

Barriers to Coronavirus Disease 2019 (COVID-19) Vaccine Uptake among Rural Sik District Residents

S Maria Awaluddin¹, Noorul Emilin Abdul Khalid^{2*}, Hadzri Zainal², Suraya Said²,

Rosmalina Abu Bakar²

¹ Institute for Public Health, National Institutes of Health, Ministry of Health Malaysia

² Pejabat Kesihatan Daerah Sik, 08200 Sik, Kedah, Malaysia



Introduction

Vaccination has been proven as one of the strategies to prevent morbidity and mortality for vaccine-preventable diseases worldwide including COVID-19 (1). However, there are many barriers against the COVID-19 vaccine such as poor socioeconomic factors, a lower educational level, lack of awareness, religious and cultural beliefs which can be grouped into structural and attitudinal barriers (2,3).

Objectives

This study aimed to determine the proportion of primary reasons for missing the first dose COVID-19 vaccine at the public health centre and to compare the structural barriers versus attitude-related barriers based on the residents' socio-demographic characteristics.

Materials & Methods

This was a cross-sectional study on an outreach programme conducted from October 2021 to January 2022 due to inadequate COVID-19 immunization coverage in a mainly rural population. During the outreach programme, respondents were enquired on their primary reason for missing vaccination at the public health vaccination center via an open-ended questionnaire. Their answers were coded inductively and deductively to generate a list of reasons and then categorized into structural and attitudinal barriers. The outreach team also managed to compile a total of 553 residents' data including their basic socio-demographic information such as age, gender, bed ridden status, chronic illness, average distance to the nearest clinic and transportation status. Data analysis was conducted using Microsoft Excel and IBM SPSS Statistics version 25.0 to tabulate the descriptive finding and bivariate analysis. A chi-square test was used to determine statistical significance between the two groups ($p < 0.05$).

Results and Discussion

Table 1 demonstrates primary reasons for missing vaccination compared against the outreach outcomes. In total, structural barriers involved 302 residents (54.6%) while those with attitude-related barriers numbered 251 (45.4%). The outreach programme successfully vaccinated 486 residents (87.6%) to overcome structural and attitude related barriers except for vaccine refusal group whereby only 13.7% of them were successfully vaccinated.

Table 2 shows the proportion of structural barriers was significantly higher among female residents, those aged 60 years and above, non-Malaysian citizens, with bed-bound status, those who have a chronic disease and residents who resided more than 10 kilometers from the nearest health clinic.

The outreach programme was intended to deliver care to the underserved population residing in rural areas but as found in previous studies, outreach teams should be prepared to contend with attitude-related barriers too (4,5).

Table 1: The overall status of Program Immunisasi COVID-19 Kebangsaan (PICK) outreach in the District of Sik, n=553

Primary reason for missed 1 st dose of COVID-19 vaccine at public health vaccination centre	Overall		Successfully vaccinated (n=486)		Unsuccessful (n=67)	
	n	%	n	%	n	%
Attitude-related barriers						
*Vaccine refusal	73	13.2	10	13.7	63	86.3
Vaccine hesitancy	110	19.9	110	100	0	0
Afraid of needle	47	8.5	47	100	0	0
Feeling not well	10	1.8	10	100	0	0
Ignorance	11	2.0	11	100	0	0
Structural-related barriers						
Transportation problem	292	52.8	292	100	0	0
Not found due to incomplete address	4	0.7	0	0	4	100
No close relative	3	0.5	3	100	0	0
No smartphone	3	0.5	3	100	0	0

* Vaccine refusal refers to respondents who refused vaccination despite being counselled by a Family Medicine Specialist and signed the Vaccination Refusal Form.

Table 2: A comparison of respondents with structural and attitudinal barriers based on their sociodemographic profiles in Rural Sik District

Variables	Barriers for missed vaccination				
	Structural-related, n=302		Attitude-related, n=251		p-value
	n	%	n	%	
Gender					
Male	144	48.8	151	51.2	
Female	154	60.6	100	39.4	0.006
Age group (years)					
less than 60	133	47.0	150	53.0	
60 and above	165	62.0	101	38.0	<0.001
Citizenship					
Yes	268	53.0	238	47.0	
No	30	69.8	13	30.2	0.034
Distance to nearest health clinic					
5 km	75	44.6	93	55.4	
6-10 km	133	51.6	125	48.4	
> 10 km	90	73.2	33	26.8	<0.001
Bed-bound status					
Yes	101	82.8	21	17.2	
No	197	46.1	230	53.9	<0.001
Chronic disease					
Yes	86	62.3	52	37.7	
No	212	51.6	199	48.4	0.028

Conclusion

- Structural barriers were more prevalent among rural Sik residents than attitude-related barriers
- Outreach teams should be prepared to contend with attitude-related barriers in the population
- The Sik district vaccination outreach programme was highly successful in overcoming structural and attitude related barriers, however, vaccine refusal remained an obstacle to higher immunization coverage in a mainly rural population

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