RESEARCH PAPER

Predicting behavioral intentions to children vaccination among Chinese parents: an extended TPB model

Min Zhou ^{a,b,c}, Lindu Zhao ^b, Nan Kong^c, Kathryn S. Campy ^d, Song Wang^a, and Shujuan Qu ^e

^aCollege of Business Administration, Hunan University of Commerce, Changsha, P. R. China; ^bSchool of Economics and Management, Southeast University, Nanjing, P. R. China; ^cWeldon School of Biomedical Engineering, Purdue University, West Lafayette, USA; ^dCenter for Public Health Initiatives, University of Pennsylvania, Philadelphia, PA, USA; ^eDepartment of Pediatrics Clinic, The Third Xiangya Hospital of Central South University, Changsha, P. R. China

ABSTRACT

Parental behavioral intentions play a key role in children vaccination. The present study looks at how parental expectations for the vaccination influence their attitudes and behavioral intentions toward children's immunization. The theoretical model is developed on TPB model and empirically tested with sample data from 380 children aged 0–7 years in mainland China. The structural equation modeling and multi-group analysis were used in the model to demonstrate the impact of the vaccination services quality, vaccination promotions and public opinions on attitudes and vaccination behavioral intention. Results support the study's hypotheses and indicate that Vaccination Services Quality (VSQ), Vaccination Promotions (VAP) and Public Opinions (PUO) have positive effects on Attitudes (ATT) and Vaccination Behavioral Intention (VAI), VSQ has the strongest standardized path (.594) while PUO has the least influence (.131), and Attitude is complete mediation in all paths. Attitude is key factor that determine the parental behavioral intentions, and the internal perception comes from the vaccination services quality and the external influence comes from the social environment affect the parental attitude. Governments should implement effective policies and improve vaccination services quantity to eliminate parental misunderstandings.

ARTICLE HISTORY

Received 9 March 2018
Revised 29 May 2018
Accepted 20 June 2018

KEYWORDS

Vaccination services quality; public opinions; vaccination attitudes; China

Introduction

Immunization protects children from many infectious diseases and reduces potential long-lasting consequences such as asthma, pulmonary heart disease and chronic bronchitis.¹ According to World Health Organization, immunization has prevented 2 to 3 million deaths each year.² However, despite of often-time strong evidence on the efficacy of immunization, some of the world population still does not receive necessary immunization, including many children (e.g., 19.4 million children did not receive BCG and DPT in the same WHO report as above).² Different from resource-deprived countries where the major challenge on not receiving vaccination is lack of necessary healthcare system and infrastructure, in industrialized countries, vaccination is provided on a voluntary basis and thus not having immunization is usually due to the negligence and ignorance.

Many industrialized countries have worked actively to promote immunization among children. In China, child immunization was taken as a suggested requirement for primary school registration, including more than a dozen vaccines such as HBV, MR, BCG, OPV, DPT, MM.³ In addition, the vaccination plan was developed by Advisory Committee on Immunization Practices (ACIP) and Centers for Disease Control and Prevention (CDC) in the United States, the Joint

Committee of Vaccination and Immunization has established in UK to enhance Vaccination rate.^{1,4,5} Despite that child immunization is cheap and easily accessible to many families in China, there is still a sizeable portion of the child population not receiving necessary vaccines. Central to the success on full coverage of immunization is rooted at modifying how their parents think about the efficacy of the vaccines and the need for immunization, i.e., parental behavior intention.^{6,7}

Previous studies have identified potential barriers to increasing the child's immunization rates, including: vaccination costs, vaccine knowledge or misconceptions, distance and waiting time for vaccination, and vaccine acceptance among children and parents.^{7–10} Strategies have been proposed to reduce these barriers, including reducing the family's vaccination expenditures, enhancing parents' knowledge and attitudes towards children's vaccination, and eliminating vaccine allergies.^{8,11} Solutions also include addressing parents' concerns about vaccines and providing high-quality vaccination services at school or community hospitals.^{2,3,8}

Research shows that parental acceptance and attitudes are important determinants of children immunization. Regarding influenza vaccination, studies suggest that parents' refusal to vaccinate children is mainly due to perceived barriers, including suspicion of validity and the fear of possible adverse events.¹⁰ The main reasons affecting the adolescent girls'

HPV vaccination are the parents' low knowledge of HPV and the perception that this vaccination leads to inappropriate sexual behavior.¹² In particular, parental misconceptions about the MMR vaccine led to the British child's vaccination rate is less than 90%.¹³ Studies have shown that for children's Haemophilus influenzae vaccination, parents' perceived usefulness and safety are important influencing factors regarding the child's infection of the disease.⁹ There is limited information on the role of parental attitudes in influencing children's vaccination, especially the combined effects of multiple psychological factors. However, decision-making psychology model has been successfully applied to lose weight and quit smoking among young people.^{14,15}

This study aims to describe parents' behavioral intentions for children vaccination by a modified TPB (Theory of Planned Behavior) model. Based on the empirical analysis, the survey served as a structural equations analysis of multiple psychological factors for the parents residing in mainland China: (1) parental perceptions of children's immunization services, (2) reasons for accepting or intending children to receive recommended vaccines, (3) the interactive effects of multiple psychological factors (4) the validity of the extended Theory of Planned Behavior (TPB) model.

Result

Sample descriptive

The demographic data for the participants are presented in Table 1. The number of girls surveyed in this study was less than that of boys, which was more evidently among the survey data from Community Clinics. Most of the participants were under 6 months 226 (59.47%). Most of the parents' marital status was Married 281 (73.95%) while 99 (26.05%) of the participants were in divorce. Comparing the educational level of parents, the data from community clinics is significantly lower than that of pediatric hospitals. In addition, the average education level of all respondents is higher than the national average level. It is noteworthy that there are many universities near participating hospitals, and parents of children who come to these hospitals for vaccinations are likely to be university faculty and have a higher degree. The father's age is concentrated in 23-38 years old (80%), and the mother's age is mostly under 35 years old (95%). About income of household, the data from community clinics is significantly different with that of pediatric hospitals. The low-income family (Monthly income of household is below \$1,300) is the main participant in the community clinic survey, accounting for 65.35%; while the middle-income family (Monthly income of household is \$1,300 – \$3,900) is the main population of survey data from pediatric hospitals, accounting for 54.15%. This may be indicating the higher-income parents prefer to trust pediatric hospitals and willing to tolerate longer waiting times for vaccination services.

Reliability and validity

The construct validity, item-total correlations, corrected correlations and item distinctiveness have been examined and the

findings have been listed in Table 2. The smallest value of Cronbach alpha coefficient is the PUO (0.758) and it is greater than the required threshold (0.7). As CFA analysis results, all facets' CR values are greater than 0.75 and AVE values are greater than 0.5, which all meet the statistical requirements for structural reliability. The indicators of model fit are in line with the theoretical requirements: $CHI/DF = 1.175 < 3$, $P\text{-value} = 0.009 < 0.05$, $NFI = 0.922 > 0.9$, $IFI = 0.987 > 0.9$, $RFI = 0.913 > 0.9$, $TLI = 0.986 > 0.9$, $CFI = 0.987 > 0.9$, $GFI = 0.927 > 0.9$, $AGFI = 0.914 > 0.9$, $RMSEA = 0.021 < 0.8$. In general, the observed values show good acceptability, and the relationship between these factors revealed by the theoretical model has been confirmed by the data.

Hypothesis testing and mediation effects

As summarized below, the structural equation model supported positive relationships for four hypotheses (Table 3). Vaccination service quality (H1: $t = 6.563$; $\beta = 0.504$; $p < 0.001$), Vaccination promotions (H2: $t = 4.687$; $\beta = 0.295$; $p < 0.001$), and Public opinions (H3: $t = 3.674$; $\beta = 0.196$; $p < 0.001$) were considered as positive determinants of Attitudes; and Attitudes are positively related to parental behavioral intentions of children vaccination (H4: $t = 10.297$; $\beta = 0.724$; $p < 0.001$). The loading to attitudes of VSQ, VAP and PUO are 0.59, 0.35 and 0.13. In a statistical sense, VSQ is the major influence factors, PUO has the weakest influence. As a psychological perception variable, VSQ has a decisive effect on the ultimate behavioral intentions. PUO is dynamic and instability which maybe lead it become the weakest factor.

Table 4 shows the result of mediation effects analyses. In this study, ATT as a mediator variable between VSQ, VAP, PUO and VAI. Direct pathway from VSQ to VAI is insignificant ($Z = 1.805$, "0" is included in the Bias-Corrected 95% CI and Percentile 95% CI), while indirect pathway is significant ($Z = 5.267$, "0" is not included in the Bias-Corrected 95% CI and Percentile 95% CI). The results indicated that there is a complete mediating effect. Similar results also be observed in the pathway from PUO to VAI. The pathway from VAP to VAI is different from the above two, the direct pathway is significant ($Z = 3.559$, "0" is not included both in the Bias-Corrected 95% CI and Percentile 95% CI), and the indirect pathway is also significant ($Z = 5.351$, "0" is not included both in the Bias-Corrected 95% CI and Percentile 95% CI), so this is a partial mediation effect.

Discussion

To our knowledge this is the first study of parental attitudes toward children vaccination by a modified TPB model. The findings are in line with previous studies and indicate that attitude is the leading factor of behavioral intention.^{16,17} Vaccination promotions and public opinions are the determinant factors that influence parents' behavioral intentions.^{1,9,10,18} However, this study expands on previous work by simultaneously examining parental willingness on children immunization focused both on the investigation and psychological perspective.

Table 1. Demographic profile of participant.

Items	Total	Community Clinics	Pediatric Hospitals
	Total number:380	Total number:127	Total number:253
	- N (N/380)	- N ₁ (N ₁ /127)	- N ₂ (N ₂ /253)
Child gender			
Male	196(51.58%)	69(54.33%)	127(50.20%)
Female	184(48.42%)	58(45.67%)	126(49.80%)
Child age			
Under 6 Months	226(59.47%)	76(59.84%)	150(59.29%)
6–12 Months	97(25.53%)	30(23.62%)	67(26.48%)
1–3 Years	40(10.53%)	14(11.02%)	26(10.28%)
Over 3 Years	17(4.47%)	7(5.51%)	10(3.95%)
Married status of parents			
Married	281(73.95%)	94(74.02%)	187(73.91%)
Divorced	99(26.05%)	33(25.98%)	66(26.09%)
Father's education			
High school education and lower	86(22.63%)	50(39.37%)	36(14.23%)
Bachelor degree	236(62.11%)	61(48.03%)	175(69.17%)
Master's degree	41(10.79%)	10(7.87%)	31(12.25%)
Doctor's degree and higher	17(4.47%)	6(4.72%)	11(4.35%)
Mother's education			
High school education and lower	136(35.79%)	57(44.88%)	79(31.23%)
Bachelor degree	191(50.26%)	57(44.88%)	134(52.96%)
Master's degree	40(10.53%)	8(6.30%)	32(12.65%)
Doctor's degree and higher	13(3.42%)	5(3.94%)	8(3.16%)
Father's age			
Under 23	33(8.68%)	10(7.87%)	23(9.09%)
23–28	89(23.42%)	33(25.98%)	56(22.13%)
28–33	97(25.53%)	29(22.83%)	68(26.88%)
33–38	118(31.05%)	42(33.07%)	76(30.04%)
Over 38	43(11.32%)	13(10.24%)	30(11.86%)
Mother's age			
Under 20	82(21.58%)	30(23.62%)	52(20.55%)
20–25	87(22.89%)	31(24.41%)	56(22.13%)
25–30	101(26.58%)	29(22.83%)	72(28.46%)
30–35	91(23.95%)	30(23.62%)	61(24.11%)
Over 35	19(5.00%)	7(5.51%)	12(4.74%)
Monthly income of household			
Below \$1,300 (Low)	166 (43.68%)	83 (65.35%)	83 (32.81%)
\$1,300 – \$3,900 (Middle)	172 (45.26%)	35 (27.56%)	137 (54.15%)
More than \$3,900 (High)	42 (11.05%)	9 (7.09%)	33 (13.04%)

This study empirically examined the determine effects of parental behavioral intentions on children vaccination by a structural equation model. Based on the modified TPB model, a theoretical model with four hypotheses was developed. The vaccination service quality(VSQ) was added in the theoretical model as an internal factor, while vaccination promotions (VAP) and public opinions (PUO) as the external factors. They influence attitude (ATT) together, and ATT determines parental behavioral intentions(VAI) on children vaccination. To verify the theoretical model, a survey was conducted in mainland China and 380 valid data were collected. The survey data have sufficient reliability and validity, the theoretical hypotheses are supported and the mediation effects are significant.

The combined effect of internal and external factors determines parental attitudes and behavioral intentions on children vaccination. Previous studies of parental willingness on children immunization focused on the survey analysis, vaccination policy, social opinion (including opinions from relatives and friends), accessibility of vaccination services and vaccination costs are influential factors,^{1,9,14,19}. More detailed insights are obtained in this study, it is structural interaction rather than a single factor that determine the final behavioral intentions. The internal factors are the vaccination services quality which includes four dimensions: accessibility, safety, reliability and professional. The external influences include two aspects are vaccination promotions and public opinions. From the perspective of influence on attitudes, the path coefficient of VSQ is significantly higher than that of VAP and PUO, indicating that perception from the vaccination service quality is a more important factor. The internal psychological factors are more decisive than the external influence factors, and this further confirms the rationality of integrating the psychological perception factors into the theoretical model.

To improve parents' perception of vaccination services quality, accessibility, safety, reliability and professional are important focuses, this result is consistent with the existing literatures which suggests that vaccine safety, vaccine reliability are the most important influencing factors.^{3,11} The side-

Table 2. Cronbach's alpha and confirmatory factor analysis.

Constructs	Cronbach's Alpha	C.R.	AVE	χ^2	DF	χ^2/DF	GFI	AGFI	RMSEA
ACC	0.893	0.894	0.628	11.538	5	2.308	0.988	0.964	0.059
SAF	0.816	0.822	0.541	3.887	2	1.944	0.995	0.974	0.050
REL	0.861	0.863	0.677	-	-	-	-	-	-
PRO	0.849	0.851	0.589	4.120	2	2.060	0.994	0.972	0.053
VAP	0.816	0.818	0.531	1.271	2	0.636	0.998	0.992	0.000
PUO	0.758	0.759	0.513	-	-	-	-	-	-
ATT	0.849	0.849	0.585	3.387	2	1.694	0.996	0.978	0.043
VAI	0.830	0.842	0.642	-	-	-	-	-	-

Table 3. Hypothesis testing.

Hypotheses	Paths	t	β	Lower	Upper	P	Conclusion
H1	ATT < – VSQ	6.563	.504	.372	.627	< 0.001	Support
H2	ATT < – VAP	4.687	.295	.148	.446	< 0.001	Support
H3	ATT < – PUO	3.674	.196	.083	.313	< 0.001	Support
H4	VAI < – ATT	10.297	.724	.642	.794	< 0.001	Support

2,000 bootstrap samples.

Table 4. Mediating effects.

					Bootstrap				Mackinnon PRODCLIN2		
					Bias-Corrected 95% CI		Percentile 95% CI		95% CI		
Variable	Effects	Estimate	S.E.	Z	lower	upper	lower	upper	lower	upper	Mediation
VAI < – VSQ	Total	0.745	0.097	7.680	0.585	0.977	0.583	0.968	-	-	Complete
	Direct	0.213	0.118	1.805	−0.016	0.444	−0.007	0.454	-	-	
	Indirect	0.532	0.101	5.267	0.353	0.757	0.345	0.742	0.305	0.811	
VAI < – VAP	Total	0.547	0.065	8.415	0.426	0.685	0.426	0.685	-	-	Partial
	Direct	0.242	0.068	3.559	0.112	0.375	0.109	0.370	-	-	
	Indirect	0.305	0.057	5.351	0.208	0.433	0.209	0.434	0.186	0.451	
VAI < – PUO	Total	0.350	0.068	5.147	0.216	0.477	0.223	0.489	-	-	Complete
	Direct	0.041	0.061	0.672	−0.076	0.161	−0.075	0.161	-	-	
	Indirect	0.309	0.055	5.618	0.210	0.431	0.208	0.429	0.188	0.452	

Note: 2,000 bootstrap samples.

effects of vaccine greatly affect parents' perception of safety, thus affecting parental attitudes towards child vaccination. The Chinese government needs to ensure the safety and reliability of vaccines and adopt a standardized and professional vaccination process to gradually ease parents' anxiety. In addition, shorter distances, less waiting time, better environment and more friendly service are also the factors that influence the perception of vaccination services.

In terms of the external factors, vaccination promotions are influenced by vaccination laws, kindergarten admissions policies, reminder from the CDC and hospital health education, and reminder from the CDC is the most important factor. It is worth proposing that even if the vaccination laws and kindergarten admissions policies are mandatory, they are still not the most influential factors. It may be because most of parents are not particularly familiar with these provisions while reminder calls from the CDC just awakened their attention and they will think it has the final impact on his decision. This also confirms the importance of education for citizens after the implementation of law.²⁰ Public opinions include opinions from parents or relatives, from government and social media. The discussion on social media (especially mobile social media such as WeChat, Twitter) becomes an important channel for more and more young people to access information.^{12,21} To improve parental behavioral intentions for child vaccination, the positive influence of social media should not be ignored.

Consistent with prior researched, attitudes are positively related to parental behavioral intentions of children vaccination.^{1,9,10} As mentioned above, the vaccination service quality, public opinions, laws and policies, these internal and external factors will all affect the parent's intention to immunize children. These results further support the TPB, that is, the attitude as an intermediary variable in the model. It might be worth trying to identify the "influencing factors – attitudes – behaviors" chain and analyzing the background of these factors. For future interventions and child immunization practices, providing high-quality vaccination services and guiding positive social opinion will become meaningless if it fails to change parents' attitudes. When formulating laws and policies on child immunization, the government should also pay attention to strengthening the necessary propaganda to change parents' attitudes. By explaining the benefits and safety of child immunization to parents, reducing their anxiety and

gradually improve their attitudes, this is a very effective way. Concerning about the way young parents prefer to obtain information, such as social media and CDC reminds.

Based on the above results, we propose the following management implications. First and foremost, it is important to improve parental attitude on children immunization. Second, as the vaccination service quality is the most important factor in determining parental attitude, the government should invest most of its resources and funding in this area. Third, government should focus on laws and enrollment policies. The timely reminder from CDC is effective and can arouse parents' awareness. Last, the role of all the factors is not isolated, they are interactive. To raise the vaccination rate of children, governments, medical institutions the public should work together to improve influencing factors to strengthen parental behavioral intentions.

The findings in this report are subject to several limitations while provide new possibilities for future research. First, the sample size is small when compared with the China's population. The generality of the conclusions from the model should be treated with caution, and future research should focus on more extensive samples and conduct cross-regional studies in different countries. Future studies may also consider modeling validation of demographic data. Is there any significant difference between the test results of father and mother? This is another interesting question. There has been encouraging progress in the study of structural equation models in recent years. New research methods such as PLS-SEM and Neural Network-SEM should be considered in future research. Despite these limitations, the study provides new theoretical advances and management implications in parental behavioral intentions on children vaccination.

We predict parental behavioral intentions on children vaccination by a modified TPB model. These findings suggest that attitudes are the leading factor of behavioral intentions, while vaccination service quality, vaccination promotions and public opinions influence attitudes together. The government and medical institutions should work together and invest most of its resources and funding in improving the vaccination service quality, developing child immunization laws and policies, advocating positive public opinion. Future studies should focus on more extensive samples and conduct cross-regional studies in different countries, and new research methods should be adopted to rich result dimensions.

Methods

The modified TPB (Theory of Planned Behavior) model was adopted in this study which makes the theory more suitable for the parents' behavioral intentions on children vaccination (see Figure 1). The basic TPB model pays more attention to the impact of external factors on behavioral intentions and ignores the service or product itself.^{16,17} To make up for this deficiency, this study adds the perception of service quality in the theoretical model, which maybe the main contribution to the theoretical literature. Vaccination service quality(VSQ) as an internal factor, vaccination promotions (VAP) and public opinions (PUO) as the external factors affect attitude(ATT) together, and ATT determines parental behavioral intentions (VAI) to children vaccination.^{9,13} Accessibility(ACC), safety (SAF), reliability(REL) and professional (PRO) contributes to VSQ and combine into a second-order construct.^{22–24} The following hypotheses were constructed in the present study:

H1. Vaccination service quality is positively related to parental attitudes of children vaccination.

H2. Vaccination promotions is positively related to parental attitudes of children vaccination.

H3. Public opinions are positively related to parental attitudes of children vaccination.

H4. Attitudes are positively related to parental behavioral intentions of children vaccination.

A questionnaire was developed in the study to assess parental behavioral intentions for children immunization and it was divided into 6 sections, including 30 variables and 8 socio-demographic statistics, all variables were measured by a 7-point Likert scale and listed in Appendix A. The survey was conducted in three cities of mainland China from November 2016 to December 2017, researchers distributed questionnaires to five community clinics and seven pediatric hospitals. The community clinics are in Changsha City (2), Wuhan City (2) and Nanjing City (1), pediatric hospitals are also located in Changsha City (4), Wuhan City (2) and Nanjing City (1). These cities are the capital city of the

provinces in Central China. As the children were told to stay in the waiting room at least 30 minutes after they were completed vaccine injection or medication, so nurses can observe whether children have drug allergies. During this period, the child's parents have spare time to complete the survey form. All surveys were anonymous. Of the 462 questionnaires were distributed, 380 complete and valid questionnaires were collected (valid rate is 82.25%).

Descriptive statistics were used to quantify demographics of the sample by SPSS 22.0. It is worth mentioning that this study includes statistics on household income. According to the "China Modernization Report 2016" issued by the Chinese Academy of Sciences, the monthly income of household divided as follows: low-income families are less than \$1,300, middle-income families are \$1,300 – \$3,900, and high-income families are More than \$3,900.

Data analysis was conducted by Cronbach's alpha, confirmatory factor analysis and structural equation model. Based on the data collected with the scale, firstly the Cronbach's alpha analyses have been conducted for the purpose of determining the consistency of continuous variables and ordered categorical variables, and the acceptable criterion is Cronbach's $\alpha > 0.7$.^{23,25} For the constructs in which Cronbach's α has reached the required value, confirmatory factor analysis (CFA) was performed on the data. If the factor loading is greater than 0.67 that should be considered as excellent, while one should be considered unqualified as it less than 0.45. Average variance extracted (AVE) was used to reflect latent variable interpretation and convergence validity, and the acceptable requirement is that it is greater than 0.5.^{23,25,26} A series of indicators were selected to determine the model fitness, and the acceptable criteria are as follows: $CHI/DF < 3$, $P\text{-value} < 0.05$, $NFI > 0.9$, $IFI > 0.9$, $RFI > 0.9$, $TLI > 0.9$, $CFI > 0.9$, $GFI > 0.9$, $AGFI > 0.9$, $RMSEA < 0.8$.^{14,18,27} The structural equation model was applied to test theoretical hypothesis, Maximum likelihood technique and Bootstrapping were also used.^{18,28} To determine the mediation effects, many articles conduct it by recommendations of Baron & Kenny (1986), but Sobel test has weak statistical power.^{29,30} The best balance between Type I error and statistical power is the test of the joint significance of the two effects, including the effects of interventional variables. Bootstrapping method and Mackinnon PRODCLIN2 were used in this paper to test the mediation effect and distinguish complete mediation or partial mediation.^{18,31}

Figure 1. Theoretical model.

Note: Accessibility(ACC), Safety(SAF), Reliability(REL) And Professional (PRO), Vaccination Service Quality(VSQ), Vaccination Promotions (VAP), Public Opinions (PUO), Attitude(ATT), Behavioral Intentions(VAI).

Disclosure of potential conflicts of interest

No potential conflict of interest was reported by the authors.

Funding

This work was supported by NSFC (National Natural Science Foundation of China) [grant number 71601043, 71671039, 71671040] and 2017 Youth Innovation Driven Project in Hunan University of Commerce [grant number 17QD06].

ORCID

Min Zhou <http://orcid.org/0000-0002-2565-9405>

Lindu Zhao <http://orcid.org/0000-0003-4902-3679>

Kathryn S. Campy <http://orcid.org/0000-0002-7435-8318>

Shujuan Qu <http://orcid.org/0000-0002-4219-0856>

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Appendix A.

Construct		Variables	Measurement Items
Vaccination Service Quality	Accessibility	acc1	The physical distance between my home and vaccination hospital is acceptable.
		acc2	The waiting time of vaccination is acceptable.
		acc3	The reservation is convenient for me.
		acc4	I can easily understand the vaccination process.
		acc5	I will pay child immunization services in senior hospitals.
	Safety	saf1	I believe hospitals have the ability to ensure the safety of vaccine.
		saf2	The possibility of allergy and side-effects is rare.
		saf3	Children maybe experience fever and dizziness after vaccination, which are safe.
		saf4	I believe the hospital can cope with the unexpected situation of vaccinations.
	Reliability	rel1	Vaccination can prevent the spread of epidemics by others.
		rel2	Vaccine is effective in preventing related hospitalizations in vaccinated persons.
		rel3	Vaccination can prevent the further spread of illness to others.
	Professional	pro1	Nurses who provide vaccination services have good theoretical knowledge.
		pro2	Nurses who provide vaccination services have good professional skills.
		pro3	Nurses who provide vaccinations are meticulous and friendly.
		pro4	Children's vaccination services provided by this hospital are very efficient.
Vaccination promotions		vap1	For causes of laws of children health, I will take my child for vaccination.
		vap3	For causes of children's enrollment policy, I will take my child for vaccination.
		vap4	For causes of reminder form China's CDC, I will take my child for vaccination.
		vap5	For causes of health education in hospitals, I will take my child for vaccination.
Public opinions		puo1	Parents and relatives can motivate me to bring children vaccinations.
		puo2	Publicity from the government can motivate me to bring children vaccinations.
		puo3	Discussions on social media can motivate me to bring children vaccinations.
Attitudes		att1	The process of childhood immunization is convenience and enjoyable.
		att3	It is a responsibility of every parent to give their children vaccinations.
		att5	Vaccination is very necessary for children's health.
		att6	I am satisfied with the child vaccination services provided by this hospital.
Vaccination Behavior Intentions		vai1	I will take this hospital as my first choice when my children need vaccination.
		vai2	I will recommend this hospital's child immunization service to friends.
		vai3	I will suggest the necessity of child immunization to others.

Each attribute item is measured on a 7-point Likert scale with 1 = totally disagree to 7 = totally agree.