

The Effects of Mortality Salience on the Acceptance of Expert Recommendations: Focused on Doctors' Recommendations at Hospitals

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Abstract

The purpose of this research is to examine how mortality salience affects consumers' acceptance of expert recommendations. According to the terror management theory (TMT), individuals deal with fear of death

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by endorsing a cultural worldview. Based on TMT, we propose that when mortality is salient, people would intend to accept recommendations of experts whose authority is acknowledged by culture. This study especially focuses on recommendations of doctors who are generally regarded as experts with authority. The results from a study conducted at a university hospital indicate that patients who read death-related stimuli express higher intention to accept recommendations of doctors.

Keywords: terror management, mortality salience, expert recommendation, doctor's recommendation

INTRODUCTION

A fear of death is an instinctive fear that all human beings share. People encounter thoughts of death in everyday life by listening to the news of death-related accidents from television or visiting the funeral of close friends. Various studies in psychology and marketing have revealed that people tend to ward off the anxiety they feel when contemplating their own death. For instance, past studies show that making mortality salient increases preference for luxury goods (Mandel and Heine 1999) and domestic products, and induces positive evaluations of charity (Fransen et al. 2008).

The terror management theory (TMT: Greenberg, Solomon, and Pyszczynski 1997) provides a theoretical framework for understanding behavioral responses to reminders of one's own death. According to TMT, a thought of death engenders existential anxiety of people, which leads to the use of two strategies in order to alleviate this fear. An individual attempts to relieve an anxiety of existence either by defending one's cultural worldview or by enhancing one's self-esteem (Pyszczynski et al. 2004).

In this research, we examine the effects of mortality salience on the acceptance of recommendations from experts. TMT postulates that individuals deal with fear of death by endorsing a cultural worldview. Therefore, when mortality is salient, people would intend to accept recommendations of experts, whose authority is acknowledged by culture. The present study focuses on recommendations made by doctors at a hospital. The study focuses on the hospital environment, because it is a place closely related to the death of people and doctors are generally regarded as experts with authority.

It is an important issue to make patients follow recommendation

of doctors, because the extent to which a patient follows medical recommendations can be an important determinant of the beneficial effect of medical care (Yi 2008). However, medical studies show that many patients do not follow treatment recommendations. Estimates of nonadherence to treatment range from 20% among patients required to follow a short-term treatment for an acute symptomatic problem to 70% or more for a long-term condition requiring a life-style change (DiMatteo and Dinicola 1982; Sherbourne et al. 1992). As making patients follow medical recommendations can enhance health and well-being of patients, it is important to investigate factors that make patients better follow recommendations of doctors.

THEORETICAL REVIEW

Terror Management Theory

The terror management theory posits that people feel fear when confronted with their mortality, and individuals behave to protect themselves from the fear of death. The will to survive and the knowledge of transient life result in an unsolvable conflict, and this conflict is often referred to as terror. According to TMT, individuals utilize two strategies in order to manage the terror of death.

TMT claims that when mortality is salient, individuals endorse a cultural worldview that gives meaning, order and permanence to the self. A cultural worldview means “humanly created and transmitted beliefs about the nature of reality shared by groups of individuals” (Greenberg, Solomon, and Pyszczynski 1997). By following cultural values and engaging in culturally prescribed behavior, people can pursue the meaning of one’s existence and perpetuity. As death means disconnection between oneself and the world, and a possibility of this disconnection arouses terror, individuals can alleviate terror by strengthening a sense of belonging to the society. Moreover, culture provides protection to individuals who follow cultural standards, and individuals regard their life more meaningful when they follow the value of culture. As a result, mortality salience increases the endorsement of a cultural worldview.

TMT also proposes that people cope with the fear of death by

bolstering self-esteem when mortality is salient (Pyszczynski et al. 2004). Individuals try to confirm their meaning of existence by enhancing self-esteem, because self-esteem comes from beliefs that one is living up to the standards that are part of the worldview. Therefore, when mortality is salient, individuals manage the fear of death by increasing domains where they meet cultural standards that have important meaning to the self.

Various studies have demonstrated the effects of mortality salience on individuals' behavior. For instance, mortality salience increases favor toward people who support cultural values (Greenberg et al. 1992), aggression toward people who violate cultural norm (McGregor et al. 1998), and aggressive driving behavior when driving is an important source of self-esteem (Ben-Ari, Florian, and Mikulincer 1999). Moreover, American people evaluate President Bush more positively when mortality is salient (Landau et al. 2004).

Recently, TMT assumptions are explored in consumer behavior as well. When mortality is salient, individuals expect to spend more money on luxury goods in the future (Kasser and Sheldon 2000). Exposure to an insurance brand increases consumer preference of domestic products and donation to charity (Fransen et al. 2008). In addition, mortality salience results in more engagement in indulgent food among low-body-esteem participants, but less engagement among high-body-esteem participants (Ferraro, Shiv, and Bettman 2005).

Based on the findings of previous TMT studies, we hypothesize that individuals are more likely to accept recommendations of experts with authority when mortality is salient. Becker (1971, 1973, and 1975) proposed that over the course of socialization, the primary sources of psychological security, which supports one's meaning of existence, transfer from one's parents to the culture and its figures of power and authority (Landau et al. 2004). As mortality salience leads to the defense of a cultural worldview, it will increase the acceptance of recommendations suggested by experts whose authority is acknowledged by society.

Contextual Priming

Priming effects have been widely documented by various marketing and psychology studies (e.g., Arndt et al. 2007; Yi

1990). It has been shown that people often interpret information depending on the particular knowledge structures that are currently active. As knowledge is organized within a network of semantically and actively linked concepts, one concept such as “nurse” can be activated by priming an associated concept such as “doctor.” More recent research has shown that goals can be activated by priming the means that lead to the goals (Shah and Kruglanski 2003). In this light, Arndt et al. (2007) showed that priming cancer can increase the accessibility of death-related thinking. In the marketing literature, Fransen et al. (2008) showed that priming people with an insurance brand logo can activate death-related thoughts and increase favorable attitude toward domestic products.

In this study, we increase the accessibility of death-related thinking by priming cancer, which can be easily activated in the hospital environment, and investigate the influence of mortality salience on the acceptance of recommendation.

Self-Monitoring

Self monitoring means “sensitivity to the expression and self-presentation of others in social situations and usage of these cues as guidelines for monitoring and managing his own self-presentation and expressive behavior” (Snyder 1974). Snyder explained individual difference of self expression by self-monitoring, which is related to management of self image in social interaction. According to the self monitoring scale (Snyder 1974), high self-monitors tend to engage in socially appropriate behavior and change their behavior by observing the expression and behavior of other people. In contrast, low self-monitors are not concerned about social suitability of their behavior, but they follow their internal values and beliefs.

Therefore, in case of high-self monitors, mortality salience would enhance the desire to be admitted as a member of society who lives up to standards of cultural value, and increase the acceptance of experts’ recommendations.

Authoritarian Personality

The authoritarian personality was first introduced by Adorno

et al. (1950). According to them, highly authoritarian people are raised by oppressive fathers and strict mothers who rely on punishment and threat. Highly authoritarian people are unstable and dependent on parents when young, and these experiences lead to obedience to authority and power when they grow up. According to the studies of authoritarian personality, highly authoritarian people are obedient to authority (Elms and Milgram 1966), ostracize minority, easily accept the attitude of people in power, (Izzett 1971), and vote for conservative candidates (Higgins 1965).

We hypothesize that the effect of mortality salience on the acceptance of expert recommendations will be more significant for highly authoritarian people than for less authoritarian people.

HYPOTHESIS

We hypothesize that individuals are more likely to accept an expert's recommendations when their mortality is salient. Because individuals who feel terror of death endorse a cultural worldview, they would have higher preference for recommendations of experts whose authority is acknowledged by society. Therefore, patients at hospitals would accept recommendations of doctors more easily when mortality is salient.

H1: Mortality salience would increase positive attitude toward doctors' recommendations and intention to accept them.

Previous research on TMT has shown that an individual's own version of the cultural worldview influences the effects of mortality salience (Rosenblatt et al. 1989). Although most individuals within a culture share similar values, each individual has also a unique version of the cultural worldview based on his or her own experiences and perceptions. If an individual's own version of the cultural worldview does not accord with the cultural worldview, the effect of mortality salience on defending a cultural worldview does not occur. Therefore, the effect of mortality salience on the acceptance of doctor's recommendations would not occur to patients who do not believe in doctors.

H2: The effects of mortality salience on the acceptance of

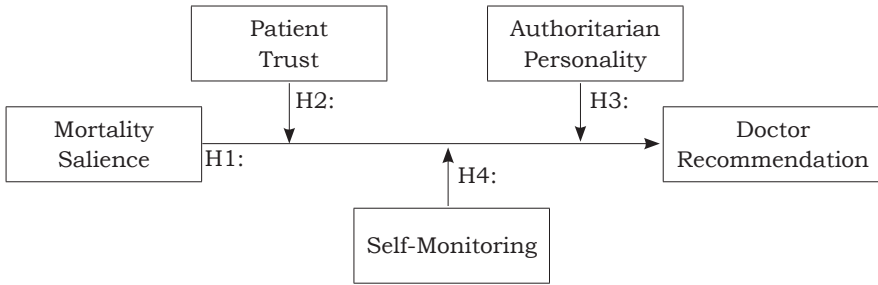


Figure 1. represents the conceptual model of this study.

doctor’s recommendation would occur only for patients who believe in doctors.

Research on TMT has also revealed that the authoritarian personality can affect the style of responding to fear of death (Greenberg et al. 1990). The authoritarian personality is a pattern of generalized behavioral style characterized by high regard for authority, rigidity, and conventionality. Because the authoritarian personality is a pattern of defensive reaction to the fear of weakness or inferiority (Adonrno et al. 1950), highly authoritarian people are more affected by mortality salience than less authoritarian people are. We hypothesize that the effect of morality salience on accepting doctors’ recommendations would be more significant for highly authoritarian people than for less authoritarian people.

H3: The effects of mortality salience on the acceptance of doctors’ recommendations would be higher for highly authoritarian people than for less authoritarian people.

Self monitoring is a tendency to evaluate the appropriateness of one’s behavior and to engage in socially proper behavior. High self-monitors tend to engage in socially appropriate behavior, but low self-monitors are not concerned about social suitability of their behavior. We hypothesize that when mortality is made salient, high self-monitors will show the intention to accept doctors’ recommendations more significantly than low self-monitors will. High self-monitors are expected to have more desire to engage in

socially appropriate behavior than low self-monitors.

H4: The effects of mortality salience on the acceptance of doctors' recommendations would be more significant for high self-monitors than for low self-monitors.

METHOD

A total of 82 patients, who visited the department of dermatology at a major university hospital, participated in the present study, and 76 responses were used for analysis. Men constituted 48%, and women constituted 52% of the total respondents. Respondents ranged from 17 to 74 years of age. 40% of respondents were in the age of 17 to 30, 44% of respondents were 31 to 50, and 16% of respondents were over 51. The study was conducted at the department of dermatology, because we did not want to include patients suffering from fatal diseases in this study. Moreover, we assumed that the correlation between image of dermatology and death is not so strong that we could manipulate mortality salience of patients by using experimental stimuli.

Procedure

The experiment employed a single factor between-subjects design (death-related stimuli vs. no stimuli). A brochure explaining cancer was used as experimental stimuli. Cancer was used as a stimulus to increase death-thought accessibility, because previous research suggests that cancer is often construed as a death sentence (Cameron 1997; Ferrell et al. 1998), and priming cancer can increase the accessibility of death-related thoughts (Arndt et al. 2007). We expected that when patients read a brochure about cancer, it would increase death-thought accessibility.

In the experimental condition, a nurse of the department distributed the brochure about cancer to patients who are waiting for doctors in a waiting room. In order to make patients read the brochure carefully, the nurse told patients that they would answer a survey including an evaluation of the brochure after they read it. The purpose of the survey was described as an evaluation of the brochure about cancer and investigation

of patients' opinion related to medical service. Patients were informed that the brochure was being used at a different branch hospital at the moment, and other branch hospitals wanted to introduce a similar brochure if patients' evaluation were positive. After reading the brochure, patients were requested to answer a questionnaire measuring patients' evaluation of the brochure, trust toward doctors, authoritarian personality, self-monitoring, and mood at the moment. At the end of the questionnaire packet, patients read a hypothetical scenario where a doctor recommends a new technique for treatment of skin disease. Allegedly, the new technique can reduce treatment time, but it is more expensive than traditional techniques and safety is not fully guaranteed. After reading the scenario, patients rated their attitude toward the doctor's recommendation and their intention to follow the recommendation.

Patients in the no-stimuli (control) condition received a survey packet without any death-related stimuli. The purpose of the survey was described as an evaluation of hospital service quality and an investigation of patients' opinion related to medical service. Unlike the questionnaire in the experimental condition, the questionnaire in the no-stimuli condition included an evaluation of the hospital service quality, instead of an evaluation of the brochure about cancer. Other items were the same with the questionnaire in the stimuli condition.

In order to assign patients randomly into each condition and prevent any influence from patients in the other condition, two surveys were performed at different days. As the survey was conducted in more than a week, we made sure that no patients participated in the survey more than twice. No participants were suffering from cancer or visited the hospital to screen for cancer.

Pretest

In order to test whether the cancer brochure makes mortality salient, a pretest was conducted before the main study. The Temple Death Anxiety Scale (DAS) was used to measure the accessibility of death-related thoughts. A group of patients (N = 36) was requested to read the cancer brochure and rate five items measuring the evaluation of the brochure and five items of DAS on a 5-point scale. The other group of patients (N = 38), who were

not offered the brochure, were asked to rate five items measuring the evaluation of the hospital service quality and five items of DAS. An ANOVA on the measures of DAS (Cronbach's $\alpha = .650$) revealed that participants in the experimental condition expressed higher death anxiety ($M = 3.42$, $SD = .80$) than participants in the control condition ($M = 3.78$, $SD = .69$; $F(1, 72) = 4.27$, $p < .05$)

Measures

Trust toward doctors. Based on the measurement of patient trust developed at medical research (Anderson and Dedrick 1990; Kao et al. 1998), we included five items measuring trust toward doctors. As original measures were developed in the United States, we excluded questions that do not fit with the Korean hospital system. Participants were asked to indicate the extent to which they agree with the following statements. "I believe that doctors perform only medically necessary tests and procedures," "keep personally sensitive medical information private," "perform necessary medical tests and procedures regardless of cost," "put my health and well-being above keeping down the health plan's cost (reverse scale)," and "I trust judgment about my medical care."

Self-monitoring. Snyder (1974) generated the self-monitoring scale to measure an individual's self-observation and self-control guided by situational cues. Five items of this scale were measured using a 7-point scale ranging from "strongly disagree" to "strongly agree." Patients with high scores are regarded as high self-monitors.

Authoritarian personality. Min (1989) has developed the measurement scale of authoritarian personality for Koreans, based on the scale generated by Andorno (1950). This scale consists of 35 items measuring conventionalism, authoritarian obedience, authoritarian aggressiveness, anti-introspectionism, stereotypical thinking, belief in power, cynicism, and sexism. Five items measuring authoritarian obedience were used to measure authoritarian personality in this study.

Mood. To assess whether exposure to stimuli induced an unintended mood effect, patients responded to the 20 items measuring their mood (PANAS-X; Watson et al. 1998). This

Table 1. Results of Reliability Test

	Number of items	Cronbach's α
Trust toward doctors	5	.767
Self-monitoring	5	.711
Authoritarian personality	5	.775
Positive affect	10	.819
Negative affect	10	.925
Attitude	3	.905
Intention	2	.938

measurement consists of 10 positive items (e.g., excited, active, and proud) and 10 negative items (e.g., guilty, frightened, and irritated).

Attitude toward recommendation. As one of dependent variables, an attitude toward recommendation was measured. Patients responded to three 7-scale questions that were used for measuring attitude toward the offer in previous marketing studies (Bobinski, Cox, and Cox 1996; Lichtenstein and Bearden 1989).

Intention to accept recommendation. The intention was measured by asking two questions; "I will follow recommendations of the doctor," and "There is a possibility of following recommendations of the doctor." The patients responded on a scale of 1-7, where 1 = "strongly disagree" and 7 = "strongly agree".

Cronbach's α coefficients (Table 1) reveal that all construct reliabilities exceed 0.70, indicating an acceptable level of internal consistency (Nunnally and Bernstein 1994).

RESULTS

Mood

Analysis of variance on the positive items of the PANAS-X ($F(1, 2.475)$, ns) and negative items ($F(1, .555)$, ns) indicated that reading the brochure did not affect patients' mood status.

Therefore, one can conclude that the finding of this study was not caused by mood differences between the two conditions.

Main Effects

The main purpose of this study is to investigate the effect of mortality salience on the acceptance of recommendations of doctors. To test Hypothesis 1, a t-test for two independent samples was utilized. The result of the t-test revealed that patients who read the cancer brochure had more positive attitudes toward doctors' recommendations (5.21 versus 3.49, $p < 0.001$) and higher intentions to follow the recommendations (5.45 versus 3.88, $p < 0.001$). These findings support the hypothesis that mortality salience leads to accepting recommendations of experts with authority. According to the terror management theory, heightened awareness of morality leads to a greater need for defending a cultural worldview. As expected, mortality salience made patients accept recommendations of doctors whose authority is acknowledged by culture.

Moderating Effects

Another important aim of this study is to find the moderating effects of an individual's traits that can affect the main effect of mortality salience. We hypothesized that trust toward doctors (H2), authoritarian personality (H3), and self-monitoring (H4) would moderate the effect of mortality salience. A 2 (brochure vs. no brochure) X 2 (personal trait: high vs. low using a median split) ANOVA was conducted to test each of the hypothesized moderating effects. However, none of these variables was found to moderate the main effect. Only the main effect of mortality salience was found significant ($p < .001$). Table 2 and Figures 2-4 show the results of analysis.

As can be seen in Table 2 and Figures 2-4, trust toward doctors, authoritarian personality, and self-monitoring did not influence the effect of mortality salience on recommendation acceptance. In other words, regardless of the three personal traits, patients who read the brochure of cancer expressed significantly more positive attitude toward recommendations and higher intention to accept them than patients who did not read the brochure. Some possible

Table 2. ANOVA Results

Independent Variables	Dependent Variables	d.f.	MS	F-value	p-value
Attitude toward Recommendation	A. Mortality Salience	1	42.348	37.863	.000*
	B. Trust toward Doctors	1	7.122	6.367	.014*
	A x B	1	.838	.749	.390
	Error	72	1.118		
Intention to Accept Recommendation	A. Mortality Salience	1	38.157	25.452	.000*
	B. Trust toward Doctors	1	4.023	2.684	.106
	A x B	1	2.577	1.719	.194
	Error	72	1.499		
Attitude toward Recommendation	A. Mortality Salience	1	56.566	46.691	.000*
	B. Authoritarian Personality	1	.180	.148	.701
	A x B	1	1.889	1.559	.216
	Error	72	1.211		
Intention to Accept Recommendation	A. Mortality Salience	1	44.347	27.869	.000*
	B. Authoritarian Personality	1	1.022	.642	.426
	A x B	1	.013	.008	.928
	Error	72	1.591		
Attitude toward Recommendation	A. Mortality Salience	1	55.858	45.099	.000*
	B. Self-Monitoring	1	.030	.024	.876
	A x B	1	.151	.122	.728
	Error	72	1.239		
Intention to Accept Recommendation	A. Mortality Salience	1	48.439	30.613	.000*
	B. Self-Monitoring	1	.707	.447	.506
	A x B	1	1.056	.668	.417
	Error	72	1.582		

* p < .05

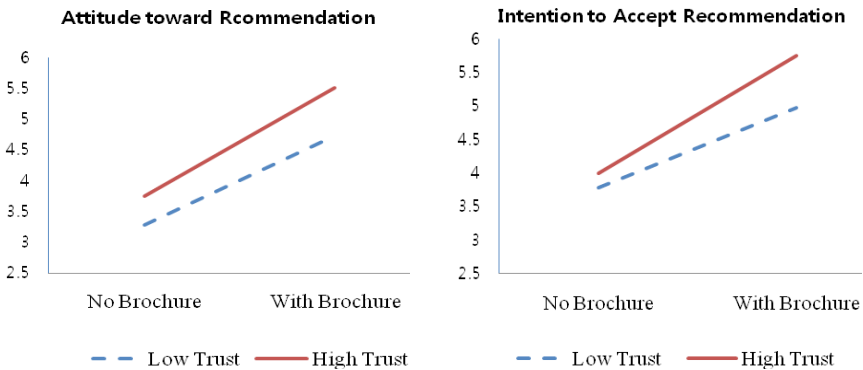


Figure 2. Effects of Mortality Salience on Recommendation Acceptance (Low vs. High Trust toward Doctors)

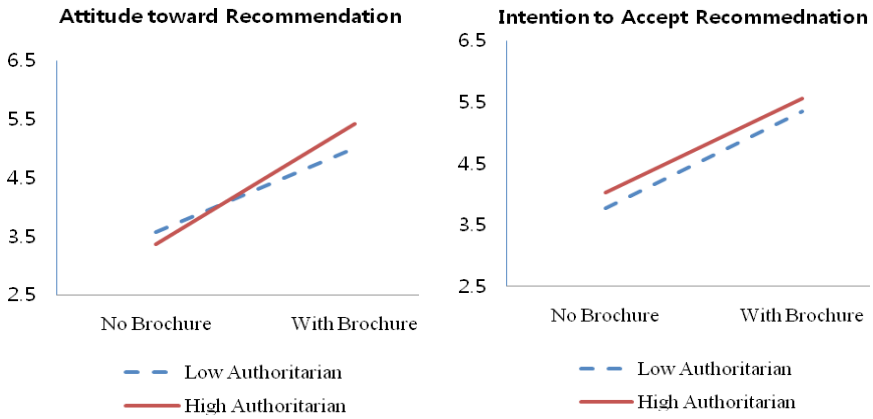


Figure 3. Effects of Mortality Salience on Recommendation Acceptance (Low vs. High Authoritarianism)

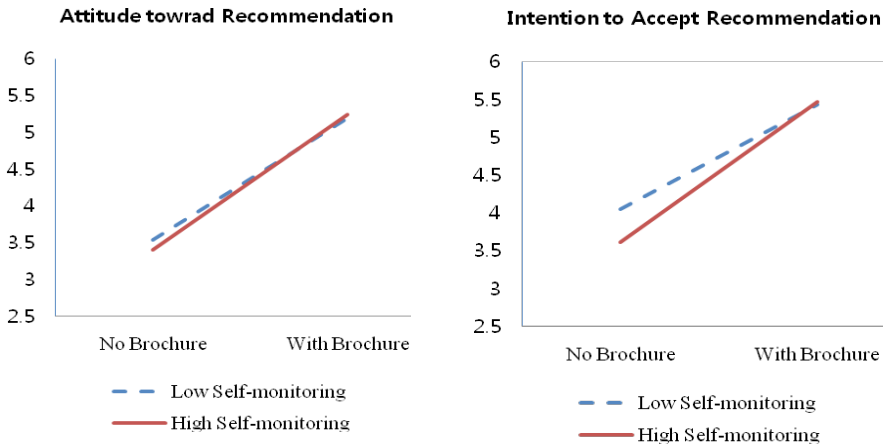


Figure 4. Effects of Mortality Salience on Recommendation Acceptance (Low vs. High Self-monitors)

explanations of rejected hypotheses will be discussed in the Limitations and Future Research section.

CONCLUSION

Findings and Implications

Since Greenberg, Pyszczynski, and Solomon (1986) formulated the terror management theory, effects of mortality reminders have been under frequent investigation. This research contributes to the growing literature on TMT by applying the theory to the acceptance of recommendation, which is an important element of consumer behavior. The result of this study indicates that making mortality salient can increase the acceptance of experts' recommendations. As a reminder of death leads to endorsing a cultural worldview, individuals would be more affected by recommendations of experts whose authority is acknowledged by culture.

Previous research on TMT has mainly focused on general consequences of mortality salience, such as enhancing self-esteem and in-group favoritism. Recently, researchers in the consumer behavior field started to study effects of mortality salience in the marketing context, but only a few studies empirically investigated the effects of mortality salience on consumer behavior (Ferraro et al. 2005; Fransen et al. 2008; Kasser and Sheldon 2000). The present study empirically shows how mortality salience can influence the behavior of patients. The finding of this study suggests that exposure to death-related stimuli can make consumers more favorable to recommendation of expert employees.

Such an influence of mortality salience will be especially strong in business area where accessibility of death-related thinking can be easily increased and consumers do not have sufficient knowledge about products or services. Insurance business and medical service would be good examples. As many insurance products, such as life insurance, are closely related to death, mere exposure to an insurance brand can increase the accessibility of death-related thoughts (Fransen et al. 2008). By enhancing mortality salience, insurance advisers would be able to make customers, who do not have sufficient knowledge about sophisticated insurance products, more favorable toward their advice. The finding of this study also provides important implications for enhancing medical care of patients at hospitals. As the result of this research shows, making patients exposed to death-related stimuli, which can

be easily found at hospital, resulted in adherence to a doctor's recommendation. Because following medical recommendations can be an important determinant of the beneficial effect of medical care (Sherbourne et al. 1992), the result of this research can be applied to enhance the efficiency of medical care.

Limitations and Future Research

Although this research revealed the main effect of mortality salience on the acceptance of recommendations, none of hypothesized moderation effects was found. First of all, the failure to reveal the moderation effect might have resulted from peculiar characteristics of the study environment. Although this study was conducted at the department of dermatology, the effect of mortality salience could be extremely powerful at a university hospital, because it is one of the most common places where people die. Therefore, it is possible that the effect of mortality salience at hospitals is so strong that moderation effects are not found. Additional studies are needed to examine the moderation effects by using different contexts other than hospitals. In addition, the research design might have affected the result of this study. In order to make patients believe that the purpose of the study is evaluating the brochure about cancer, we made patients in the experimental condition read the brochure before answering questions measuring moderating variables. It is likely that an act of reading the brochure could have affected moderating variables that were assumed as stable personal traits. Patients in the experimental condition showed higher beliefs toward doctors and authoritarian personality than patients in the control (no stimuli) condition (t-test results: 5.40 vs. 4.79, $p < .05$ and 4.39 vs. 3.83, $p < .05$). Failure to measure personal traits before showing death-related stimuli might be one reason for the failure to find moderation effects.

Lastly, this study is limited in its generalizability, because it was focused on doctors' recommendations at hospitals. Generally, doctors are believed to cure disease and prevent death of people. Even though the study was conducted at the department of dermatology, where few death-related diseases are treated, doctors' image of preventing death might have affected the result of study. This characteristic of research subject limits the generalizability

of results from the study. Therefore, in order to enhance external validity, additional research is needed that examines the effects of mortality salience on the acceptance of experts' recommendations in a different context.

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