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Barriers and Drivers towards the Use of Childhood Vaccination Services by Undocumented Migrant Caregivers in Sabah, Malaysia: A Qualitative Analysis

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***Abstract*—**After 27 years, Malaysia reported polio cases in 2019 involving the children of the undocumented migrants living in Sabah. These undocumented migrants present a significant challenge in achieving the elimination of vaccine-preventable diseases (VPD). Due to the recent polio outbreak among the undocumented migrant children in Sabah, an in-depth interview was conducted among the caregivers of undocumented migrant children to identify the barriers and drivers towards vaccinating their children. Financial barriers, legal citizenship status, language barrier, the COVID-19 pandemic, and physical barriers have been the barriers to access vaccination services by undocumented migrants. Five significant drivers for undocumented migrants to vaccinate their children are social influence, fear of disease, parental trust in healthcare providers, good support, and vaccine availability. Necessary action should be taken immediately to address the problems of vaccinating the children of undocumented migrants to prevent the re-emergence of VPD.

***Keywords*—**Malaysia, polio, Sabah, undocumented migrants.

I. Introduction

IMMUNIZATION is the best-proven tool for controlling infectious diseases and preventing death. Over the years, childhood immunization has been incorporated in many countries as part of their public health programme. Malaysia is one of them. National immunization coverage in Malaysia has always been high [1]. However, on December 8, 2019, Malaysia reported the first polio case after 27 years [2]. A total of four cases have been reported so far in Malaysia since December 2019 [3]. All these cases have had been reported in Sabah. Three of the said case involved children of undocumented migrants living in Sabah. More VPDs are reported among the migrants than non-migrants due to lower immunization rates among the migrants [4].

Sabah contributes to Malaysia's tourism because of the highest mountain in South East Asia, Mount Kinabalu, and also due to many beautiful islands off its' coastline [5]. However, it is challenging to control the migrant movement into Sabah [6]. There are two predominant migrants living in Sabah, they are the Indonesians (85%) and the Philippines (15%) [7]. They are either refugees, migrant workers, or illegal migrants who are not documented in the foreigners' national statisticians [7]. Most of the illegal migrants are considered stateless people. "Stateless person" is defined as the person "who is not considered as a national by any State under the operation of its' law" [8]. The refugees with a temporary pass, IMM13, are also considered slipping into statelessness [9]. They often face difficulties in accessing education and healthcare facilities and also do not have freedom of movement. Many of them pass on the situation of statelessness to their children, who then pass it on to the next generation, which is happening in Sabah.

Despite many efforts, the undocumented migrants present a challenge to attain the national goals, such as the elimination programs for VPDs due to sup-optimal immunization coverage. Migrants of all categories and status (either legal or illegal) are said to face many barriers in access to healthcare [10] due to national immigration and healthcare policies, health system challenges, and service provider barriers [11], [12].

The Tailoring Immunization Programme (TIP) 2013 proposes that the relationship between the caregiver and the vaccination provider is an important aspect to be considered in vaccination decision-making. The important point of the TIP approach is that we first need to listen to the individual caregiver's point of view, explore the factors that influence the way they live and evolve, and understand what makes this practice possible for them [13]. The TIP approach was to change the traditional approach of a supply-oriented immunization programme to a more people-centred and comprehensive approach considering the complexity and the factors influencing vaccination uptake [14]. For example, when this approach was made in the UK, it was known that the barriers to uptake vaccine among the Charedi community were not due to distrust against vaccination but due to inconvenience of vaccination services [15]. TIP approach emphasizes the user-centred design that is more novel to increase the vaccination among the identified susceptible

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population. The updated TIP 2019 provides the theoretical model and framework to assess the barriers and drivers of vaccination. It is called the COM-B model. COM-B stands for capability of the individual, opportunity of contextual, motivation of the individual, and finally the vaccination behaviour. Due to the recent outbreak of polio among the undocumented migrant children in Sabah, this study focuses on identifying the barriers and motivating factors towards the use of childhood vaccination services by undocumented migrant caregivers using the COM-B model.

II. Method

This is a qualitative study using in-depth interviews of the caretakers of the undocumented migrant children using a semi-structured questionnaire. The COM-B model was used to develop the semi-structured questionnaire to identify the barriers and motivators faced by the undocumented migrants to vaccinate their children. In-depth interviews (IDI) were done with the parents or grandparents, or caretakers of the undocumented migrant children. However, the undocumented migrant children's caregivers were also requested to mention other factors besides the factors mentioned in the COM-B model to know other factors that contribute to the use of vaccination of undocumented migrants, specifically in Sabah.

The study was conducted from February 2021 to March 2021 among the caregivers of undocumented migrant children. The participants were either the children's mothers, fathers, or family members. IDIs took about 20-30 minutes. On average, about 2-3 participants were interviewed in each session. The participants were either visiting the clinic, admitted to the hospital, or at the immigration detention centre. The participants that visited the clinic were seeking treatment for their sick children, checking jaundice levels, or vaccinating their children. The clinic has visiting days to the detention centre to carry out an antenatal check-up and vaccination services among the detainees. The detainees with children up to 18 years old who are staying in the immigration detention centre were visited to be enrolled in the study during the visiting days by the clinic staff. Each participant was interviewed separately in a private room at the clinic or at the detention centre.

Ethical approval had been obtained from the Medical Research Ethics Committee (MREC), Ministry of Health, University Malaysia Sabah (UMS) Ethical Board, and the Sabah State Health Department Director. Only those who had volunteered to take part in the interview were enrolled in the study. Due to the poor literacy rate, all the participants were requested to give verbal consent instead of written consent before their interview. The responses were audio-recorded, and permission has been obtained from the participants before recording. The audio recording is used only for transcription purposes. According to [16], thematic analysis was done to identify the emerging themes from those interviews. The analysis was done manually, and two researchers did coding. The results were compared to see the accuracy of the themes.

III. Result

A total of 40 undocumented migrants were interviewed using a semi-structured questionnaire (five participants from the hospital, 20 participants from the clinic, and 15 participants from the detention centre). However, only 31 undocumented migrant children's caregivers were selected for the analysis and their characteristics have been summarized in Table I. Four participants were excluded as they have birth certificates (Malaysian) but are considered undocumented in the clinic registration as they do not have an identification card (IC) of Malaysia, which supposedly they obtain when they were 12 years old. Five more were excluded as they had their child while at the detention centre and have not experienced any barriers yet to bring their child for vaccination, it was compulsory to have their child vaccinated while in the detention centre. The participant's ages ranged from 18 years old to 55 years old. Most of the caregivers were born in Sabah, except for five participants. The participants who were born in Sabah have parents who had originated from the Philippines or Indonesia. Their spouses had brought the five participants who were born outside Sabah into Sabah.

Only 12 out of the 31 participants have received either primary or secondary education. Of the 12 participants, two of them were taken to the Philippines to receive their education and, after receiving their education, returned to Sabah in search of employment. Only two participants are in employment, whereas the rest of the caregivers are supported either by their spouses or parents. Their family income ranges from RM00.00- RM2000.00. The participants said that they had lost their income during the Movement Control Order (MCO) that came into effect in Malaysia in March 2020 due to the coronavirus pandemic. None of the caregivers are legally married and married according to their traditional rites. Three of the participants were separated from their spouses and are being supported by their family members. The number of children that they have ranged from 1 to 6. The ages of the children range from 5 days to 14 years. Most of the children of the participants are not attending any school as the children do not have any legal documents. Except for five participants, the rest of the participants brought their children to the clinic to vaccinate. Most of the participants could speak the national language, Malay, except for one person.

All the undocumented migrants are not aware of the diseases that can be prevented through vaccination, but they believe that it is very important for their children's health. Only a few could name the vaccine that is given to their children. They only know about BCG but are unsure about the disease that is prevented through the BCG vaccine. However, due to the recent massive Oral Polio Vaccination (OPV) campaign throughout Sabah, most caregivers are aware of the polio vaccine.

There were two main themes identified, the barriers and drivers, where each theme bore five subthemes (Fig. 1).

A. Barriers

There are five significant barriers identified through the IDI: financial barriers, legal status, language barrier,

pandemic, and physical barriers. The terms "few" were used for the under-five respondents, "several" for 5-10 respondents, "majority" for 11-20, and "most" for 21-31 respondents.

Financial Barrier

1. Unable to Pay for the Vaccine

All caregivers said that financial constraint is the first and foremost problem preventing them from attending the clinic to get the vaccine for their children. A few participants rejected all the vaccines due to the high expense. Those participants who had refused to take all the vaccines only bring their children to the clinic when they are sick as they cannot afford to pay for the vaccination.

"We cannot afford to pay. We want the vaccine too. But what can I do?" (ID 1)

"We cannot afford the payment." (ID2)

"People like us need to pay more for the vaccine, it is expensive, and we do not have money" (ID 15) "

"It is difficult here for those who do not have documents. We cannot afford it. However, if my child is sick, then I will bring him". (ID 24)

Nevertheless, a majority of the caregivers said that they would bring their children for vaccination whenever they have saved enough money.

"Every day, I save some money for the vaccine. Like this month, he has an appointment at the clinic, so I keep the money aside. " (ID 7)

"During these five days, my husband was able to work and managed to get RM300. That is why we brought the child to the clinic today. I was not able to come for the appointment for the past 11 months because we had no money." (ID 8)

"Even if we have RM100, it is not enough for us to get the vaccine. If my child needs to be vaccinated for two vaccines, then I must pay RM120. So, we must find the money first to be able to bring it to the clinic." (ID 12)

"I must wait until I have enough money. Like that day, I did not have enough money, so I brought him today to inject two vaccines one-shot." (ID 18)

a. Job and Income Security Issue

Most of the caregivers' spouses do not have permanent jobs. Therefore, they do not have permanent incomes to afford to bring the children for the vaccine.

"My husband works as a fisherman. If he goes to sea at night, sometimes he can get RM20.00. But if the weather is bad, he will not be able to go, so we end up with nothing for that day." (ID 1)

"We always travel around Sabah to look for jobs. Wherever there is a job, there we will go. "(ID4)

"Sometimes my husband will get only RM10.00 ringgit and sometimes he gets nothing." (ID 6)

b. Loss of Income during the Pandemic

Most participants have lost their family income due to the MCO in Malaysia during the COVID-19 pandemic. This adds a strain onto an already dire financial situation of theirs.

"Since MCO, my husband has no job." (ID 7)

"Before this, my husband had a job, but because of MCO, he has no income for the past 11 months until now. That is why it is hard for me to come to the clinic." (ID 8).

"During MCO, the child's mom did not have income, so we could not bring the child for the vaccine." (ID 12)

2. Increase in the Price of the Vaccine

Few participants said they used to bring their older children for vaccination as they could afford the price a few years back; however, nowadays, they cannot afford to bring their younger children anymore due to increased vaccine price and clinic registration fee. Now, the caregiver must pay RM40 for the registration during each visit and subsequently another RM40 for each vaccine.

"In 2013, when my first child was born, the fee was only RM 15 at that time, and I could afford it." (ID 1)

"It (the vaccine) used to be cheap RM 15. I used to bring my eldest son." (ID 2)

"Before this, we used to pay only RM 15. Now it costs more than RM 60. "(ID 18)

3. Transportation Cost Issue

A few of the participants also said that they could not pay for the transportation to come to the clinic in addition to the cost of the vaccine. Due to lack of legal documentation, they are afraid to use public transport such as the bus. So, they would rent a car or use e-hailing services to attend the clinic when they have the money available. Some come from the islands to the mainland to attend the clinic.

"We have to come by boat. We are afraid that the boat will capsize if there are too many people on the boat. But if there is only us in the boat, then we have to pay RM15 ringgit to and for." (ID 7)

"I have to pay for the transportation fee, and then when I reach the clinic, I have to pay the registration and the vaccine." (ID 14)

"If I use the boat with two engines, I need to pay RM 100 to and from, but if I take a boat with one engine, then I need to pay RM 60." (ID 30)

Legal Citizenship Status

1. Fear of the Need to Produce a Legal Identification Document

Only a few undocumented migrants were afraid of going to the clinic for fear of being asked to produce their legal documents. However, the majority of them say that despite being asked for documentation, they are treated like other people in the clinic and there was no discrimination in the services provided to them by the healthcare providers. Even though the majority of the caregivers deliver their children in a hospital, their children do not have any documentation (birth certificate). This is due to their inability to pay the hospital fees; therefore, they are afraid to ask the hospitals for the necessary documents to apply for the birth certificate.

"I am upset because my children do not have

documents. So, I could not bring him to the clinic." (ID 4)

"The clinic staff accepts us even though we do not have a document." (ID 15)

"The clinic staff asks for our legal documents, marriage certificate, etc. But they are still willing to give the vaccine for our children even when we do not have all the documents." (ID 19)

"Initially, we were afraid to go to the clinic, but as the time goes, we got used to it." (ID 30)

"We were once afraid to come to the clinic, that we will not be entertained. But the clinic staff accepts us." (ID 30)

TABLE I
CHARACTERISTICS OF THE RESPONDENTS

ID	Place of Birth	Age	Years Living in Sabah	Occupation	Educational Status	Marital Status	Monthly Family Income (RM)	Number of Children	Children's age Range (d, m, y)	Caregiver's Relationship to the Child
1	Lahad Datu	27	27	None	None	Married*	~ 30-500	5	11 m – 7 y	Mother
2	Labuan	30	10	None	None	Married*	Unsure	6	3 y – 13 y	Mother
3	Semporna	41	41	Security Guard	Secondary	Married*	~1000	5	9 y – 3y	Father
4	Philippine	41	20	None	Primary	Married*	500-800	4	5 m – 11 y	Mother
5	Kota Kinabalu	29	29	None	Primary	Married*	~20-500	3	15 d – 5 y	Mother
6	Kota Kinabalu	24	24	None	None	Married*	~10-300	3	4 m – 6 y	Mother
7	Kudat	23	23	None	None	Married*	900	2	2 m – 3 y	Mother
8	Sandakan	25	25	None	None	Married*	~1000	1 + (1 died)	2 y	Mother
9	Kota Kinabalu	25	25	None	Secondary	Separated	Unsure (supported by parents)	1	6 m	Mother
10	Kota Kinabalu	36	Unsure (went back to the Philippines for primary education then came back to Sabah)	Cashier	Secondary	Married*	~2000	5	6 d – 14 y	Mother
11	Sandakan	23	23	None	Primary	Married*	~1000-~2000	1	1 m	Mother
12	Philippine	55	50	None	None	Married*	Unsure	4	2 y – 13 y	Grandmother
13	Kota Kinabalu	26	26	None	None	Married*	Unsure	3	8 m – 5 y	Mother
14	Semporna	26	26	None	Secondary	Married*	~1000	4	2 m – 7 y	Mother
15	Philippine	30	2	None	None	Married*	~ 0-50	3	6 d – 10 y	Mother
16	Semporna	20	20	None	None	Married*	~1000	1	1 y	Mother
17	Tawau	25	25	None	Primary	Married*	~1600	1	1 y	Mother
18	Kota Kinabalu	32	32	None	None	Married*	~1800	5	7 m – 12 y	Mother
19	Philippine	30	7	None	None	Married*	~1000	2	7 m – 5 y	Mother
20	Philippine	40	Could not recall when she came to Sabah	None	None	Separated	~ 0-50	3	1 y – 7 y	Mother
21	Sandakan	25	10 (born in Sandakan then went back to the Philippines, came back at age of 15 years old)	None	Primary	Married*	~1000	2	1 y – 7 y	Mother
22	Keningau	29	29	None	None	Married*	~1000	3	7 y – 1 y	Mother
23	Labuan	22	2	None	None	Married*	~2000	2	3 m – 2 y	Mother
24	Kota Kinabalu	29	29	None	None	Married*	~900	4	1 y – 7 y	Mother
25	Indonesia	29	2	None	None	Married*	~1000	1	2 y	Mother
26	Kota Kinabalu	21	21	None	Secondary	Married*	~500	1	2 m	Mother
27	Kota Kinabalu	18	18	None	None	Separated	~600 (supported by father)	1	4 m	Mother
28	Kota Marudu	20	20	None	Primary	Married*	~1000	1	1 m	Mother
29	Tenom	41	41	None	None	Married*	Unsure	4	7 d – 10 y	Aunty
30	Pulau Banggi	23	23	None	None	Married*	~1000	3	15 d – 2 y	Mother
31	Kota Kinabalu	23	23	None	Primary	Married*	~1200	3	5 d – 2 y	Mother

* Do not have a legal marriage certificate.

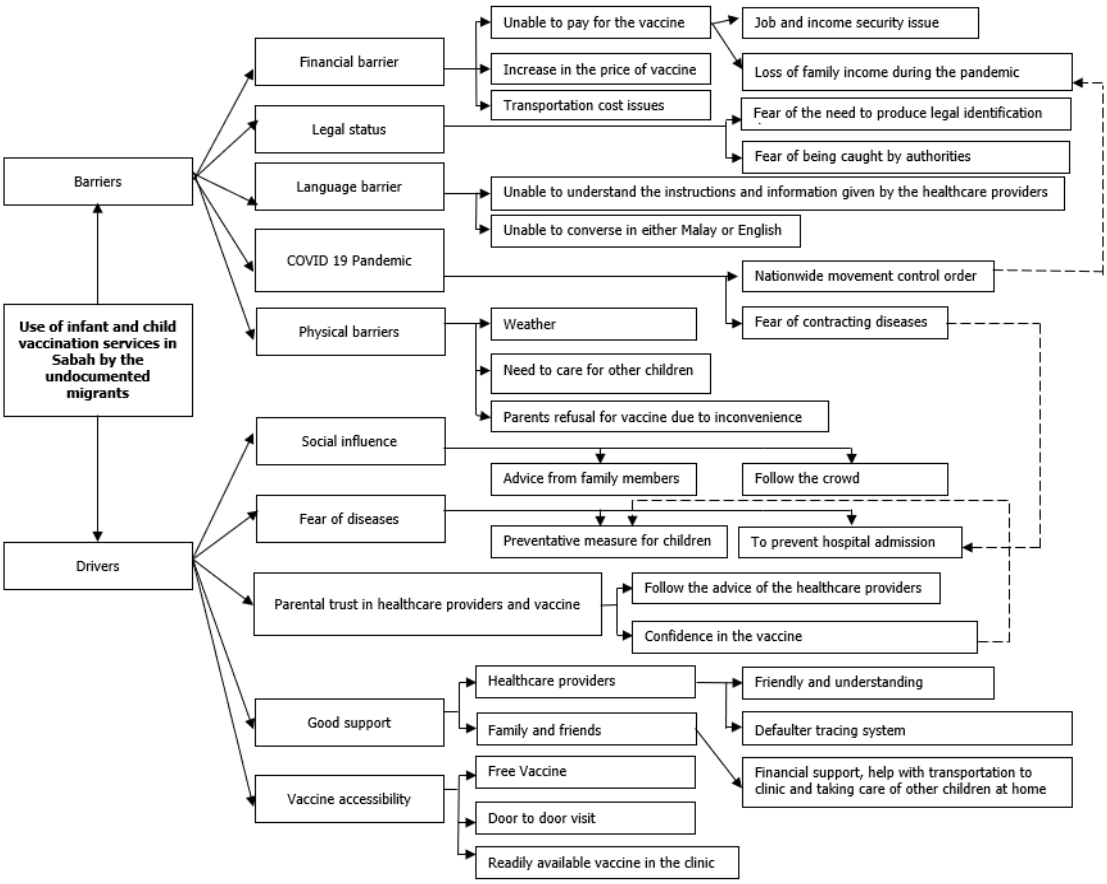

Fig. 1 Mapping of the themes

2. Fear of Being Caught by Authorities

Only a few of the undocumented immigrants fear going out and being caught by the authorities and the police. Those coming from the islands are afraid of being caught by the maritime authorities.

"In the sea, there are marines. So, they will check for documents. If we manage to get through that, then on the mainland, there are police on the roads." (ID 7)

"We fear of being caught." (ID 20)

"We are afraid to be arrested because we have no documents." (ID 24)

Language Barrier

Among those interviewed, only a few did not attend the clinic because they could not understand the information and instructions given. Only one of the caregivers could not converse in either Malay or English. The majority of them could speak the Malay language. The one who could not attend the clinic due to the language barrier says that they always need someone to come along with them to help them communicate with the clinic staff.

"It is hard to deal with clinic staff if there are no friends to follow me. I do not know how to speak Malay." (ID 15)

"I do not quite understand what they (clinic staff) were saying." (ID 20)

COVID-19 Pandemic

1. Nationwide MCO

The respondents are already afraid of going out due to the absence of legal documents. This situation has worsened during the nationwide MCO that started in March 2020, with the increase in police patrols and roadblocks.

"We are afraid to go, especially during the COVID pandemic because we have no documents." (ID 4)

"We fear to go out during the MCO because we have no documents. We are afraid to bring our children as there are many roadblocks." (ID 25)

2. Fear of Contracting Diseases

Several caregivers were afraid to go out of the house to vaccinate their children because of the COVID-19 pandemic. They were afraid that the children might become sick with the disease. Therefore, they chose to delay the appointment.

"We are afraid to go out because of COVID." (ID 3)

"We are afraid of the COVID disease now." (ID 7)

"My husband is afraid of COVID. He told me to wait for the cases to go down. Because we have to take the bus to go to the clinic. It will be difficult if my child gets COVID." (ID 18)

Physical Barriers

1. Weather

Few participants were afraid to go to the clinic, especially during the rainy seasons. This is because they must travel from the islands to the mainland to get to the clinic or use public transport like the bus, and it is very challenging to bring their children through all these.

"At times I am afraid to go by boat, especially when it is raining, as there will be big waves." (ID 7)

"I am afraid to get on the boat because of wind, heavy rain and waves." (ID 30)

"I need to come to the clinic by bus. Because of heavy rain, I once could not bring my child for vaccination." (ID 31)

2. Need to Care for Other Children

Few caregivers said sometimes they could not bring their children as they do not have any assistance to take care of their other kids.

"It is hard for me to come because I had to take care of other children." (ID 14)

"I could only come if there is someone to take care of my other children. Sometimes my aunty will come, or at times my husband must skip his work. "(ID 30)

"Once I had to bring two of my grandkids along with me because there was no one to take care of them. The clinic staff said that I could not bring both of them. But what to do, I had no other choice." (ID 12).

3. Parents Refusal for Vaccine Due to Inconvenience

Despite giving out free vaccines during the Polio campaign in Sabah, which was from December 2019 until November 2020, several undocumented migrants did not complete the four doses. Some parents did not complete all four doses because they refused to take the vaccine or were occupied with their work.

"My child did not want to take the polio vaccine because he said it is not tasty. So, it was difficult to give him the vaccine." (ID 1)

"I am working, and my wife needs to take care of other children as well. So how can I bring my child to vaccinate?" (ID3)

"Only twice my children got the polio vaccine because I had to go to work." (ID 15)

B. Drivers

Five significant drivers were identified through the IDI: social influence, fear of disease, parental trust in healthcare providers and vaccines, good support, and vaccine availability.

Social Influence

1. Advice from Family Members

Most of the caregivers were willing to bring their children for the vaccine due to the advice from someone significant to them, such as mother, siblings, husband, and in-laws.

"My mom advises me to vaccinate my children, because according to her if my children do not get the vaccine, they will fall ill easily." (ID 10)

"My mother-in-law and sister-in-law told me to go clinic." (ID 14)

"My mom said it is important to vaccinate my children for a child." (ID 19)

"My sister told me to bring my children for BCG only." (ID 24)

2. Follow the Crowd

Several of the undocumented migrants said that they bring their children for the vaccination as all the rest of the people and their friends and family members bring their children for vaccination.

"Many people vaccinate their children, right? So, I also bring my child to get the vaccine." (ID 13)

"Everyone does it. So that is why I bring my child for vaccination." (ID 5)

"Everyone in my neighbourhood vaccinates their children." (ID 6)

Fear of Disease

1. Preventative Measure for Children

None of the caregivers were aware of the diseases that the vaccine could prevent; however, they bring their children to be vaccinated to prevent them from becoming ill. The majority of parents are willing to accept long waiting times at the clinic, so long as their children get their vaccination. Despite the risk of being caught by the authorities, the majority of them are willing to take the risk and bring their children for the vaccination, all for the sake of their children's health.

"Money will come and go. However, if my child fell ill and dies, he cannot come back. We can find the money. However, life cannot come back. No matter how expensive it is, I want to give it so that my child will be healthy." (ID 11)

"Although expensive, we still give the vaccine. I want to have a healthy child." (ID 21)

"There are a lot of bacterial infections. I do not want my child to get sick. I just want him to be healthy." (ID 23)

"We are afraid to go out because we have no documents. But I still go to the clinic because I do not want my child to become ill." (ID 18)

"This time, I was caught by the authorities when I was on the way to my clinic appointment. Despite having the fear, I still take my children to the clinic." (ID 22)

2. To Prevent Hospital Admission

Few of them said that they would rather spend money to vaccinate their child since they cannot afford to spend money for treatment and hospitalization if their children fall ill.

"If it is for the benefit of my children, I will bring for vaccination. Because it is expensive to pay the hospital fee if he gets sick." (ID 15)

"If the child is hospitalized, it is even more expensive" (ID19)

"I vaccinate because I am afraid. After all, the hospital

charge is even more expensive." (ID 31)

Parental Trust in Healthcare Providers and Vaccination

1. Follow the Advice of the Healthcare Providers

The healthcare providers have advised the majority of caregivers to bring their children for the vaccination. Therefore, the caregivers believe that the healthcare providers want what is best for their children.

"I vaccinate my children because the doctors always do what is best for my children." (ID 11)

"Prior to my discharge from the hospital, the nurse informed me to bring my child to vaccinate. So, I just follow what they say." (ID 17)

"The vaccination is important because the nurse says so." (ID 19)

"We follow what the doctor says because we want our children to be safe and healthy." (ID 21)

"The nurse said the vaccine is for my children's health. So, I just follow." (ID 27)

2. Confidence in the Vaccine

Most of the participants believe that vaccination can prevent a child from being ill. A few have even stated that those children who have received the vaccination very seldom fall ill compared to the children who have not been vaccinated. All the participants said that they are not afraid of the vaccine's side effects as they believe the benefits outweigh the harm that it might cause.

Good Support

1. Healthcare Providers

a. Friendly and Understanding

The majority of the caregivers who vaccinate their children have many supportive people around them, especially the healthcare workers and the caregiver's family members. They all said that they have had an excellent experience with the healthcare workers and that they were always welcomed despite not having their documents. Even when caregivers were not able to attend their appointment at the clinic because they lacked money, the nurses would call them to find out their reasons for not coming in. When the caregivers explain their situation, the health care workers are said to be very understanding and give them a new appointment date.

"We asked the nurses can we come another day because we do not have money now. They said yes, sure, we understand." (ID 4)

"We do not have a phone. So, we go to the clinic when we have money and not on the appointment date. We will explain the reason, so the nurses understand us and still give us the vaccine." (ID 21)

"Once, because of the rain, I could not bring my child for the appointment. They did scold me for not bringing my child, but when I explained, they said they understand my situation." (ID 31)

b. Defaulter Tracing System

The nurses usually will call caregivers to inquire about the reasons for their failure to turn up to vaccinate their children. The caregivers said that healthcare providers understand their situation and give them new appointment dates to vaccinate their children.

"So, they (nurses) called me asking why I did not come. I said I would come once I have enough money." (ID 7)

"The nurses will give me a new date if I miss my appointment. I will go whenever I have enough money." (ID 12)

"The nurses came looking for me at home. So, we explained that we did not have enough money. They gave another appointment to come over." (ID 30)

2. Family and Friends

Whenever the caregivers have difficulties in coming to the clinic, they rely on family members to support them financially, and help with transportation and taking care of other children. Family members and even employers reportedly lend money so that children can be taken to clinic to be vaccinated.

"My husband had to borrow money from his boss so that I could bring our children for vaccination." (ID 5)

"It is tough for us as we have to borrow from many people like our neighbours so that we could come to the clinic." (ID6)

"My siblings lend me some money if I do not have one. Then I will return once my husband receives his salary." (ID 31)

Vaccine Accessibility

1. Free Vaccine

Caretakers in the detention centre were willing to vaccinate their children throughout their stay as the vaccine is given free to them. During the vaccination campaign, most caretakers took their children to receive the OPV vaccine either at the clinic or at their place of living.

2. Door-to-Door Visit

Few participants said that the healthcare providers would come to provide vaccination services if the undocumented migrants did not come for the vaccination, especially during the COVID-19 pandemic. For those who completed the four doses of the polio vaccine during the vaccination campaign, either they received all four doses when the nurses visited their homes or initially, they received half of the dose at the clinic and the other half at home.

3. A Readily Available Vaccine in the Clinic

Few participants said their healthcare providers would ask them why they did not come to an appointment. In this case, a new appointment is given to the caregivers by the healthcare providers via the phone. The majority of the caretakers said that the vaccine is still given to their children even though they go on a different date. Only a few said that they were told to come on the date given for vaccination.

Most of the caregivers expressed concern that the current situation could be improved by reducing the vaccine's price.

They want the price to be reduced to the level it was before the implementation of the new policy for payment in 2015.

IV. Discussion

The undocumented migrant children's barriers towards childhood immunization are more complicated than the average population. The main problem that the caregivers have is the financial barrier and affordability of the vaccine. A study has proved that a healthcare service fee is a barrier to access healthcare facilities [17]. According to a study that was done in Malaysia, healthcare services are often inaccessible to migrant workers. The reason for this is due to affordability and financial constraints [18]. Vaccination for children up to 15 years old is free for Malaysians and non-Malaysians under the National Immunization program until 2014 [19]. However, in 2015, the non-Malaysians had to pay a minimal fee for the vaccination [20]. Over the years, an increase in the vaccination fee has placed an extra financial burden on undocumented migrants wanting to vaccinate their children. Given the lack of financial stability among undocumented migrants, they cannot afford to bring their children to health clinics for immunization.

According to [11], charging this vulnerable group is not cost-effective. Studies proved that excluding undocumented migrants from primary preventive programs can lead to high hospital care expenditure [21], [22]. Besides that, it involves many other costs as it puts the host population at risk [21]. A perfect example was when the polio outbreak occurred in Sabah; a massive polio immunization campaign was launched in Sabah, targeting all children less than 13 years of age, including undocumented migrants, regardless of their vaccination status. Four doses of the oral polio vaccine (OPV) were administered to children below the age of 13 years [23]. The Ministry of Health Malaysia would have spent more than the usual cost of the childhood vaccination since the giving of OPV was stopped in 2016 in Malaysia [19].

A study among the undocumented children in Denmark showed that most (58.4%) of the children who visit the charity health clinics were due to infectious diseases [24]. It highlights the need for immunization services for undocumented migrants. Vaccination is vital for children's health and is the most cost-effective way of preventing many diseases; therefore, vaccines must be given out free or at an affordable price regardless of the children's nationality. Sweden, for example, has given the privilege of health and dental health to undocumented children as resident children due to their vulnerability and the threat of the spread of VPDs [10]. A study has shown that investment in vaccines is the best, with a rate of return of $16.00 for every $1.00 invested [21].

Immigrants and globalization had caused to immunity gap and sub-optimal vaccination coverage in various countries. Therefore, many countries are making efforts to increase vaccine coverage among migrants. For example, Thailand introduced Health Insurance Card Scheme in 2004 for undocumented migrants in Thailand, and the card came at a very nominal fee [25]. Canada provides tuberculosis, polio, MMR, DTP, varicella, and hepatitis vaccination for migrants for free [26]. Malaysia too can adopt this policy by giving priority vaccination for free for migrant children, especially the diseases targeted for elimination, such as measles, polio, and tuberculosis. Besides these efforts, it is essential to involve the non-governmental organization in delivering the vaccines to the migrants [24], [27] as undocumented migrants may be more comfortable dealing with NGOs instead of government health facilities.

According to the Ministry of Health, Malaysia, the treatment cost for any VPDs is high [20]. Therefore, the respondents are willing to take the risk of going to the clinic to take the vaccine despite being caught by the authorities. They do not want their children to fall ill as they could not afford to pay for the hospital fee; however, undocumented migrants are not charged during healthcare outreach activities at immigration detentions and during an outbreak [28], [29]. That is why the caregivers at the immigration detention centres were willing to vaccinate their children because it is given for free.

Undocumented migrants' children face many other structural barriers to access health, such as fear of being caught by authorities. According to the Immigration Act 1959/63 (Act 155), any person without legal documentation cannot stay in Malaysia and are subject to immediate deportation [30]. A study among the undocumented migrants in Sabah showed that children are afraid to leave their homes for fear of being caught by the authorities [31]. Due to this Act, some undocumented migrants refuse to get childhood immunization for their children due to the fear of being asked for passports and other documents such as a marriage certificate at healthcare facilities. This is because all hospitals and health clinics must report to the authorities any undocumented migrants who visit their facilities [28].

WHO has reported that the COVID-19 pandemic has disrupted immunization programs due to movement restrictions, fear of getting COVID-19, transportation interruptions, and economic hardships [32]. This finding was also shown in our study as well. The caregivers are afraid to go to the clinics as there have been many roadblocks set up during the period of MCO. Furthermore, during COVID-19 pandemic, many caregivers have lost their sources of income. Due to this, they are unable to pay for the clinic registration fees and vaccines. Even in the United States, immunization coverage is said to have declined in 2020 to levels below those recorded 25 years ago [33]. A recent study showed that more than 60% of parents had rescheduled their children's vaccination dates due to the fear of COVID-19 infection [34]. During the COVID-19 pandemic, clinic outpatient visits declined, leading to a decline in childhood immunization rates [35].

Parental trust in healthcare workers and vaccination motivates undocumented migrants to bring their children for vaccination. Besides that, they also want the child to be free of illness. Therefore, undocumented migrants bring their children for vaccination despite having serious financial constraints. A qualitative study in India found two primary motivators for

immunization uptake: fear of contracting VPDs and parental trust in health care professionals and the vaccines [36]. A study to assess the uptake of vaccination against respiratory infections in Arabian Gulf countries showed that doctor's recommendations, the perception of having low immunity, and believing the vaccine is effective were the main reasons for uptake of vaccines [37]. An important aspect that influences a caregiver's decision to have their children vaccinated is the advice and opinion of healthcare professionals [38]-[41]. This study has also shown the importance of being empathetic towards undocumented migrants. The healthcare workers in the clinic were willing to listen to the undocumented migrant's problems and concerns and reschedule the appointments to accommodate the caregivers' needs. This is important to ensure that the healthcare workers gain the caregiver's confidence to vaccinate their children.

We all need to understand better the reasons for addressing immunization inequities and reach marginalized populations with what they need. Studies about undocumented children are very limited. Available research among these children shows that they are vulnerable to psychological problems, have worse living circumstances, and face more barriers to access health care than children who have legal documents [42]. A study in Thailand showed that school-based immunization programs for migrant children improved the timely administration of vaccines [43]. However, it is challenging to implement in Sabah since many of the children of undocumented migrants do not attend school. Socioeconomic status, including education, occupation, and household income, plays a crucial role in determining access to immunization. Social inequalities lead to health inequalities [44]. Understanding the patient factors that determine vaccination intention is crucial to delivering a successful vaccination programme. This research provides a direction to understand the multifactorial barrier undocumented migrants face to bring their children for vaccination. Immunization is a shared responsibility by policymakers, healthcare service providers, and the community. Therefore, the barriers should be addressed from each point of the participants in the process. Advocacy, research, and engagement with national and local policymakers are ways to attain the most excellent health potential for these populations and, at the same time to protect our people.

The limitation of the study was the enforced MCO issued during the study period. Respondents were only obtained from clinics, hospitals, and detention centres. Respondents could not be interviewed in their homes and communities as the COVID-19 pandemic was still ongoing.

V. Conclusion

This study identified five significant barriers and drivers preventing childhood immunization among undocumented migrants in Malaysia. Even though current Malaysian health policy and practices do not restrict or limit undocumented immigrants from accessing vaccination services, undocumented children cannot get preventive care, especially primary childhood immunization, mainly due to the imposed fee. It is crucial to have a vaccination program that targets every child, regardless of their background, to control VPDs in Sabah. Therefore, it is necessary to address all these barriers and drivers to increase the immunization uptake among undocumented migrant children to protect our community while achieving Universal Health Coverage (UHC) and Sustainable Development Goals (SDGs).

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