

A Study on the Communication Behavior About Situation Recognition and Prior Knowledge: Side Effects of Vaccination Based on the Situation Theory

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Abstract

Background/Objectives: This study is conformed to establish an effective public campaign, based on the situation theory. This study is to examine the effect of communication behavior about situation recognitions (problem recognition, constraint recognition, level of involvement) and prior knowledge on safety for side effects on vaccination. **Methods/Statistical Analysis:** An analysis of survey data were collected from a sample of 124 mothers with the infant child, residing in Seoul in Korea. A total of 124 self-reported questionnaires were collected and used in the final analysis. **Findings:** The study examined Situation recognition on issue of virus vaccination side-effect appear to have a partly effect on communication behavior. Second, the results proved that communication behavior can be segmented by based on the level knowledge. The results are to predict the communication behavior of the public for side effects of vaccination issue more specifically and propose an effective communication direction.

Keywords: Constraint Recognition, Level of Involvement, Problem Recognition, Situation Theory, Vaccination

1. Introduction

Vaccination is the most important means as measures for disease prevention. This is the essential national health policy to protect the entire society by not only protecting one individual from various infectious diseases but preventing the dissemination of infectious agents. However, as 8 old people who got a seasonal vaccination against influenza died in a row in October 2009 and 3 elementary and junior high school students. And a girl aged 19 months who got a vaccination against new influenza in November and December, side effects of the vaccination emerged as anxiety among the people. The government said it is not the problem of the vaccine itself but this had a negative impact on the behavior of vaccination subjects¹. Actually, worry about the side effects of vaccination had some impact on the vaccination attitudes and intentions.

²Worry about side effects, worry about pain involved during vaccination, distrust of vaccine and belief that vaccination is not possible if children suffer from other minor illnesses were found to be the main failure factors of vaccination. ³Showed that parents' instability recognition of vaccine due to lack of information on vaccine and distrust of the medical authorities is the main factor affecting their children's vaccination. Through the study results, the efforts to improve the vaccination subjects' understanding of vaccination are required and the top priority of vaccination can be said to not only emphasize the risk of infection but wipe out the negative attitude toward safety and side effects of vaccination.

Thus to solve this problem, it is implied that vaccination media related research and studies for strategy establishment are needed. Although the government agency in charge of vaccination reports newspapers or broadcasting news about vaccination-related policies and

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promotional activities, the people are not aware of it well because the government's promotional activities focus only on mass production of media reports and do not change the people attitude toward vaccination safety and convince the action.

To consider the debate on vaccination side effects, the situation theory of Grunig is useful that theoretical framework can identify the public recognition and communication behaviors for vaccination side effects. The situation theory is actively able to predict the extent of the communication behavior according to the public recognition and it should be segmentation in public. The situational approach, therefore, typically communication or organizations coverage in communication or have been applied to environmental problems, but recently social issues have been expanded. As most people have been increasing shaped the values based on information delivery and information sharing behavior, the social information giving behavior provided through the Internet and mobile technology.

In addition, people have different values, so they determine issues and circumstances by applying standards, personal characteristics such as experience or level of knowledge, psychological orientation, gender. In particular, prior knowledge of the issue is known to directly affect the communication behavior of an individual⁴. By comprehensively examining the level of prior knowledge on the issue in addition to situational recognition, more scientific and sophisticated public classification and understanding will be possible.

2. Literature Review

2.1 Relationship Strategic Objective

Public and communication behavior of the vaccination campaign⁵ argued that in order to carry out an effective public campaign, it is important to analyze campaign subjects by classifying them depending on the public recognition and communication characteristics. ⁶Also stressed that one of essential elements to conduct a successful PR campaign is to find the substantial public. Grunig argued that the public accepts a message through the action after perceiving the situation so if identifying the communication behavior of the public, we can predict how the public perceives the situation and developed situation theory in order to explain when and how to communicate will be effective by confirming and identifying

the strategic objective public the highest associated with and highly affected by current problems and opportunities based on this.

Situation theory is a theory focusing on the issue. That is, the different public is formed around the issue and different types of publics formed like this also show differences in communication behavior. Situation theory defines the public as members of a group who has something in common and is affected by the same problem or issue or act similarly about the problem or issue⁷. Situation can be divided into three independent variables and two dependent variables. Independent variable is problem recognition, constraint recognition and level of involvement. Independent variables are information seeking and information processing. Situation theory assumes that a situation creates the public and need of the public⁸.

A problematic situation forms one or more publics and the number of publics depends on how people affected by the condition perceive the situation. Therefore, independent variables of situation theory can be seen as the perception on the situation.

2.2 Information Giving Behavior

Given that the behavior of individual level is made by the aspect information acquired by individuals themselves, the action of social level is made in terms of provision of information talking about the information with surrounding people not individual information acquisition.

The purpose of Information giving behavior can be divided into two depending on the steps and the initial step is to gather and obtain the information needed to solve the problem and then, to reproduce similar problem recognition and encourage the correct solution⁹. People not only acquire the necessary information personally but interactive behavior with several people in a number of ways via information such as sometimes delivering their experience and opinion voluntarily¹⁰. The interactive behavior is the Information giving behavior of the social dimension and like the information behavior of personal dimension, it is classified into active behavior and passive behavior⁹.

Information forwarding behavior can be regarded as planned and intended information forwarding behavior offering action trying to inform the problem to others and spread a better problem-solving approach and information holders themselves announce¹¹. On the other hand the information sharing behavior voluntarily based on high problem recognition regardless of others' request.

Information giving behavior is the passive information offering behavior and can be considered unplanned action giving information in response only when someone asked specialized knowledge or opinion on the related problem.

Nowadays most studies so far have focused on the individual's action side accepting the given information.

Individuals not only acquire information in order to solve the immediate problem and reduce the uncertainty but affect their attitude formation and decision-making by providing their information to others. With the change of the media environment and overall society, the importance of social and collective aspects of communication behavior sharing and delivering information is increasing day by day. In order to examine the effect of the recognition of side effects on behavior, we derived the following hypothesis and expanded the scope to information sharing and information delivery behavior in order to review communication behavior more deeply.

Hypothesis 1: Situation recognition (problem recognition, constraint recognition, level of involvement) on issue of virus vaccination side-effect will influence communication behavior (information seeking, information processing, information forwarding behavior, information sharing behavior).

- H1-1. Problem recognition, constraint recognition, level of involvement will influence information seeking.
- H1-2. Problem recognition, constraint recognition, level of involvement will influence information processing.
- H1-3. Problem recognition, constraint recognition, level of involvement will influence information forwarding behavior.
- H1-4. Problem recognition, constraint recognition, level of involvement will influence information sharing behavior.

2.3 Prior Knowledge and Communication Behavior

When public faced with a problem situation, they act to solve it or make an optimal decision and form an attitude toward the target based on the information obtained in the process. This leads to direct action relating to the decision-making. Public communication behavior and factors affecting the behavior need to be studied in more detail. Personal factors such as past experience or prior knowledge, ability, level of involvement for the subject

and situational factors including many social factors such as purpose and context affect communication behavior¹².

Despite the same risk, different values and standards are applied depending on the circumstances of an individual accepting the risk. This implies situation theory's framework that problem recognition, constraint recognition, level of involvement by communication behavior varies depending on the public can be applied to risk issues. In addition to applying the assumption of existing research that communication behavior is more active as the involvement is higher and constraint recognition is lower to the vaccination side effect issue, this study examined the effects of individual variables such as experience and knowledge on the issues. Because we expected that as experiencing an issue directly and recognizing of knowing the issue much more, communication behavior of pursuing and processing the related information can be reinforced.

Hypothesis 2: Subjective knowledge on issue of virus vaccination side-effect will influence communication behavior (information seeking, information processing, information forwarding behavior, information sharing behavior).

- H2-1. High subjective knowledge will be significantly more likely to influence information seeking.
- H2-2. High Subjective knowledge will be significantly more likely to influence information processing behavior.
- H2-3. High Subjective knowledge will be significantly more likely to influence information forwarding behavior.
- H2-4. High Subjective knowledge will be significantly more likely to influence information sharing behavior.

3. Methodos and Measures

3.1 Data Collection

The data were collected from a sample of 124 mothers with the infant child, residing in Seoul and metropolitan regions in Korea. A total of 124 self-reported questionnaires were collected and used in the final analysis. Research options include the subject's age, education and work, children number determined by the sampling method (judgement sampling) was performed.

3.2 Measures

Situation Recognition

Problem recognition was used operational definitions by 'the importance of vaccination recognition' and 'the seriousness' from the studies of Reference¹³.

Problem recognition was measured with 3items adapted from the work of Reference¹⁴. Constraint recognition was used 'Restrictions on freedom of behavior' and, 'Restrictions in our efforts to solve the problem' from Reference¹⁵. Constraint recognition was measured with 3items.

Level of involvement was used operational definitions by individual situation and connection the degree to which we were recognition. Level of involvement was measured with 2items adapted from the work of Reference¹⁶. The items were measured with a 7-point Likert scale.

Communication Behavior

Communication behavior is divided into four types information seeking, information processing, information forwarding behavior, information sharing behavior. The information seeking was measured 4items, 'information acquisition efforts', 'interpersonal/popular/with online media', 'information acquisition'. The information processing was measured 5items, 'information acquisition interest', 'in related news attention', 'listening to this conversation', 'information acquisition from online media information/public'¹⁷. The information forwarding behavior was measured 5 items: 'provision of information to those around you', 'online information services', 'preferring participatory dialogue', 'value perception of the information sharing' and 'discussion forum or online'. The information sharing behavior was measured as 3 items, 'other peoples' request for information', 'information upon request advice' and 'online information services'.

Prior Knowledge

Prior knowledge is the important variables to understand Communication behavior of individuals. Prior knowledge was amended to fit the study as subjective knowledge from Reference¹⁸. Six items were measured with a 7-point.

4. Results

4.1 Demographic Profile of Respondents

Among the 124 total respondents, average women age is 35.4s. Her job was analyzed a stay-at-home mom

(84)67.7%, company employee (24)19.4%, technology professionals (4)3.2%, government employees (3)2.4 %, other (2)1.6 %. According to classification of the number of children is multi-child families (75)60.5%, one child is (49) 39.5%.

4.2 The Reliability of the Scale

As shown in the Table 1, the reliability of the scale found before hypothesis testing (problem recognition, constraint recognition, level of involvement, information seeking, information processing, information forwarding behavior, information sharing behavior). The reliability of the scale was sufficient with a Cronbach's α value.

4.3 Hypotheses1

As shown in Table 2, hypothesis 1-1 can be verify significant ($R^2=.272$, $F=16.335$). The result is followed. Constraint recognition ($p<.01$) and involvement ($p<.05$) have a significant impact on the information seeking.

This study needs to determine the relative size of influence on information seeking among problem recognition, constraint recognition, level of involvement. Compared to the size of the standard service factor (β) in multiple regression analysis, the results of analysis are constraint recognition has a value of .288, and level of involvement has a value of .255.

Table 1. The reliability of the scale

variables	classification		items	Cronbach's α
Independent variable	Situation recognition	problem recognition	3	.793
		constraint recognition	3	.583
		involvement	3	.793
	Prior Knowledge	subjective knowledge	6	.968
Dependent variable	Communication behavior	information seeking	4	.882
		information processing	5	.853
		information forwarding behavior	5	.879
		information sharing behavior	3	.838

Table 2. Multiple regression analysis of information seeking

Variables	Non-standardized coefficient		Standardized coefficient	t-value	(Sig.)
	Beta	S.E	β		
problem recognition	.081	.081	.097	1.008	.316
constraint recognition	.314	.102	.288	3.086	.003**
involvement	.222	.089	.255	2.500	.014*
$R^2=.272, F=16.335$					

* $p<.05$, ** $p<.01$

As shown in Table 3, hypothesis 1-2 can be verify significant ($R^2=.477, F=38.338$).

Each factors that measures the relationship between variables for statistical significance results is problem recognition ($p<.01$), involvement ($p<.01$). Compared to the size of the standard service factor (β) in multiple regression analysis, the results of analysis are problem recognition has a value of .477, and level of involvement has a value of .337.

As shown in Table 4, hypothesis 1-3 can be verify significant ($R^2=.208, F=11.738$). This result show that problem recognition ($p<.05$), constraint recognition ($p<.01$) and involvement ($p<.01$) have direct effects on the information forwarding behavior. Hypothesis 1-4 was adopted. Each of Predicting Variables can know about the dependent variables of regression. When we compared to the size of the standard service factor (β) in multiple regression analysis, the result is constraint recognition has a value of .302, and level of involvement has a value of .347.

As shown in Table 5, hypothesis 1-4 can be verify significant ($R^2=.219, F=12.485$). This result show constraint recognition ($p<.01$) and involvement ($p<.05$) have a significant impact on the information forwarding behavior.

Compared to the size of the standard service factor (β) in multiple regression analysis, the results of analysis are constraint recognition has a value of .374, and level of involvement has a value of .26, so hypothesis 1-4 was partly adopted.

4.4 Hypotheses 2

Hypotheses 2 prove that Prior knowledge about side effects of vaccination have an impact on the communication

Table 3. Multiple regression analysis of information processing

Variables	Non-standardized coefficient		Standardized coefficient	t-value	(Sig.)
	Beta	S.E	β		
problem recognition	.401	.069	.477	5.852	.000**
constraint recognition	-.056	.086	-.052	-.652	.516
involvement	.292	.075	.337	3.889	.000**
$R^2=.477, F=38.338$					

* $p<.05$, ** $p<.01$ **Table 4.** Multiple regression analysis of information forwarding behavior

Variables	Non-standardized coefficient		Standardized coefficient	t-value	(Sig.)
	Beta	S.E	β		
problem recognition	-.162	.077	-.211	-2.101	.038*
constraint recognition	.301	.097	.302	3.107	.002**
involvement	.275	.084	.347	3.261	.001**
$R^2=.208, F=11.738$					

* $p<.05$, ** $p<.01$ **Table 5.** Multiple regression analysis of information forwarding behavior

Variables	Non-standardized coefficient		Standardized coefficient	t-value	(Sig.)
	Beta	S.E	β		
problem recognition	-.128	.076	-.168	-1.684	.095
constraint recognition	.372	.096	.374	3.880	.000**
involvement	.209	.084	.265	2.505	.014*
$R^2=.219, F=12.485$					

* $p<.05$, ** $p<.01$

behavior (information seeking, information processing, information forwarding behavior, information sharing behavior). Hypotheses 2 of the analysis accepted a regression analysis.

As shown in Table 6, Prior knowledge appeared variate of information processing 47.1%, hypothesis 2-1 can

Table 6. Regression analysis of information seeking

Variables	Non-standardized coefficient		Standardized coefficient	t-value	(Sig.)
	Beta	S.E	β		
information seeking	.735	.071	.686	10.425	.000**
F-value	108.682**				
R ²	.471 (.467)				

*p<.05, **p<.01

be verify significant ($\beta=.686$, $p<.01$). It means that the higher the prior knowledge has a significantly greater impact information seeking behavior.

The hypothesis 2-2 examined that Prior knowledge appeared variate of information processing 11.2%, hypothesis 2-2 can be verify significant ($\beta=.334$, $p<.01$). It means that the higher the prior knowledge has a significantly greater impact information processing behavior.

The hypothesis 2-3 examined that Prior knowledge appeared variate of information forwarding 42%, hypothesis 2-3 can be verify significant ($\beta=.648$, $p<.01$). It means that the higher the prior knowledge has a significantly greater impact information forwarding behavior.

The hypothesis 2-4 examined that Prior knowledge appeared variate of information sharing 33.8%, hypothesis 2-4 can be verify significant ($\beta=.582$, $p<.01$). It means that the higher the prior knowledge has a significantly greater impact information sharing behavior.

4. Conclusion

This study suggests that there is a need to be debated in academia and industry.

The study tries to re-verify situation theory availability in order to suggest an effective strategy of the vaccination campaign in future. Particularly specific issue of vaccination emerges from the communication in actions under certain circumstances tried to verify the existence of an impact. The result approve any situation awareness variables have an effect on communication behavior from specific issue like side-effect vaccination.

First of all, Situation recognitions (problem recognition, constraint recognition, level of involvement) on issue of virus vaccination side-effect appear to have a partly effect on communication behavior (information seeking, information processing, information forward-

ing behavior, information sharing behavior). That is, situation recognition was verified as a factor affecting only information processing and information-seeking but information delivery and information sharing were working as behavior.

Knowledge based on the level of vaccination side effects of air over the issue of air has proved able to differentiate by.

Second, the results proved that communication behavior (information seeking, information processing, information forwarding behavior, information sharing behavior) can be segmented by based on the level knowledge. It was to maximize the effectiveness of communication campaign by segmenting the public according to their behavior by situation recognition and level of knowledge without recognizing the equal public and paying attention to the tailored message and communication to the public. The accumulation of such studies can be expected to accelerate the development of situation theory.

5. References

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