

INFORMED WILLINGNESS TO PAY FOR RESPIRATORY SYNCYTIAL VIRUS (RSV) VACCINATION AMONG PREGNANT WOMEN RESIDING IN TRANG PROVINCE

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ABSTRACT

Respiratory syncytial virus (RSV) is a negative-sense, single-stranded RNA virus that is a common cause of respiratory hospitalization among infants. The RSVpreF (Abrysvo) vaccine is given to pregnant women between 24 and 36 weeks of gestation to provide passive immunity to their infants. The objective of this study is to describe the informed willingness to pay for RSV vaccination among pregnant women residing in Trang Province, Thailand. The investigators conducted a hospital-based cross-sectional study at three public hospitals in Trang Province, southern Thailand: one provincial hospital and two district hospitals. The investigators collected data using a face-to-face structured interview questionnaire delivered via the KoboToolbox platform and analyzed data using descriptive statistics. A total of 96 pregnant women agreed to participate in our study (n = 96 participants). All participants were female, with a median age of 29 years, and about a quarter of the participants were Muslim. One-third of the participants reported that they would be willing to pay between 1,000 THB and 1,999 THB to receive RSV vaccination, and the median amount was also in the 1,000 THB to 1,999 THB range. This was one of the first studies on willingness to pay for RSV vaccination in Trang Province. However, limitations regarding the cross-sectional study design, limited statistical power, and information biases should be considered in the interpretation of our study findings.

Keywords: Willingness-to-Pay, Respiratory Syncytial Virus, Vaccination, Pregnancy

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INTRODUCTION

Respiratory syncytial virus (RSV) is a negative-sense, single-stranded RNA virus that is a common cause of respiratory hospitalization among infants. RSV accounts for up to 64 million respiratory illnesses worldwide each year (NIAID, 2022), including 33 million cases of acute lower respiratory tract infection (LRTI) among children under 5 years of age (Rago et al., 2024). RSV infection can be prevented by avoiding contact with infected individuals, airborne precautions, and the RSV vaccine.

RSV vaccines have been approved in the United States by the US FDA in 2024. The RSVpreF (Abrysvo) vaccine is given to pregnant women between 24 and 36 weeks of gestation to provide passive immunity to their infants. It is 81.8% effective in preventing severe RSV-associated LRTI in infants up to 90 days (Kampmann Beate et al., 2023). In Thailand, the vaccine has not been considered for inclusion in the National List of Essential Medicines. Inclusion on the list requires empirical evidence on potential uptake and willingness-to-pay for the vaccine, in order to weigh potential waste against the cost of the vaccine. Studies pertaining to willingness-to-pay for the vaccine that addresses this important knowledge gap and provides potentially important information to stakeholders in infectious diseases. The objective of this study is to describe the informed willingness to pay for RSV vaccination among pregnant women residing in Trang Province, Thailand.

LITERATURE REVIEWS

Numerous studies have been conducted on other settings on the health economic of RSV vaccines and vaccines for other diseases. A study in Hong Kong on the effectiveness of strategies to use Nirsevimab to prevent RSV among infants showed that the incremental cost-effectiveness ratio (ICER) was below the willingness-to-pay threshold, making the Nirsevimab strategies cost-effective (Wang et al., 2025). Similar findings were found in Norway (Værnø et al., 2025), Spain (Gil-Prieto et al., 2025), and Italy (Polistena et al., 2025). However, these studies focus on the strategy of administering the vaccine to infants directly. An alternative strategy is to vaccinate pregnant women in order to achieve passive immunization of the fetus, i.e., transplacental transfer of maternal RSV-neutralizing antibodies (Suryadevara, 2024) which remain after birth in the critical perinatal period and the first year of life. Previous studies show that RSV prevention strategies, either monoclonal antibodies for infants or maternal vaccination, are usually cost-effective in high-income countries. However, there is a lack of studies from middle-income settings and limited evidence on pregnant women's informed willingness to pay for RSV vaccination. In addition, setting-specific data are needed by policymakers to fully account for the local socioeconomic contexts regarding willingness to pay. These knowledge gaps highlight the need for context-specific economic and preference data, such as the present study of informed willingness to pay for RSV vaccination among pregnant women residing in Trang Province.

RESEARCH METHODOLOGY

Study Design and Setting

The investigators conducted a hospital-based cross-sectional study at three public hospitals in Trang Province, southern Thailand: one provincial hospital and two district hospitals.

Population & Sample

The target population for this study included pregnant women residing in Trang Province. The study population included pregnant women attending antenatal care at the mentioned health facilities on the days of data collection. Women eligible for this study were those who were: 1) 18 years of age or older; 2) attending antenatal care service at one of the study hospitals, and; 3) able to understand written and spoken Thai language. The investigators considered women who had physical, mental, or cognitive impairments to be ineligible to participate in the study.

The investigators performed sample size calculation based on the findings of a previous study in Bangladesh (Hossain et al., 2025), where 51.6% of the participants were willing to pay for a newly-developed COVID-19 vaccine, and assumed the same level of willingness to pay for the RSV vaccine among the participants ($p = 0.516$), at 95% confidence and an arbitrary 10% margin of error. Thus, based on the following formula for the estimation of proportion:

$$n = \frac{Z_{\alpha/2}^2 \times p \times (1 - p)}{\delta^2}$$

Where

n = The sample size

p = The estimated proportion

$Z_{\alpha/2}$ = Z value for α level of significance

δ = The allowable margin of error

Thus, $p = 0.516$, $Z = 1.96$; and $\delta = 0.10$. Using the R statistical environment and the *epicalc* package, the investigators estimated that they would need to interview 96 participants. The investigators then assumed that 10% of the potential participants would refuse to participate or provide incomplete information, and adjusted the sample size to 107 pregnant women. However, if the refusal to participate was lower than expected and the investigators could track when the sample size reached the number required according to the initial sample size calculation, then data collection would stop upon reaching the required sample size ($n = 96$ participants).

Study Variables and Data Collection

The investigators collected data by face-to-face interviews using a smartphone-based face-to-face structured interview questionnaire. The investigators used the KoboToolbox platform to host the study instruments. All interviews were conducted in the Thai language. The operational definitions of the study variables were as follows:

Informed willingness to pay for the RSV vaccine

The variable refers to the maximum amount of payment that the participant was willing to make to get vaccinated against RSV. The investigators showed each participant a video presentation of about 10 minutes in length to provide background information about RSV and the RSV vaccine, and allowed time for the participants to ask questions about the vaccine. The investigators then asked questions using a bidding method. Participants were asked whether they would be willing to pay 500 THB for the vaccine (i.e., the starting bid value). If the participant provided an affirmative response, the price would double in the next question. If the participant provided a negative response, the price would be halved in the next question. The process was repeated through 3 iterations before the participant was asked about the maximum vaccine price that the participant was willing to pay.

Demographic and socioeconomic characteristics

The investigators also asked the participants about their general demographic and socioeconomic characteristics using the same questions as those used in a previously conducted community-based cross-sectional study in Trang Province (Wichaidit et al., 2025).

Data Collection Procedures

The investigators contacted the Trang Provincial Public Health Office to request permission to conduct the study, as well as assistance in identifying potential study locations. A total of three hospitals were identified and became the study sites. The investigators then organized a training session for local health workers and village health volunteers to be our data collectors. Training included briefings on research ethics, study protocols, and the study instrument. The investigators then organized table-top exercise sessions for the enumerators to practice the interview. To accommodate the social dynamics, the investigators ensured that all enumerators were women. Data collection was done in January 2026. The investigators presented themselves to the healthcare staff at the study hospital and requested assistance in contacting

pregnant women who were waiting to receive antenatal care. The enumerators introduced themselves, provided information about the study according to the Participant Information Sheet, and asked for written informed consent (with possible opt-out of providing personally-identifiable information). Before data collection, the enumerators invited the participants to watch the informative video about RSV and RSV vaccines (as previously described) and answered questions regarding RSV and the vaccine, then conducted the study interview. At the end of each interview session, the enumerator provided each participant with a gift valued at 100 THB, checked with the local healthcare staff regarding the availability of additional eligible participants, and repeated the process until the end of the antenatal care clinic session or the exhaustion of the study documents.

Data Management

The data collectors did not enter any personally identifiable information into the KoboToolbox platform/data collection system to ensure confidentiality of the study participants. A member of the investigation team served as the data manager and performed regular quality checks to identify and address potential data-related issues during the data collection period. The investigation team then performed routine data cleaning and exported the clean data set for statistical analyses.

Data Analysis

To describe informed willingness pay for RSV vaccination among pregnant women residing in Trang Province, we used descriptive statistics to summarize continuous variables as mean $\pm$ standard deviation (SD) or median with interquartile range (IQR), and we summarized categorical variables as frequencies and percentages.

Human Research Ethics

We received ethical approval for the study from the Human Research Ethics Unit (HREU), Faculty of Medicine, Prince of Songkla University (REC.68-574-18-2).

RESEARCH RESULTS

A total of 96 pregnant women agreed to participate in our study ($n = 96$ participants). All participants were female with a median age of 29 years (Table 1), and about a quarter of the participants were Muslim. The majority of the participants had completed secondary education or higher and earned more than 10,000 Thai Baht per month. However, only one-third reported that they had adequate cash to cover an emergency expense of 5,000 Thai Baht.

Table 1 Characteristics of the study participants ($n = 96$ participants)

Characteristic	Frequency (%) or Mean $\pm$ SD
Age in years; median (Q1, Q3)	29 (23, 33)
Religion	
Islam	23 (24.0%)
Buddhism	73 (76.0%)
Highest level of education completed	
Primary school	19 (19.8%)
Junior high school	23 (24.0%)
High school	21 (21.9%)
Vocational certificate	7 (7.3%)
Associate's degree or higher	25 (26.0%)
Others	1 (1.0%)
Personal Monthly Income	
No more than 5,000 THB	8 (8.3%)
5,001 to 10,000 THB	30 (31.2%)
10,001 to 20,000 THB	35 (36.5%)

Characteristic	Frequency (%) or Mean $\pm$ SD
More than 20,000 THB	23 (24.0%)
Financial liquidity: Able to cover emergency expenses worth 5,000 THB in cash	30 (31.2%)

With regard to willingness to pay for RSV vaccines (Table 2), one-third of the participants reported that they would be willing to pay between 1,000 THB and 1,999 THB to receive the RSV vaccination. One-fifth of the participants reported willingness to pay more than 2,000 THB to receive the vaccine. Thus, the median amount was also in the 1,000 THB to 1,999 THB range.

Table 2 Maximum willingness to pay for maternal RSV vaccination among the study participants (n = 96 participants)

Amount	Frequency (%)
Willing to pay 2000 THB or higher	19 (19.8%)
Willing to pay between 1000 THB and 1999 THB	33 (34.4%)
Willing to pay between 750 THB and 999 THB	13 (13.5%)
Willing to pay between 500 THB and 749 THB	17 (17.7%)
Willing to pay between 250 THB and 374 THB	6 (6.2%)
Willing to pay between 125 THB and 249 THB	1 (1%)
Willing to pay 124 THB or less	4 (4.2%)
Incomplete information or refused to answer	3 (3.1%)

DISCUSSION AND CONCLUSION

In this hospital-based cross-sectional study, we described the informed willingness to pay for RSV vaccination among pregnant women who visited three government hospitals in Trang Province. The findings offer potentially useful basic information for stakeholders, but a number of issues also need to be considered in their interpretation.

Although we collected data from only three hospitals from Trang Province, the distribution of the population by religion mirrors that of southern Thailand, and the liquidity (or lack thereof) mirrors that of the general Thai population (Wichaidit et al., 2022). These distributions suggest that the socioeconomic characteristics of the study participants were somewhat similar to those of the general population in southern Thailand and could reduce concerns regarding generalizability to an extent.

One relatively unique contribution of this study to the body of the literature on RSV vaccination was the setting: previous studies on this subject matter were conducted in high-income countries such as Norway (Værnø et al., 2025), Spain (Gil-Prieto et al., 2025), and Italy (Polistena et al., 2025). The study in China (Wang et al., 2025), a middle-income country, was conducted in Shanghai, China's largest megacity. Our study shows the distribution of the willingness to pay for the same vaccine in provincial Thailand.

The median willingness to pay for RSV vaccination among pregnant women was in the 1,000 THB to 1,999 THB range, and only one-fifth of our participants were willing to pay more than 2,000 THB. These levels were considerably lower than the current out-of-pocket price of vaccination (Jab and Go Clinic, 2025). However, stakeholders can take this information into consideration when designing programs in which pregnant women can opt in and make a co-payment for the vaccine. Nonetheless, as our data collectors were health professionals conducting research interviews in routine clinical settings, the possibility of response acquiescence and self-serving or social desirability biases (and thus the overestimated willingness to pay) could not be precluded from our study findings. An additional point of consideration is that we started the bidding price at 500 THB, which was very low compared

to the price of the vaccine. In marketing, offering low prices can induce customers to approach purchases with a budget goal, which might have not been present had the offers started at a higher level. This phenomenon is known as the anchoring effect (Tanford et al., 2019), and our approach might have introduced an anchoring bias. Future studies should consider the following measures to reduce such potential occurrences: 1) program the skip patterns into the online questionnaire; 2) ask the participants to self-administer the online questionnaire; 3) consider removing the bidding questions and directly ask for the maximum willingness to pay; 4) change the study setting to help reduce information biases; 5) adding a post-valuation question that assessed the participants' certainty, which can help reduce response uncertainty and anchoring (Bobinac, 2019).

This was one of the first studies on willingness to pay for RSV vaccination in Trang Province. However, a number of limitations should be considered in the interpretation of the study findings. Firstly, data were collected only at a single point in time among pregnant women at various gestational ages, whereas attitudes toward expenses related to the health of the mother and the infant could change over time and under different circumstances. Future studies should consider longitudinal designs and hypothetical scenarios to capture these variations to a fuller extent. Secondly, we only collected data from 96 participants. Thus, the sample size and statistical power of this study were limited. Thirdly, we collected data using face-to-face interviews in a setting with constrained time and space, thus the possibility of information biases could not be precluded from our study findings.

In conclusion, in this hospital-based cross-sectional study, we described the willingness to pay for RSV vaccination among 96 pregnant women who attended antenatal care at public hospitals in Trang Province. We found that slightly more than half of the participants were willing to pay 1,000 THB or higher, and slightly less than half were willing to pay less than 1,000 THB. The maximum willingness to pay of our participants was much lower than the actual price of the vaccine, an important information that should be considered by stakeholders in health economics and health policy. However, limitations regarding study design, limited statistical power, and information biases should be considered as caveats in the interpretation of the study findings.

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Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

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