income, n (%)			<0.001	Chi-square
Above or equal average	2,080 (70.7)	30 (16.6)		
Below average	861 (29.3)	151 (83.4)		
Insurance status, n (%)			<0.001	Fisher's exact
Uninsured	6 (0.2)	177 (97.8)		
Insured	2,935 (99.8)	4 (2.2)		
Unmet healthcare need for OP care, n (%)			<0.001	Chi-square
Yes	61 (2.1)	98 (54.1)		
No	2,880 (97.9)	83 (45.9)		
Unmet healthcare need for IP care, n (%)			<0.001	Chi-square
Yes	61 (2.1)	49 (28.0)		
No	2,880 (97.9)	126 (72.0)		

*Urban refugee and asylum seekers. Missing data were excluded as they accounted for less than 1% of observations missing. IQR: interquartile range. OP: outpatient. IP: inpatient

Determinants of Unmet Healthcare Need

The multivariable analysis indicated similar results for the factors associated with unmet healthcare need for both OP and IP care after adjusting for other potential covariates. Although being uninsured was linked to unmet healthcare need in univariable analysis, there was no significant statistical difference observed for OP care (AOR 4.4, 95% CI 0.7–29.7) and for IP care (AOR 2.8, 95% CI 0.3–27.5) in multivariable analysis. The strong association of experienced unmet healthcare need was being URAS (AOR 10.1, 95% CI 1.5–69.1) in OP care despite no significance found in IP care (AOR 5.0, 95% CI 0.5–50.3). The adjusted odds ratios between unmet healthcare need and being in the middle-aged group (>15 years but ≤60 years) were 1.9 (95% CI 1.0–3.4) for OP care and 1.4 (95% CI 0.7–2.6) for IP care. Gender and education backgrounds did not show statistical significance. In addition, URAS in less affluent households significantly faced greater degree of unmet healthcare need in OP care (AOR 1.9, 95% CI 1.2–2.9). This finding remained in the same direction

in IP care despite having a marginal significance (AOR 1.6, 95% CI 1.0–2.5), Tables 2–3.

Table 2. Factors associated with unmet healthcare need for outpatient care by multivariable logistic regression

Variable	AOR	95% CI	P-value
Uninsured (vs insured)	4.4	0.7–29.7	0.126
Male (vs female)	0.9	0.6–1.4	0.785
URAS (vs Thai)	10.1	1.5–69.1	0.018
Age group (years) (vs ≤15)			
>15–60	1.9	1.0–3.4	0.046
>60	1.4	0.6–2.9	0.432
Education level (vs primary education)			
Secondary or above	0.7	0.5–1.1	0.165
Below-average economic level (vs equal or above average)	1.9	1.2–2.9	0.005

Missing data were excluded as they accounted for less than 1% of observations missing. URAS: urban refugee and asylum seekers. AOR: adjusted odds ratio. CI: confidence interval. vs: versus.

Table 3. Factors associated with unmet healthcare need for inpatient care by multivariate logistic regression

Variable	AOR	95% CI	P-value
Uninsured (vs insured)	2.8	0.3–27.5	0.387
Male (vs female)	0.9	0.6–1.3	0.574
URAS (vs Thai)	5.0	0.5–50.3	0.175
Age group (years) (vs ≤15)			
>15–60	1.4	0.7–2.6	0.348
>60	0.9	0.4–2.0	0.733
Education level (vs primary education)			
Secondary or above	0.7	0.5–1.2	0.208
Below-average economic level (vs equal or above average)	1.6	1.0–2.5	0.056

Missing data were excluded as they accounted for less than 1% of observations missing. URAS: urban refugee and asylum seekers. AOR: adjusted odds ratio. CI: confidence interval. vs: versus.

Mediation Analysis on Unmet Healthcare Need through Insurance Status

In OP care, the direct effect of URAS on unmet healthcare need displayed statistical significance (AOR 8.8, 95% CI 1.3–58.6). However, there was no statistical significance in the indirect effect (AOR 4.8, 95% CI 0.8–30.8). The odds of facing unmet healthcare need amongst URAS was about 40-fold the odds found amongst Thais, as presented by a large total effect with statistical significance (AOR 42.3, 95% CI 26.4–67.8), Table 4. Similar findings were found in IP care where the total effect demonstrated a large significant effect size (AOR 13.1, 95% CI 7.8–22.0), Table 5.

Table 4. Direct, indirect, and total effects of URAS (vs Thai) on unmet healthcare need for outpatient care (insurance status as mediator)

Type	AOR	95% CI	P-value
Direct effects	8.8	1.3–58.6	0.024
Indirect effects	4.8	0.8–30.8	0.099
Total effects	42.3	26.4–67.8	<0.001

AOR: adjusted odds ratio. CI: confidence interval.

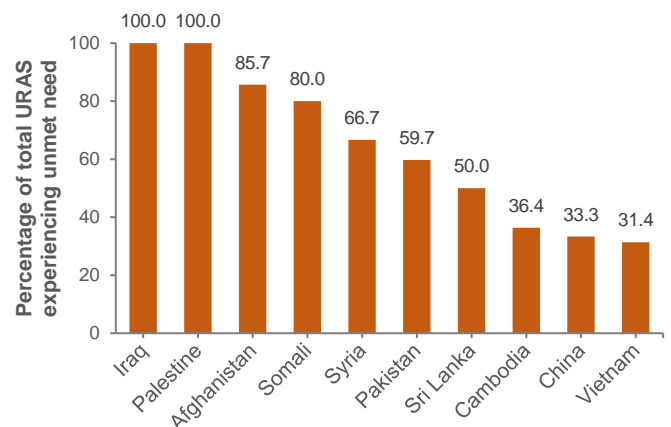
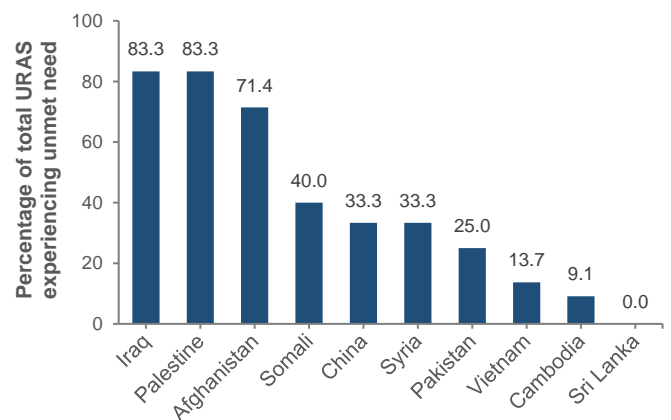
Table 5. Direct, indirect, and total effects of URAS (vs Thai) on unmet healthcare need for inpatient care (insurance status as mediator)

Type	AOR	95% CI	P-value
Direct effects	4.5	0.5–43.8	0.198
Indirect effects	2.9	0.3–27.8	0.349
Total effects	13.1	7.8–22.0	<0.001

AOR: adjusted odds ratio. CI: confidence interval.

Prevalence of Unmet Need for Outpatient Care among URAS by Nationalities

Figure 2 and Figure 3 demonstrate the prevalence of unmet healthcare need for both types of services by URAS' nationalities. Palestinians and Iraqis had the highest levels of unmet healthcare need for OP care (100% both), followed by Afghans (85.7%) and Somalis (80.0%). Vietnamese reported the lowest unmet healthcare need prevalence (31.4%). Similarly, for IP care, Palestinians and Iraqis had the highest levels of unmet healthcare need (83.3% both). No Sri Lankan participants reported unmet healthcare need. Almost all participants experiencing unmet healthcare need cited a lack of financial resources as the main reason (for both OP and IP care, 96% and 94% respectively). Other reasons included language barriers and fear of law enforcement.

**Figure 2. Prevalence of unmet healthcare need for outpatient care among URAS by nationalities (n= 2,941)****Figure 3. Prevalence of unmet healthcare need for inpatient care among URAS by nationalities (n= 2,941)**

Discussion

This study is among a few studies in Thailand to investigate the degree of, and factors associated with unmet healthcare need amongst URAS. Demographic data showed that most URAS were relatively young and suffered from low household income. URAS had a

higher degree of unmet healthcare need, both for OP and IP care, compared to Thais, and the prevalence of OP unmet healthcare need was far greater than IP.

Multivariable logistic regression showed that being a URAS contributed to ten-fold greater odds of unmet healthcare need compared to being Thai. The result for IP care was expressed in the same pattern of OP care though with a lesser degree. Household economic status was significantly related to both OP and IP unmet healthcare needs.

Mediation analysis showed that the contribution of URAS status to unmet healthcare need was not fully mediated via insurance status, although the insurance status itself still played a pivotal role towards unmet healthcare need. URAS originating from the Middle East encountered a greater degree of unmet healthcare need compared to URAS from Southeast Asia. Financial constraints were the primary reason for unmet healthcare needs among individuals seeking treatment.

In Thailand, no official public health program supports healthcare need for URAS. UNHCR and NGOs provide interpretation services with small monetary support for living expense and serious health conditions requiring hospital admission for URAS.²⁷ This means URAS may need to manage for themselves when OP care is needed, while for IP care for serious illnesses, there are some existing supporting mechanisms from UNHCR and NGOs (though not comprehensive).²⁸

Though the effect of being URAS mediated by a lack of insurance on unmet healthcare need (indirect effect) did not show a statistical significance, a significantly large total effect was observed. This implies that unmet healthcare need among URAS might be alleviated if more URAS could be insured. Hence, enrolling URAS in public insurance schemes should be considered, as insurance provision depends on health system design, whereas nationality is an immutable factor.^{29,30}

This study's findings align with previous literature.^{21,29-31} A study of Syrian refugees in Turkey by Torun et al, reported that Syrian refugees experienced many key barriers in accessing healthcare such as language disparities and limited knowledge in the Turkish healthcare system.²⁹ Studies by Ying Liew et al, and Khanom et al, underpinned the impact of low socioeconomic status that hinders access to healthcare among URAS in Malaysia and the United Kingdom.^{21,31}

There are some policy implications from this study's findings. First, since the unmet healthcare need for OP care was more profound than for IP care, innovative healthcare programs which focus on minor illnesses

should not be neglected (such as mobile clinics and community health centres). These initiatives necessitate seamless collaboration between numerous parties, including MOPH and UNHCR.

Second, as language barrier was mentioned by URAS in this study and in various literature, interpretation services should be strengthened to bridge communication gaps.³² The Thai MOPH has implemented 'migrant health volunteer' program by recruiting bilingual migrants to work closely with health personnel.^{33,34} Therefore, the expansion of the migrant health volunteer program to encompass URAS would be valuable.

Finally, though URAS status serves as the most influential factor affecting unmet healthcare need, it is extremely difficult to be modified (if not, impossible). There are some less influential factors that can be addressed, such as insurance status or household economic level. Though these factors did not exhibit significant association with unmet healthcare need, policies to address these issues are of huge merit. Initiatives to avoid healthcare impoverishment and uplift the economic status of URAS should be examined.^{35,36}

Some limitations remain in this study. First, the survey was performed at the BRC office in order to protect sensitive information of URAS, namely the participants' address. Consequently, some other crucial household information, including household assets and owners' equity could not be obtained. Besides, this study did not fully trace the participants' disease profile. Future studies could incorporate physical visits for data collection and explore more on the participants' health status.³⁷

Second, although phone calls were executed as an attempt to boost the representation of individuals with travel difficulty, this study could not fully reach those who did not show up at the BRC office. Future studies should delve down into the healthcare need of hard-to-reach URAS.^{38,39}

Last but not least, as the nature of the survey was retrospective, memory bias is inevitable. Therefore, a continuous monitoring on health status, degree of healthcare access, and quality of life of URAS should be implemented.

Conclusion

URAS in Thailand reported high prevalence of unmet healthcare need (54.1% for OP care and 28.0% for IP care). This prevalence was also markedly higher than the prevalence of Thais. The most important reason for unmet healthcare need reported by URAS was the lack

of financial resources to afford treatment. Being URAS and low household income exhibited significant association with unmet healthcare need for OP care. Mediation analysis showed a large total effect on the association between URAS and unmet healthcare need by using a lack of insurance as the mediator. Multi-faceted policies to reduce barriers towards healthcare access amongst URAS should be introduced.

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Conflicts of Interest

The authors declare non-financial competing interests.

Author's Contribution

YP, RA, ST, and HK conceptualized the study. YP, RA, and HK curated data and conducted the formal analysis. HK acquired funding and provided resources. Methodology was handled by YP, RA, and HK. YP, RA, and ST managed the project. YP, RA, and HK conducted the investigation and developed the software. HK supervised the study. Validation was done by YP, RA, and HK. Visualization was managed by YP and RA. YP, RA, and ST drafted the manuscript. All authors read and approved the final version.

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