

Comparison of EDCs Risk Perception Between The General Public and Experts Using Psychological Effect Variables in Korea

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Introduction

Endocrine disrupting chemicals(EDCs) have received considerable attention due to their ubiquity in the environment and the increased incidence of endocrine-related disorders in humans, including pregnancy complications, genital malformations (i.e. cryptorchidism and hypospadias in male infants), and cancer (i.e. breast, ovarian, prostate, testicular)¹. EDCs are natural or synthetic compounds capable of interfering with the biosynthesis, storage, release, transport, and/or receptor binding of endogenous hormones, ultimately interfering with the proper functions of these hormones².

In addition, Risk perception is rarely equal for experts and the public, even if they may be, at times, in rough agreement. In a frequently cited study, the US EPA compared experts` rankings of important environmental risks with public risk perception. They found little agreement between the two sets of rankings. A follow-up three years later gave virtually the same results³.

Thus, in this study, we analyzed how EDCs Risk Perception is different Between Experts and The General Public. Through the result, we also tried to determine what additional improvements can be made for experts and the General Public.

Materials and methods

1) Study subjects and Questionnaire survey

The survey was targeted at men and women aged from 15 to 59 years across the country (Republic of Korea). The survey of risk perception of EDCs was conducted 2,000 public people and 300 experts. The general public included not only but ordinary people also major impact group about EDCs such as 435 married fertile women (20~49years), 155 mothers raising infants (0~5years), 240 mothers raising school-children (6~14years). Exports were consisted of scholars and government employees.

The questionnaire of risk perception of EDCs was conducted by on-line. The questionnaire of risk perception was used consisting of 7 parts; selected questions(SQ), quality of life(A), general perception of EDCs(B), risk perception of EDCs(C), exposure perception of EDCs(D), respondents health condition(E), and questions for statistical

treatment(DQ). Measuring variables of risk perception of EDCs(C) were dangerousness, spontaneity, controllability, fear, familiarity, scientific knowledge, and personal knowledge. (Table 1)

2) Statistical analysis

Statistical analysis was performed using IBM SPSS(version 20). Multiple regression analysis were performed to determine the influencing factors related to risk perception of EDCs.

Results and discussion

The investigation of risk perception of EDCs was conducted for 2,000 general publics and 300 expert groups , and the results from questions in the questionnaire about risk perception of EDCs for public generals were shown. The result of dangerousness part in the general public`s risk perception questionnaire of EDCs showed higher perception level; however, the results of scientific knowledge part showed relatively lower perception level (Table 1).

The result of dangerousness part in the expert group`s risk perception questionnaire of EDCs showed higher perception level; however, the results of Spontaneity part showed relatively lower perception level. Compare the general public with the expert group, the expert group`s risk perception of EDCs showed higher level than the general public (Table 2).

The Fear was as high as second part among the seven of the general public`s risk perception variables and this result proves that the general public is afraid of EDCs. This phenomenon is capable of affecting people's behavior (Table 3).

The Fear was as high as third part among the seven of the expert group`s risk perception variables, and this result proves that the expert group is afraid of EDCs and this phenomenon is capable of affecting people's behavior. Compare the general public with the expert group, the general public has more fear, more interest, and more exposure condition but the expert group has more fear, less interest, and less exposure condition.

As a result, this study found that there is a risk perception`s difference between the general public and the expert group. In addition, although general public receives information of EDCs from the media such as TV, Internet, Blog, etc. they are not susceptible to comprehend the correct transmission for information. The contents development capable of providing correct information by investigating perception about EDCs is necessary.

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References

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Table 1. Risk perception variables in the questionnaire survey

Risk perception variables	Descriptions of items	Scale endpoints			
		The General Public		Experts	
		Low(1)	High(7)	Low(1)	High(7)
Dangerousness	Do you think that EDCs have dangerous effects on the human body?	5.47		5.71	
Spontaneity	Do you ever use the products containing EDCs reluctantly?	3.81		3.45	
Controllability	Do you think that risk and damage of EDCs can be controll(decrease) to some extent by your own effort or attention?	4.01		3.82	
Fear	Do you fear about the danger of EDCs in some extent?	4.63		5.01	
Familiarity	Do you think how easily the risk and danger of EDCs can be occurred in the vicinity?	4.50		5.01	
Scientific Knowledge	Do you think how much knowledge about EDCs people have?	3.53		3.48	
Personal Knowledge	How well do you know about the risk and danger of environmental hormone?	3.86		5.05	

Table 2. Regression analysis of the Fear among the seven of the general public`s risk perception variables

Coefficients ²						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.664	.489		1.358	.175
	sex	.039	.052	.016	.761	.447
	age	.013	.002	.132	5.687	.000
	Educational Standard	.012	.023	.012	.535	.593

Family Outcome	.015	.016	.019	.921	.357
General Health Condition	.086	.077	.023	1.120	.263
Physical Health Condition	-.311	.094	-.071	-3.308	.001
Physiological Health Condition	-.186	.062	-.064	-3.007	.003
Quality of life	.026	.072	.008	.362	.717
Interest	.391	.042	.210	9.303	.000
Exposure Condition	.201	.045	.094	4.508	.000
Information	.090	.054	.035	1.657	.098
Bisphenol-A by Media	.282	.056	.145	5.010	.000
Phthalate by Media	.126	.053	.066	2.359	.018
Contact Degree by Institution	.005	.029	.005	.166	.869
Contact Degree by Media	.038	.039	.031	.977	.329
Contact Degree by Meeting	.080	.026	.092	3.130	.002
Reliability Degree by Institution	-.032	.035	-.029	-.913	.361
Reliability Degree by Media	-.087	.046	-.070	-1.882	.060
Reliability Information by Meeting	.024	.028	.026	.871	.384
Risk Information by Institution	.016	.033	.015	.480	.631
Risk Information by Media	.015	.041	.012	.363	.717
Risk Information by Meeting	-.007	.024	-.009	-.306	.759
Promotional Material by Media	.147	.032	.114	4.679	.000

a. Dependent Variable

Table 3. Regression analysis of the Fear among the seven of the expert group's risk perception variables

Coefficients ²						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.664	.489		1.358	.175
	Interest	-.582	.038	-.324	-15.229	.000
	Exposure Condition	-.223	.044	-.107	-5.113	.000
	Bisphenol-A by Media	.215	.059	.103	3.638	.000
	Phthalate by Media	.152	.054	.080	2.794	.005
	Risk Information by Media	.054	.028	.045	1.938	.053
	Promotional Material by Media	.099	.030	.079	3.343	.001

a. Dependent Variable