2000　　6

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2000   6

(risk communication activity)　　　　　,

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　2000　5　6

2　　　　　　,　　　　　　　　　　　1

　　　.　　　　　　1　　　　　574　, 2　　　465

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　　　　　　　　　　　　　,　　　　,

(one-way street)　　,

(interactive process)　　　　.

E-PERM Device　　　　　5

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　　　.

　83.8%　　　　　　　　　　　,　　98%

　　　　　　　　　,

87.7%   .

                                                                4.32± 3.24 pCi/ L

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                                                    .

                        ,   (p =0.0001),

                                                    (P<0.05).

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,

(, 1999).

(risk management)

(Connelly and Knuth, 1998)

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(US   EPA)   (federal

environmental raws)

(US EPA, 1990),

(risk)

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(Rowan,
1996; Tinker, 1995).

(risk communication)

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(Sparks and Cooper, 1993; Tinker, 2000).

"　　　　　　　　　　　　　　?", "

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(Chess et al., 1995),

(Velicer and Knuth, 1994),

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(, 1994),

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(, 1990;   , 1994),

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(technological)

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1.   **(Risk Communication)**

(Risk Assessment)   (Risk Communication activities)

(Tinker et al., 1995; ATSDR, 1997).

(National Cancer Institute; NCI)

,   (Center for Disease Control and Prevetion; CDC)   (environmental tabacco smoke; ETS)

(ATSDR, 1997).

(U.S. Public Health Service; PHS)

,

,   -   (Cost-effect analysis)

(ATSDR, 1997).

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,   ,

(ATSDR, 1997).

,   ,   ,

(Sparks and Cooper, 1993).

(one-way street)   ,

(interactive

process)   ,

,

(Susan, US EPA website).

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,   ,   ,   ,   ,   ,

(stakeholder),   ,   (WHO, 1997),

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ATSDR(the Agency for Toxic Substances and Disease Registry)

1993

(Environmental   Health Risk Communication Planning Model)

,

(Tinker et al., 1995;   1).

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                              ASTDR Mission

    Evaluation                Program Areas              Internal and External
                                                         Influencing Factors
  • Formative Research      •  Site-specific Activities
  • Outcome                 •  Community involvement    •  ASTDR Mandata
  • Impact                  •  Health professions Education      Goals
                           •  Cooperative Agreements            Objectives
                           •  Minority Health                   Policies
                           •  Federal Facilities        •  Internal Operations and
                           •  Regional Operations           Resorces
                                                        •  External Environmental
                                                        •  Disciplines/Theories
                            Public Health Issue
                                                          Learning
                                                          Domains
                          Audience Analysis           •  Awareness
                          and Sugmentation            •  Knowledge
                                                      •  Attitudes
                                                      •  Behaviors
                                                      •  Skills
                Plan       Implement      Maintain

                          Dicision for Program
                          Improvement
                          •  Expand
                          •  Continue
                          •  Modify
                          •  Discontinue
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1. ATSDR

                                                              ,   ,

,

                              (ATSDR, 1997).

                                                                      ,

                    ,

                    ,   (US EPA)

                    .

,   ,

,   ,   (announcement),

,   ,   ,   ,

(newsletter),   ,

(Susan, US EPA website).

4

(Covello et al, 1987),   Type 1

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Type 2   ,

, Type 3

, Type 4

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(US EPA)

(   )

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(cardinal rules)   (US EPA, 1996).

(US EPA)

,   Federal

Register   .   (E-mail)

EPA   Federal Register rules

(Susan, US EPA website).

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1   2000   5   19   24   4

139   ,   111   ,   144   180   574

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6   10   2   465   .

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(US EPA),

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(US　EPA)

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E-PERM　Device　　　　　　　　　(　　2).

E-PERM　　5

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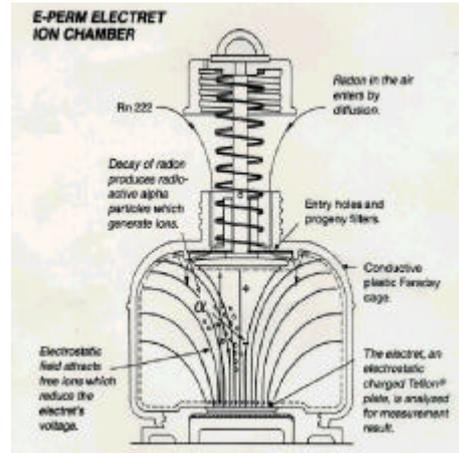
2. (E-PERM Device)

4.

Scaling test

5 , 10

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, paired T-test

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. SAS 6.11 .

3.

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1.

. (Radon)

(Radon, Rn)   ,

                    ,   ,
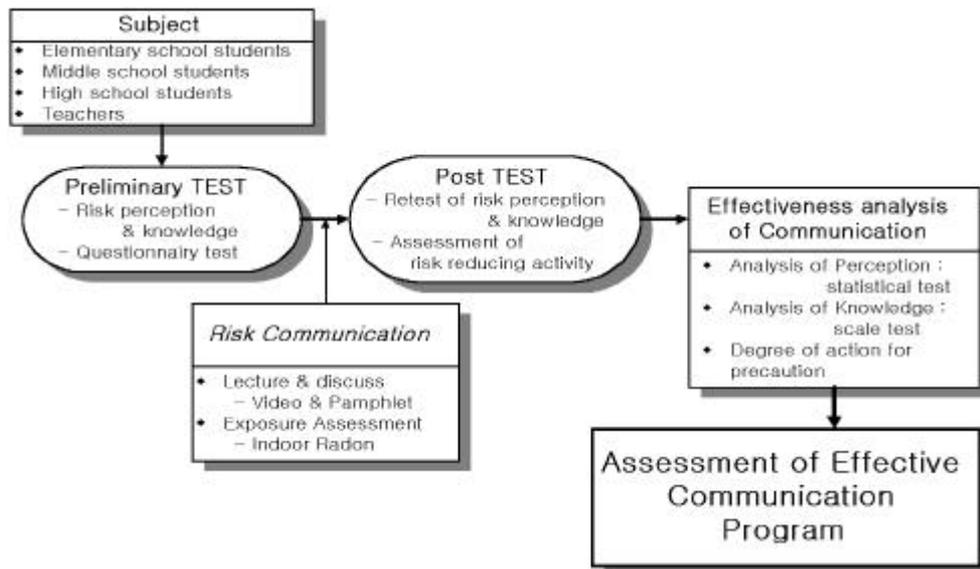
                              (, 1999).

                -238(U-238)   α-   -226(Ra-226)

                              A, B, C   (Radon daughter)

                (Pb)   .   3.8

                                              (Bodansky, 1987).

        ,

              ,   (4).

공기 물

식품 토양

4.

,   ,

,   1,000

(US EPA, 1994).

,   (Collman et al.,

1991),   15

(Thorne et al., 1996).

4pCi/

100   1 5

,   20pCi/   1

(5).

(pCi/)	(1,000)		
200	440 - 770	1000	60
			4 /
100	270 - 630	100	2,000 chest x-ray/
40	120 - 380		
20	60 - 210	100	2 /
			1 /
10	30 - 120	10	5
4	13 - 50		200 chest x-ray/
2	7 - 30	10	
1	3 - 13		
0.2	1 - 3		20 chest x-ray/

5.

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(US EPA)

, 20%

(state)

(US EPA, 1996).

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(US EPA, 1989).

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(Mcclelland et al., 1991).

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(, 1999)

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.   (Dioxin)

           (Dioxin)   polychlorinated-dibenzo(p)dioxins(PCDD)   polychlorinat
-ed-dibenzofurans(PCDF)   270

    2,3,7,8-TCDD (Tetrachlorodibenzo-*p*-dioxin)
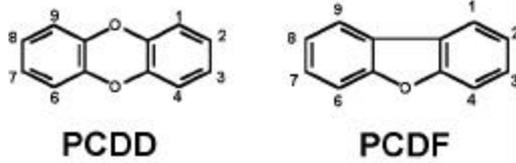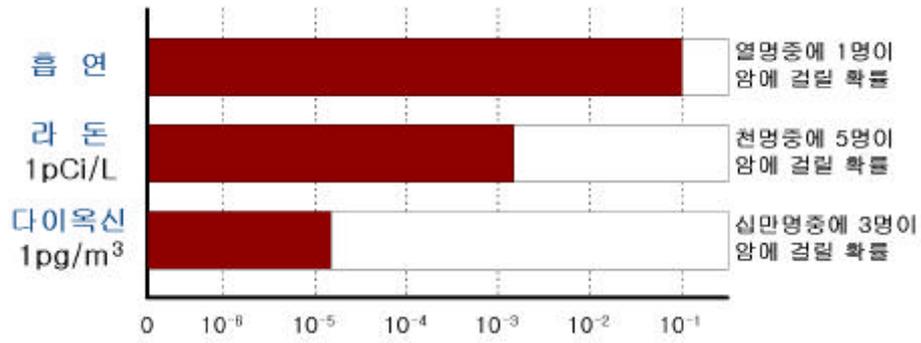
                                             (, 1999).

6.   (PCDD)   (PCDF)

                                        ,   ,

                    (7).

7.

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,   .

(US EPA)   (IARC)

group B1(

)   group 1(

)   .

210   2,3,7,8-TCDD

(1).

1.

IARC	US EPA
1	A
	B1
2A	
	B2
2B	C
3	D
4	E	,

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1pg/ 3

, 1

, 1pCi/ L 5

(8).

흡 연 — 열명중에 1명이 암에 걸릴 확률

라 돈 1pCi/L — 천명중에 5명이 암에 걸릴 확률

다이옥신 1pg/m³ — 십만명중에 3명이 암에 걸릴 확률

8.   ,

   1999   15
0.92pCi/ L   ,   0.056ng/
         (, 1999).

         5   ,
         2
      .

                    ,

                    (9).

라 돈 — 천명중에 5명이 암에 걸릴 확률

다이옥신 — 백만명중에 2명이 암에 걸릴 확률

0   10⁻⁶   10⁻⁵   10⁻⁴   10⁻³   10⁻²   10⁻¹

　　　15　　　　　　　　　　　　　　　: 0.92pCi/ L （　　　, 1999）
　　　　　　　　　　　　　　　: 0.056 p g/ 　（　　　　, 1999）

　　9.

2.

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4   .   ,

1   574 , 2   481   ,
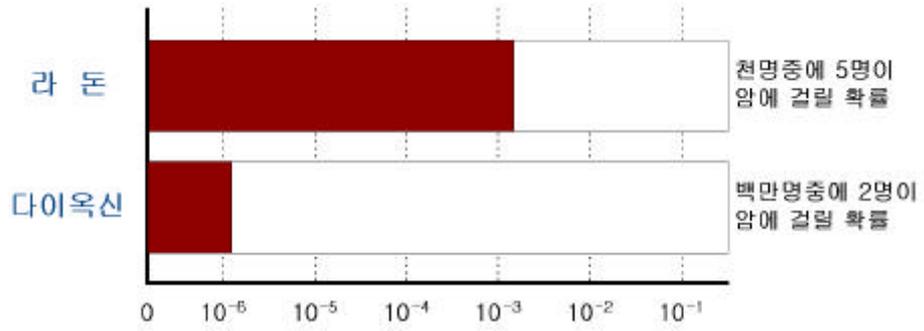
1   264 , 2   236   ,   1 , 2   302

, 239   (2).

1   139 , 2   114   ,

1   2   111   102   ,   144

, 152 ,   180 , 113   .

(85.7%),   72%

.

2.

		1		2	
			(%)		(%)
		264	(46.6)	236	(49.7)
		302	(53.4)	239	(50.3)
		566	(100.0)	475	(100.0)
		139	(24.2)	114	(23.7)
		111	(19.3)	102	(21.2)
		144	(25.1)	152	(31.6)
		180	(31.4)	113	(23.5)
		574	(100.0)	481	(100.0)
1)		51	(13.0)	-	
		333	(84.9)	-	
		2	(0.5)	-	
		6	(1.5)	-	
		392	(100.0)	-	
1)		129	(36.1)	-	
		228	(63.9)	-	
		357	(100.0)	-	
1)		208	(57.8)	-	
		152	(42.2)	-	
		360	(100.0)	-	
2)	100	3	(2.1)	-	
	100 - 200	35	(24.3)	-	
	200 - 300	59	(41.0)	-	
	300 - 400	27	(18.8)	-	
	400	20	(13.9)	-	
		143	(100.0)	-	
		235	(41.4)	-	
		174	(30.6)	-	
		159	(28.0)	-	
		568	(100.0)	-	

1)   2)

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　　　　　　　　　，　　　　　　　1　,　　　　　　　2　,　　　　　　3

　　　　　　(　3).

　　　　　　　　　　(　2.5　),

　　　　　　　　　　　1.6　　1.5

　　　　　(　10).

　3.

	(139)	(111)	(144)	(180)	(574)
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
(TV/　　　)	2.1 ± 0.7	2.2 ± 0.7	2.5 ± 0.6	2.5 ± 0.5	2.3 ± 0.6
，	2.1 ± 0.6	2.1 ± 0.6	2.3 ± 0.6	2.4 ± 0.5	2.2 ± 0.6
	1.8 ± 0.7	1.5 ± 0.6	1.6 ± 0.6	1.7 ± 0.6	1.7 ± 0.7
(　，　　)	2.1 ± 0.7	2.0 ± 0.7	2.0 ± 0.6	1.9 ± 0.5	2.0 ± 0.6
	2.1 ± 0.7	1.6 ± 0.6	1.6 ± 0.6	1.7 ± 0.6	1.7 ± 0.7
(　)	2.0 ± 0.8	1.5 ± 0.7	1.7 ± 0.7	1.6 ± 0.6	1.7 ± 0.7
	1.9 ± 0.7	1.5 ± 0.7	1.4 ± 0.6	1.6 ± 0.6	1.6 ± 0.7
	1.6 ± 0.7	1.3 ± 0.4	1.3 ± 0.5	1.9 ± 0.5	1.5 ± 0.6

10.

(4).   4   ,

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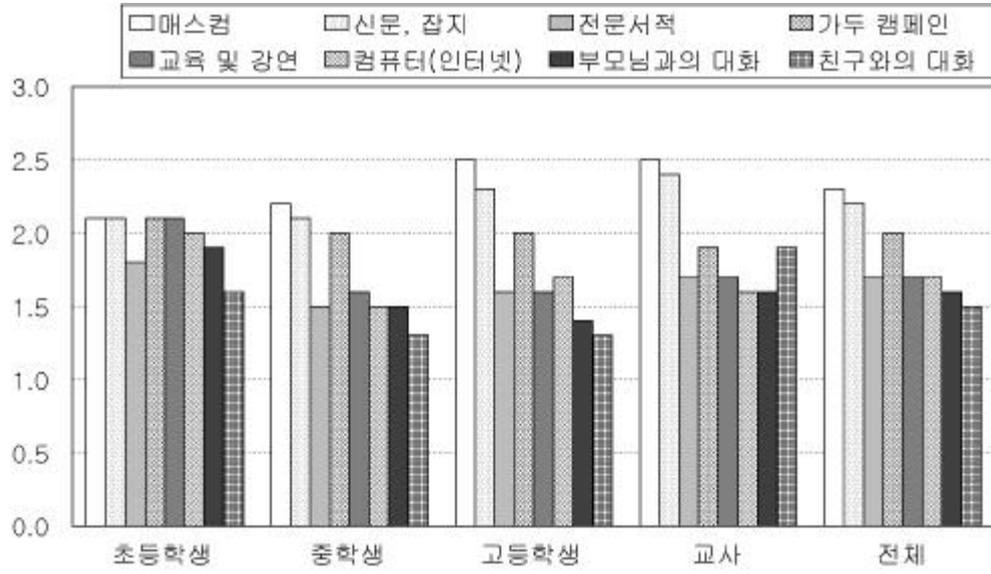
(11).

4.

	(139)	(111)	(144)	(180)	(574)
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
(TV/)	3.1 ± 0.7	3.4 ± 0.7	3.5 ± 0.7	3.8 ± 0.5	3.5 ± 0.7
,	3.1 ± 0.8	3.1 ± 0.9	3.2 ± 0.8	3.5 ± 0.6	3.3 ± 0.8
	2.9 ± 0.9	2.5 ± 0.9	2.6 ± 0.9	2.7 ± 0.8	2.7 ± 0.9
(,)	2.8 ± 0.9	2.7 ± 0.9	2.7 ± 0.9	2.8 ± 0.8	2.8 ± 0.9
	3.2 ± 1.0	2.8 ± 1.0	2.6 ± 0.9	3.1 ± 0.8	3.0 ± 0.9
( )	3.0 ± 1.0	2.7 ± 1.1	2.7 ± 0.9	2.9 ± 0.8	2.9 ± 1.0
	2.9 ± 1.0	2.4 ± 1.0	2.2 ± 1.0	2.8 ± 0.9	2.6 ± 1.0
	2.4 ± 1.0	2.0 ± 1.0	1.9 ± 0.9	2.9 ± 0.8	2.4 ± 1.0

11.

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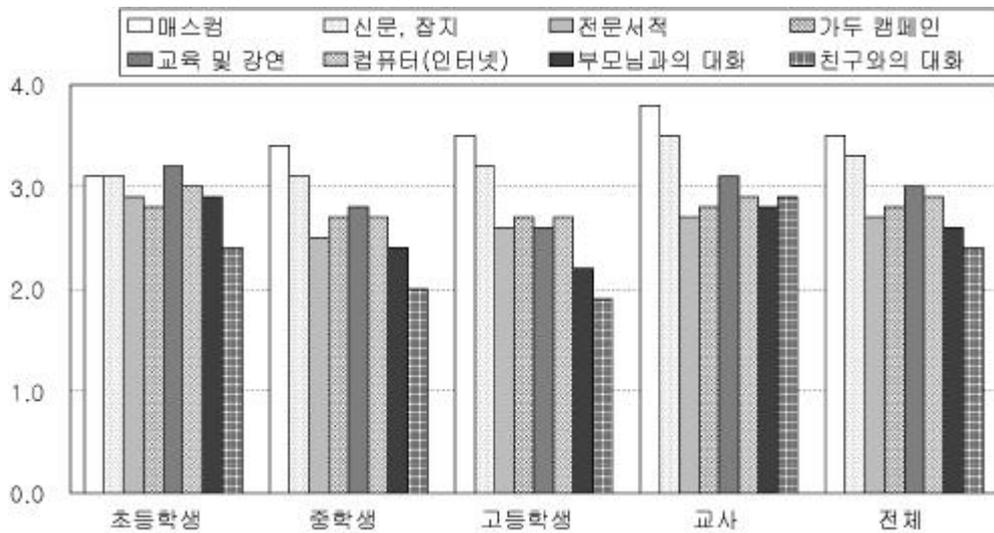
27.3％(38),

63.3％(88)   90.6％(126)   ,

.   97.8％(176)

(5).

5.

	(%)		(%)		(%)		(%)			
	38	(27.3)	88	(63.3)	11	(7.9)	2	(1.4)	139	(100)
	7	(6.3)	67	(60.4)	34	(30.6)	3	(2.7)	111	(100)
	14	(9.7)	91	(63.2)	34	(23.6)	5	(3.5)	144	(100)
	68	(37.8)	108	(60.0)	4	(2.2)	0	(0.0)	180	(100)
	127	(22.1)	354	(61.7)	83	(14.5)	10	(1.7)	574	(100)

초등학생 27.3 63.3 7.9 1.4
중학생 6.3 60.4 30.6 2.7
고등학생 9.7 63.2 23.6 3.5
교 사 37.8 60 2.2

12.

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(6).

75%

,   98%
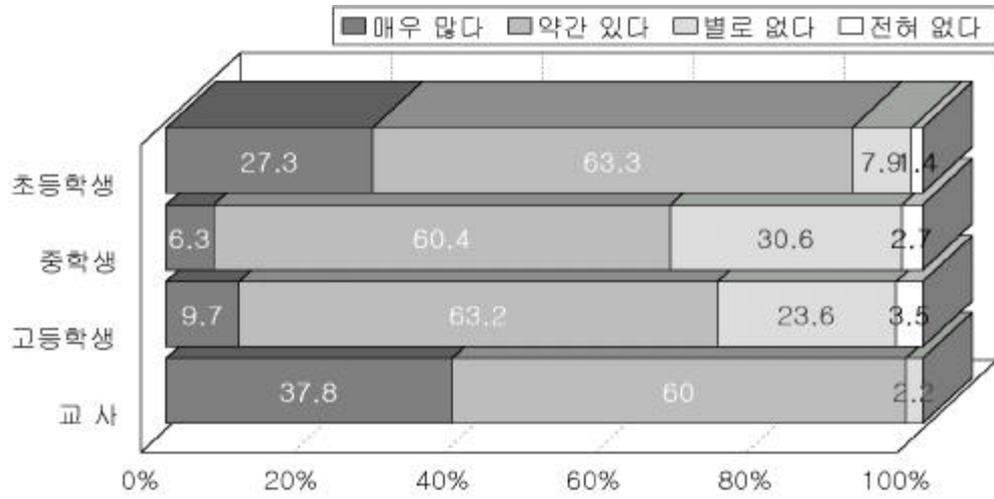
(13).

6.

	(%)		(%)		(%)		(%)		
111	(79.9)	26	(18.7)	2	(1.4)	0	(0.0)	139	(100)
91	(82.0)	19	(17.1)	1	(0.9)	0	(0.0)	111	(100)
111	(77.1)	31	(21.5)	1	(0.7)	1	(0.7)	144	(100)
159	(88.3)	19	(10.6)	2	(1.1)	0	(0.0)	180	(100)
472	(82.2)	95	(16.6)	6	(1.0)	1	(0.2)	574	(100)

13.

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67

17.0% , 85 47.2%

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74.6%

, 15.3%

. 90.0%

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177 .

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13 .

1 , o 13

(7).

13 1.9

, 1.1 , 2.5
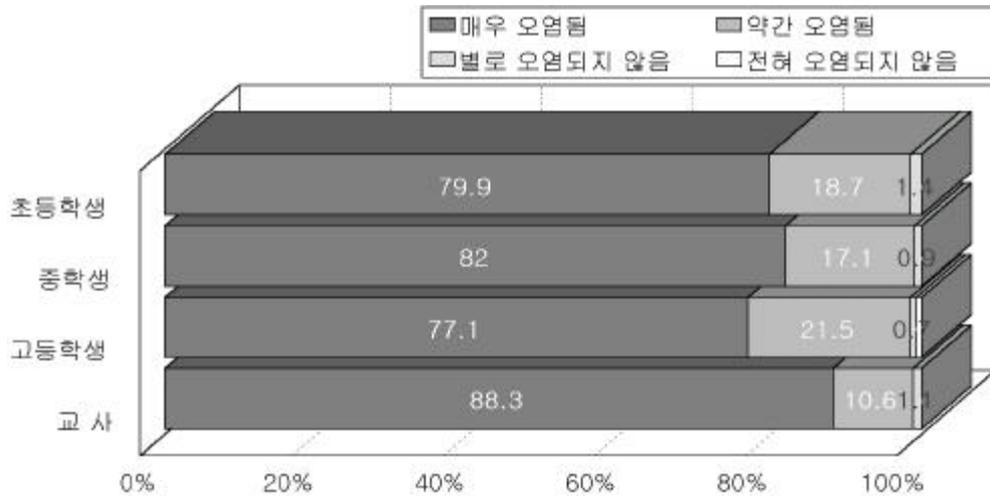
(14).

7.

	n	Mean ± SD	(min max)
	139	2.2 ± 2.3	(0.0 9.0)
	111	1.1 ± 1.4	(0.0 5.0)
	144	1.5 ± 1.7	(0.0 9.0)
	180	2.5 ± 2.3	(0.0 12.0)
	574	1.9 ± 2.1	(0.0 12.0)
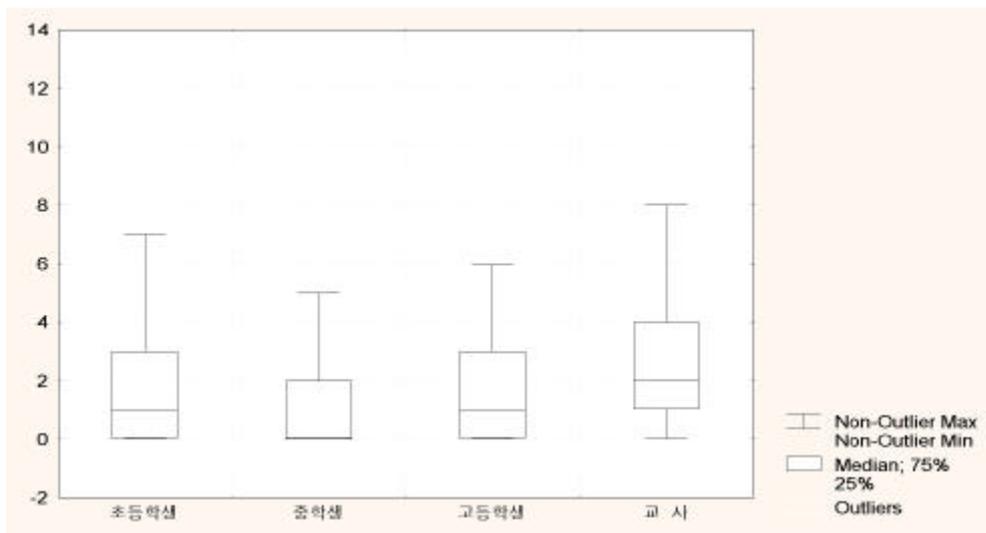
14.

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,

(8).

87.7%

69.4％

.

8.

		(%)		(%)		(%)		(%)	
	61	(44.5)	64	(46.7)	8	(5.8)	4	(2.9)	137
	23	(20.7)	62	(55.9)	13	(11.7)	13	(11.7)	111
	44	(30.6)	75	(52.1)	19	(13.2)	6	(4.2)	144
	125	(69.4)	48	(26.7)	6	(3.3)	1	(0.6)	180
	253	(44.2)	249	(43.5)	46	(8.0)	24	(4.2)	572

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4   ,   3   ,

2   (15).

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9   ,   29   .
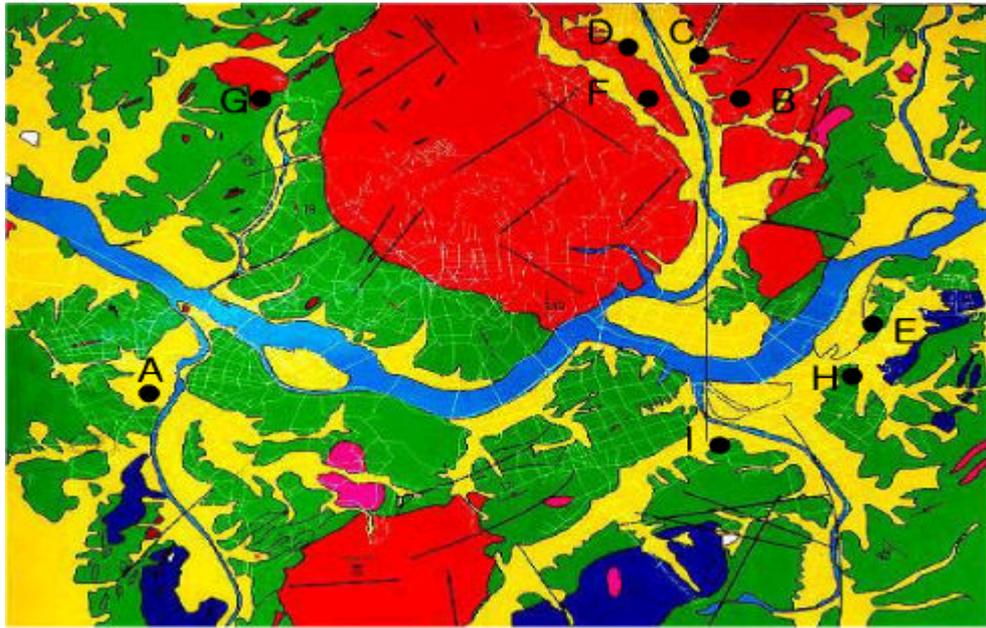
| 화강암 | 편마암 | 충적층 |

A B :   C E :   F I :

15.

.

1.67pCi/L

14.20pCi/L   ,   2.00 4.00pCi/L

(16).
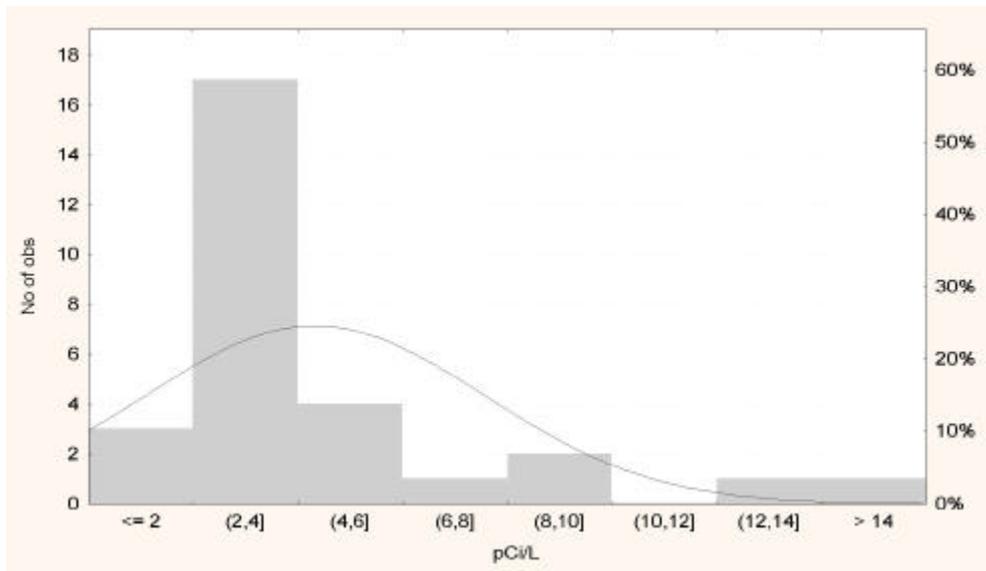
16.

4.32± 3.24pCi/L   ,

I   8.24± 6.00pCi/L

,   1.98pCi/L   C

(9).

9.

	n	Mean ±	SD	(min	max)
A	4	5.10 ±	1.59	(3.70	7.18)
B	3	3.54 ±	0.96	(2.67	4.56)
C	2	1.98 ±	0.32	(1.76	2.21)
D	2	5.56 ±	3.47	(3.11	8.02)
E	4	3.54 ±	1.27	(2.62	5.32)
F	4	3.06 ±	0.46	(2.57	3.65)
G	3	6.65 ±	6.64	(2.24	14.20)
H	4	2.14 ±	0.35	(1.73	2.57)
I	3	8.24 ±	6.00	(1.67	13.45)
	29	4.33 ±	3.24	(1.67	14.20)

pCi/ L

17.

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5.17±

4.07   ,   ,
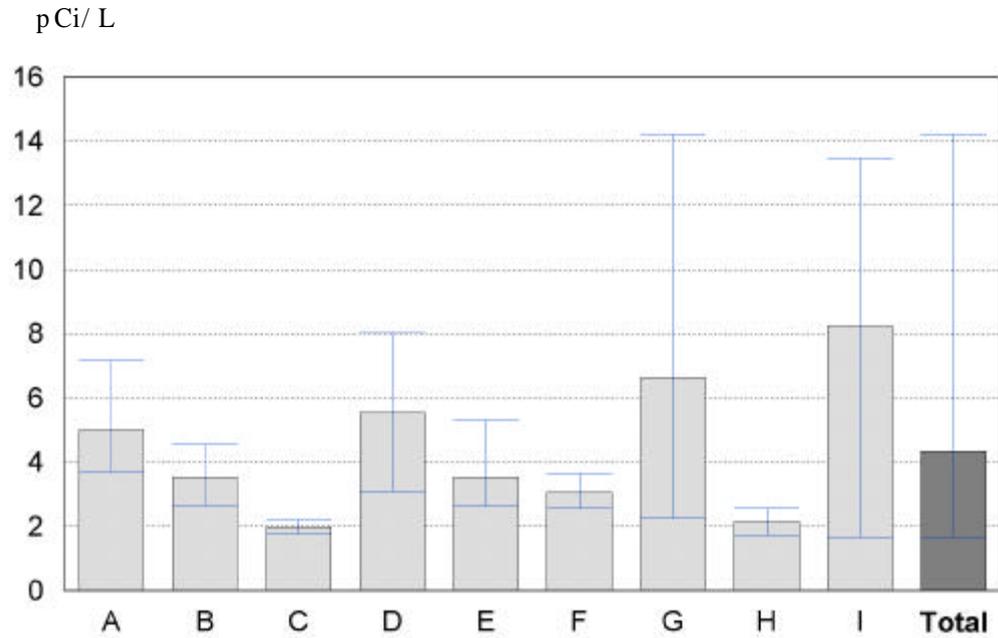
(10).

95%

.

10.

	n	mean ± SD	(min	max)
	8	5.17 ± 4.07	(2.24	14.20)
	11	4.31 ± 3.80	(1.67	13.45)
	10	3.66 ± 1.62	(1.76	7.18)

18.

4.

.

, 97.8％
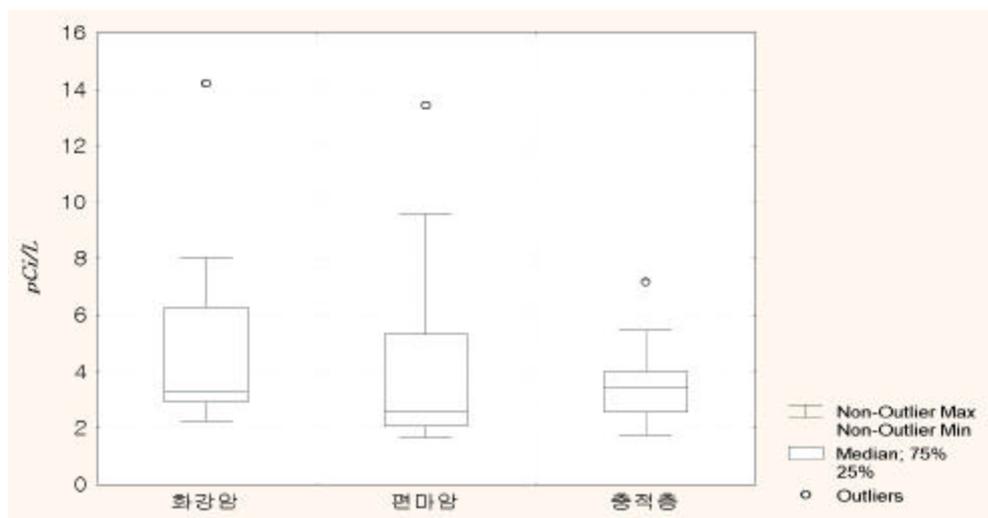
(11).

95％   .

11.

	(%)		(%)		(%)		(%)		
	22	(19.3)	77	(67.5)	15	(13.2)	0	(0.0)	114
	8	(7.8)	56	(54.9)	36	(35.3)	2	(2.0)	102
	12	(7.9)	95	(62.5)	38	(25.0)	7	(4.6)	152
	38	(33.6)	73	(64.6)	2	(1.8)	0	(0.0)	113
	80	(16.6)	301	(62.6)	91	(18.9)	9	(1.9)	481

| | 매우 많다 | 약간 있다 | 별로 없다 | 전혀 없다 |

초등학생	19.3	67.5	13.2	
중학생	7.8	54.9	35.3	2
고등학생	7.9	62.5	25	4.6
교 사	33.6	64.6	1.8	

19.

.
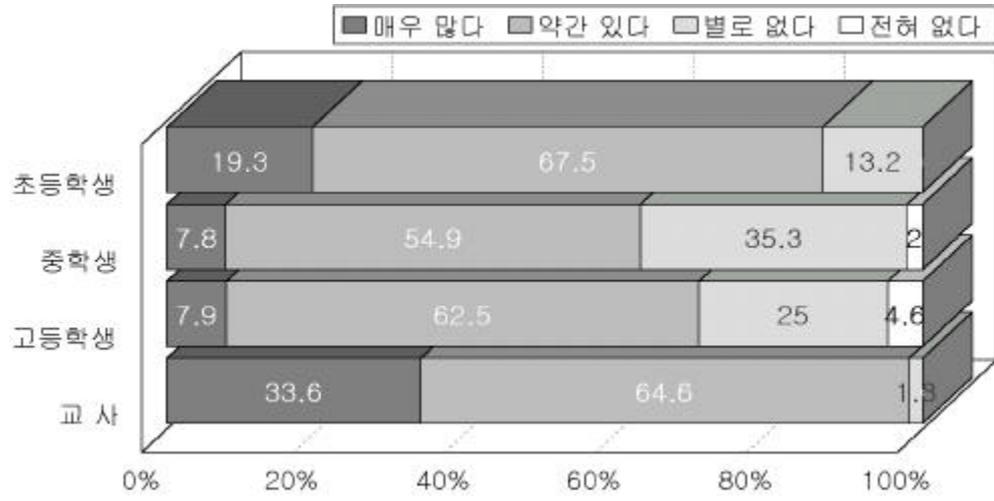
2   477   (99.2%)

(12).

95%

.

12.

	(%)		(%)		(%)		(%)	
86	(75.4)	28	(24.6)	0	(0.0)	0	(0.0)	114
63	(61.8)	37	(36.3)	2	(2.0)	0	(0.0)	102
114	(75.0)	36	(23.7)	2	(1.3)	0	(0.0)	152
95	(84.1)	18	(15.9)	0	(0.0)	0	(0.0)	113
358	(74.4)	119	(24.7)	4	(0.9)	0	(0.0)	481

20.

.

88.4%
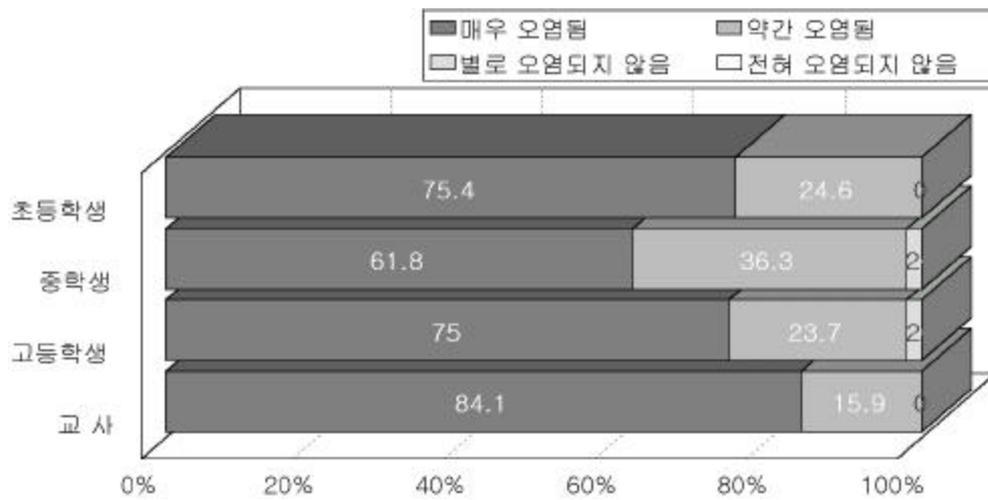
,   99.1%

(13).

,   95%

(p<0.05).

13.

	(%)		(%)		(%)		(%)	
59	(51.8)	45	(39.5)	6	(5.3)	4	(3.5)	114
18	(17.6)	65	(63.7)	14	(13.7)	5	(4.9)	102
36	(23.7)	90	(59.2)	20	(13.2)	6	(3.9)	152
79	(69.9)	33	(29.2)	1	(0.9)	0	(0.0)	113
192	(39.9)	233	(48.4)	41	(8.5)	15	(3.1)	481

.

,

,   ,

(14).

13   6.0± 4.2   ,

7.2± 4.5   ,   (4.7

± 3.9)   (21).

14.

	n	Mean ± SD	(min	max)
	114	5.7 ± 3.9	(0.0	13.0)
	102	4.7 ± 3.9	(0.0	13.0)
	152	6.3 ± 4.2	(0.0	13.0)
	113	7.2 ± 4.5	(0.0	13.0)
	481	6.0 ± 4.2	(0.0	13.0)

21.

5.

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'0'   '10'   11

(15).

(p<0.005),   4.07

7.21

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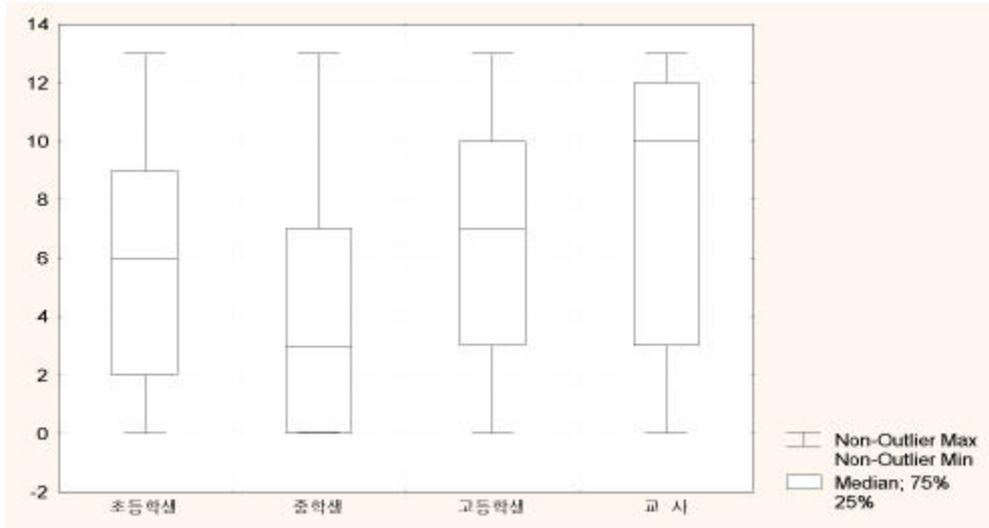
8.13   7.34   ,

(p=0.0154).

15. .

	7.17	4.47	4.07	6.96
	7.60	6.96	7.21	7.26
	0.43	2.49	3.14	0.30
p-value	0.1320	0.0001	0.0002	0.1999
	7.04	6.87	7.51	8.13
	7.29	6.62	7.07	7.34
	0.25	-.025	-0.44	-0.69
p-value	0.3809	0.5155	0.0001	0.0154

22.

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53.9%(233　)

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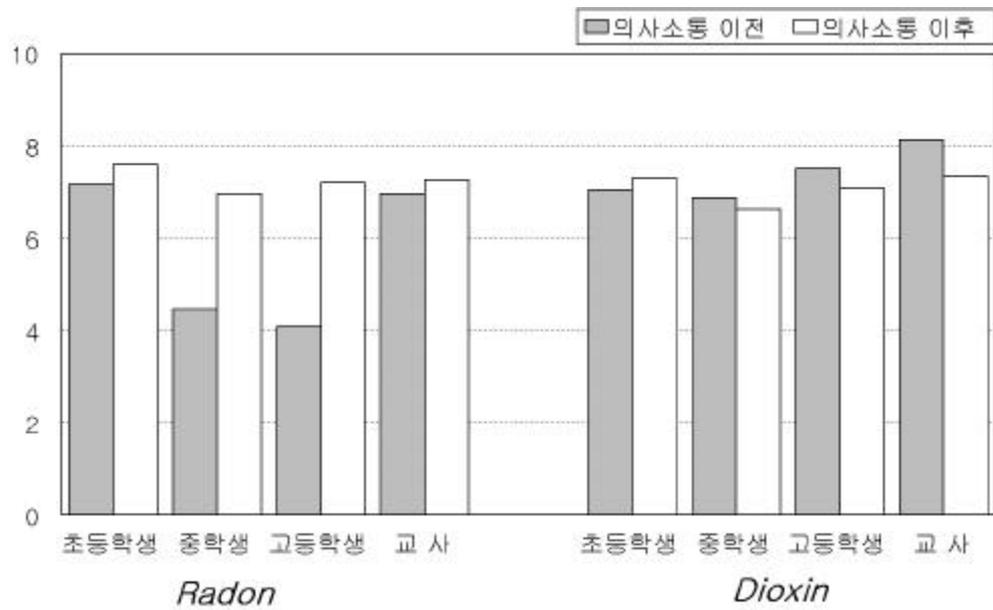
42.0%(185　)　　　　　　　　　　　　　　　　(　16).

16.

	(%)	(%)	(%)	
	42 (32.8)	58 (45.3)	28 (21.9)	128
	14 (17.7)	44 (55.7)	21 (26.6)	79
	9 (8.1)	69 (62.2)	33 (29.7)	111
	19 (16.7)	62 (54.4)	33 (28.9)	114
	84 (19.4)	233 (53.9)	115 (26.6)	432
	41 (38.0)	45 (41.7)	22 (20.4)	108
	39 (42.4)	22 (23.9)	31 (33.7)	92
	62 (44.0)	45 (31.9)	34 (24.1)	141
	43 (43.0)	44 (44.0)	13 (13.0)	100
	185 (42.0)	156 (35.4)	100 (22.7)	441

26.6%
같 다

19.4%
라 돈

다 이 옥 신
54.0%

42.0%
라 돈

같 다
22.7%

다 이 옥 신
35.4%
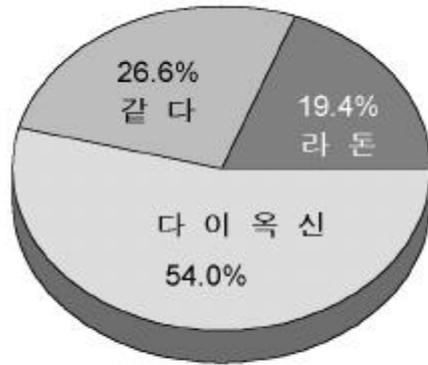
Before Risk Communication   After Risk Communication
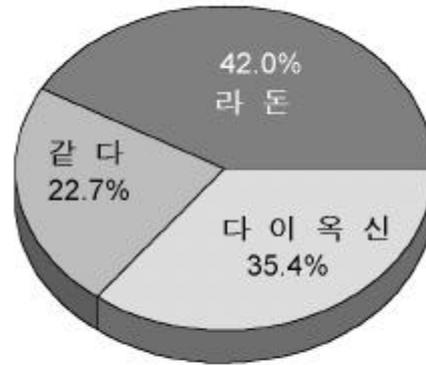
23.

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,

95 %

(17).

(5.0 pCi/ L   ),   (3.0   4.0 pCi/ L),

(3.0 pCi/ L   )

(p = 0.0001).

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,   ,

(p = 0.0001).

.

17.

			3.0 pCi/ L 3.0 5.0 pCi/ L					
			5.0 pCi/ L					
1.77	2.47	3.88	1.87	1.46	0.43	2.49	3.14
(0.1370)			(0.0005)		(0.0001)		
-0.41	0.08				0.24	-0.25	-0.44
(0.1829)					(0.3038)		

( ) : p-value

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,

(18).

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18.

	2.2	1.1	1.5	2.5	1.9
	5.7	4.7	6.3	7.2	6.0
	3.5	3.6	4.8	4.7	4.1
p-value	0.0001	0.0001	0.0001	0.0001	0.0001

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1   35

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(P<0.05;   19).

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19.

	23.88	20.17	19.38	24.33
	24.41	22.93	20.54	26.41
	0.53	2.76	1.16	2.08
p-value	0.3266	0.0002	0.0260	0.0002

24.

20.

	A	B	C	D	E	F	G	H	I	J	K	L	M
A	1.0000												
B	.134*	1.0000											
C	-.253**	-.704**	1.0000										
D	-.043	-.146*	-.081	1.0000									
E	-.054	.033	-.240**	.597**	1.0000								
F	-.091	-.137*	.173**	-.037	-.064	1.0000							
G	-.149	.083	-.005	-.194	-.000	.092	1.0000						
H	-.106	.130*	-.099	.071	.050	-.174**	-.020	1.0000					
I	.016	.147*	-.199**	.078	.123*	-.392**	-.046	.266**	1.0000				
J	.087	-.272**	.274**	-.147*	-.198**	.061	-.055	-.027	-.051	1.0000			
K	.078	.017	-.088	-.017	-.012	.022	-.039	-.047	.004	.280**	1.0000		
L	-.001	-.006	.035	-.095	-.022	.054	-.053	-.123*	-.061	.076	-.008	1.0000	
M	.107	.052	.101	-.026	-.118	-.097	-.165**	.043	-.023	.133*	-.091	.021	1.0000

* p<0.05   ** p<0.01

A :   H :
B :   I :
C :   J :
D :   K :
E :   L :
F :   M :
G :

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                                        18%   , F   6.257   (

21).   (·   ·   ),

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21.

			p-value
	1.5306	0.3141	0.0001
	0.3359	0.0721	0.0001
R-square		0.2186	
Adj R-square		0.1837	
F		6.257*	

*p=0.0001

5% , F 2.320 (22).

,

, .

22.

			p-value
	-0.7069	0.2748	0.0107
	0.2408	0.0518	0.0001
R-square		0.0940	
Adj R-square		0.0535	
F		2.320*	

*p=0.0100

10% ,

F 3.351 (23). ,

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23.

			p-value
	-0.7608	0.3053	0.0123
	-0.8719	0.4083	0.0337
	-1.1952	0.4934	0.0162
	0.1948	0.0786	0.0139
R-square		0.1410	
Adj R-square		0.0989	
F		3.351*	

*p=0.0002

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(Risk Communication Program)

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(Curbow et al.,

1994)

(Risk Management)   .

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(Area residents)   ,   ,   TV

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(Chess et al., 1988).

, Connelly

Knuth (1998) ,

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(Connelly and Knuth, 1998)

, 98 %

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(US

EPA) , , ,

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,   .

,   4.33± 3.24 p Ci/

(

24).

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24.

: pCi/

817		1.46	Nero et al. (1986)
22		1.89	Sorensen et al. (1985)
15,000		4.32	Stranden (1987)
765	-	2.05	Rannon et al. (1985)
10		1.29± 0.63 (0.54 2.57)	Gonzalez et al. (1997)
-	,	1.93± 1.19 (0.61 5.01)	Planinc et al. (1999)
15		0.92± 0.82 (0.00 5.94)	(1999)
29	**· ·**	**4.33± 3.24 (1.67 14.20)**	

,

(Mcclelland et al., 1991),

.

10   5.67   ,

            7.39   ,

                                                            7.29   ,

7.08   .

            53.9%   ,

                                    42.0%   ,

                                    35.4%   .

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                                                                                            ,

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(1992)

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,   ,   (, 1992).

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.   (Communicator)

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2000   5   6   .

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,   90%

,   90%

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4.07   7.21

(p<0.005).

8.13   7.34

(p=0.0154).

(p=0.0001),

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(p<0.05),

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1992.

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1

1.   :   ___   ___

2.   :   _____

3.   : _____

4.   : _____

5.   .
   5-1.   (V   )
                                 (   )   (   )

   5-2.   ?
     ①   ②   ③   ④

   5-3.   ?
     ①   ②   ③   ④

6.   .
   6-1.   ?
     ① 100   ② 100-200   ③ 200-300
     ④ 300-400   400

     7   ,

7.   ?
   ①   ②   ③   ④

8.   ?
   ①   ②
   ③   ④

9.   ?

10.   ·   ·   ?
   ①   ②
   ③   ④
11.   v
              ·

                                    ①   ②   ③
11- 1.   (T V/   )
11- 2.   ,
11- 3.
11- 4.   (,   )
11- 5.
11- 6.   (   )
11- 7.
11- 8.

12.

                              v   .
                              ①   ②   ③   ④

12- 1.   (T V/   )
12- 2.   ,
12- 3.
12- 4.   (,   )
12- 5.
12- 6.   (   )
12- 7.
12- 8.

13.   ?

   13-1.   ?

14.   ?

                                          v   .
   ├──┼──┼────┼────┼────┼────┼─────┼─────┼─────┼─────┤

15.   _____   ?

16.   _____   ?

17.   _____ ?

              ,

18.   ?

18- 1.   .
     (   )

19.   ?

19- 1.   .
     (   )

20.   ?

20- 1.   ?

21.   ?

                                        v   .

|———|——|——————|——————|——————|——————|——————|——————|——————|——|

22.   _____   ?

23.   _____ ?

                                                                                .
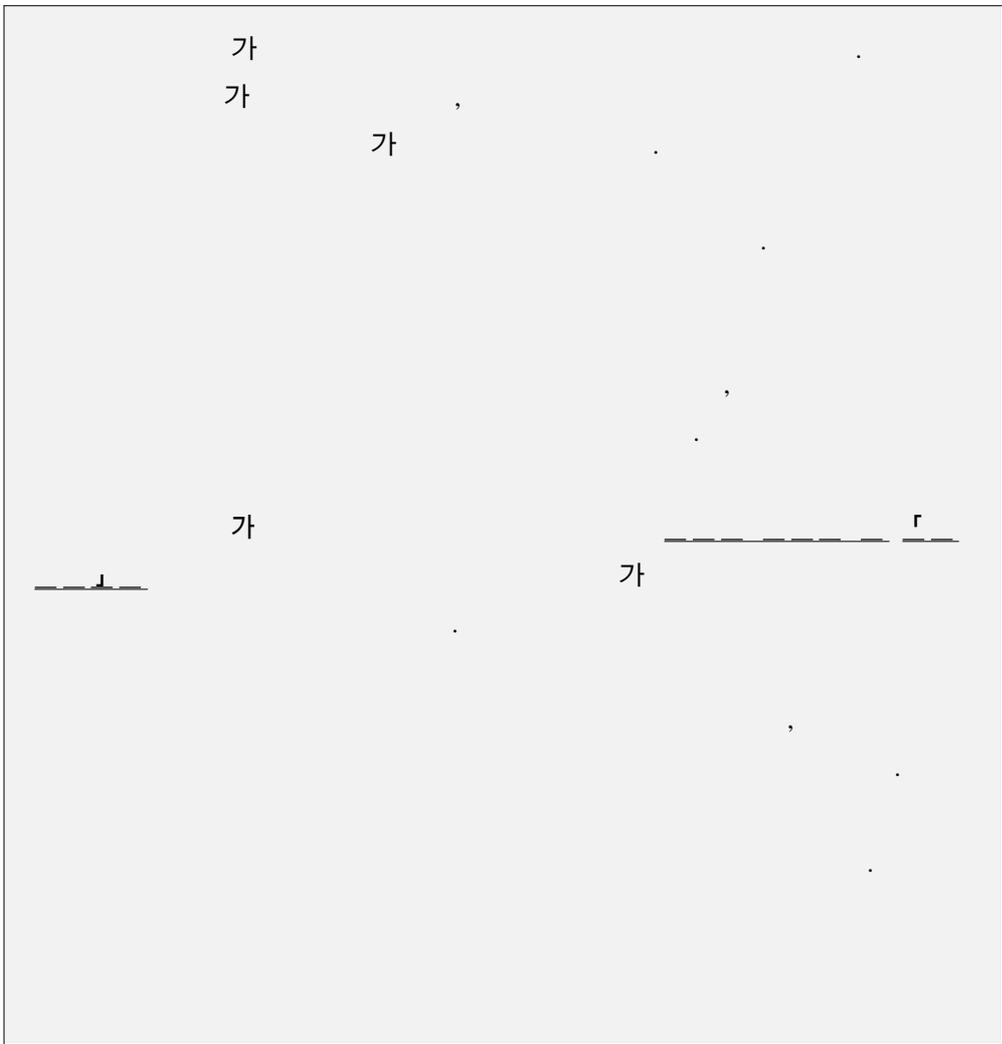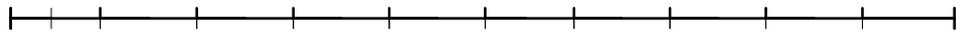
24.

                        ?

   24‑1.   .
       (   )

25.   ?

   25‑1.   .
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26.

                        ?   (, =,   )
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27.

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                  ①   ②   ③   ④

27‐1.   .

27‐2.

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27‐3.   .

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27‐5.   ———
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27‐6.

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2

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2000．5．

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(risk management)

(risk communication)

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1   2   , _____

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. (Radon, Rn)

1.

-238(U-238)   -   -226 (Ra- 226)

A, B, C   (Radon daughter)
(Pb)

2.

(   ),   (   ),   (   )

3 .

,

4 .

,

,

5 .

1,000

15

(US EPA)

20%   (st

6 .

(pCi/)	(1,000)			
200	440 - 770	1000		60
				4 /
100	270 - 630	100		2,000 chest x-ray/
40	120 - 380			
20	60 - 210	100		2 /
				1 /
10	30 - 120	10		
4	13 - 50			5
2	7 - 30	10		200 chest x-ray/
1	3 - 13			
0.2	1 - 3			20 chest x-ray/

<   >

4pCi/

100   1   5

4pCi /

폐 암

100   1   5

20pCi/   1

7 .

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1.

<   E- PERM Device >

2. 1

< AlphaGUARD >

3.

4.

8 .

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Ⅷ. 다이옥신(Dioxin)

1.

(polychlorinated dibenzo-p-dioxins, PCDDs): 75
(polychlorinated dibenzofuran, PCDFs): 135

<   >

2.

(25)

3.

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4.

,   ,

5.

binding site

,

, ,   ,   ,

6.

(US EPA) : group B1

(IARC) : group 2A   1998   group 1

(   )

210   2,3,7,8-TCDD

1	A	
2A	**B 1**	
	B2	
2 B	C	
3	D	
4	E	,

<   >
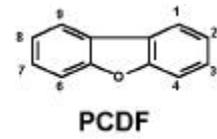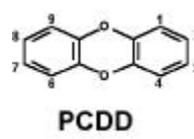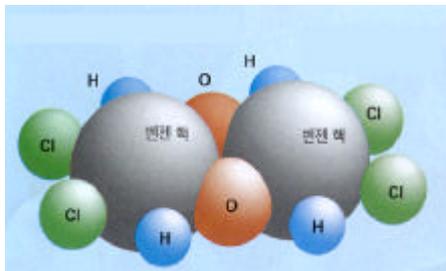
노출량 (ng/kg)	대상	건강 영향
7	원숭이	면역반응의 변화
14	사람	당 조절 능력의 변화
14	사람	고환의 크기 감소
19	원숭이	학습 장애
54	원숭이	자궁 내막증
64	쥐	정자수 감소
83	사람	테스토스테론 감소

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1ng = 1000pg

신문이나 TV 등의
매스컴을 통해
알려진 다이옥신의
위험 정도

실제 다이옥신의
위험 정도

다이옥신

저 울

흡 연		열명중에 1명이 암에 걸릴 확률
라 돈 1pCi/L		천명중에 5명이 암에 걸릴 확률
다이옥신 1pg/m³		십만명중에 3명이 암에 걸릴 확률

0   10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1}
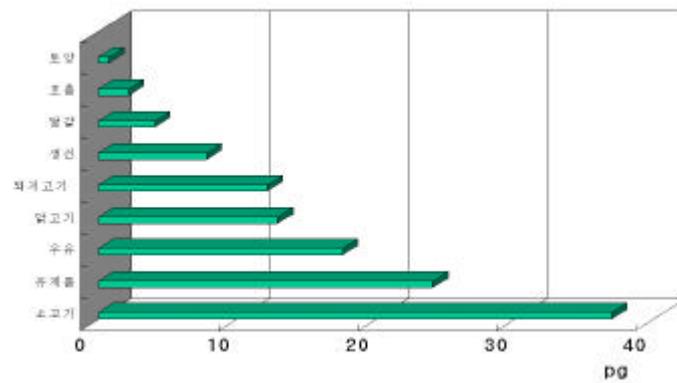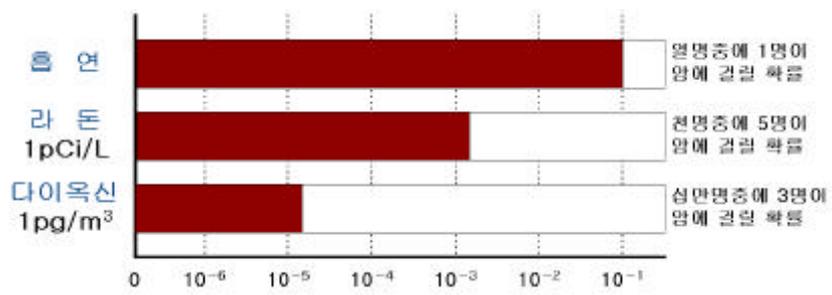
1999   15   : 0.92 pCi/ L
1999   : 0.056 pg/ m^3
(   )

| 라 돈 | 천명중에 5명이 암에 걸릴 확률 |
| 다이옥신 | 백만명중에 2명이 암에 걸릴 확률 |

0   10^{-6} 10^{-5} 10^{-4} 10^{-3} 10^{-2} 10^{-1}
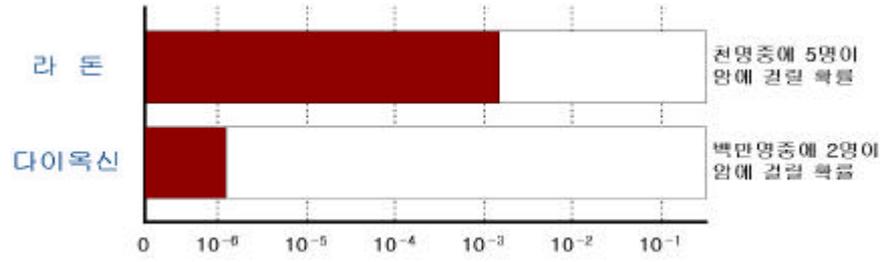
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ABSTRACT

A Study of Risk Communication and Risk Perception in Environmental Problems

Jin-Yong Kim

Dept. of Environmental Management

The Graduated School

Health Science & Management

Yonsei University

(Directed by professor, Dong-Chun Shin, M.D., Ph.D.)

Risk communication can be defined as the exchange of information about the nature, magnitude, significance, acceptability, and management of risk.

The effect of risk communication on the perception and knowledge towards risk of environmental pollutants and it's related factors were investigated in this study.

To investigate perception and knowledge of students and teachers towards risk of environmental pollutants, we conducted the survey using self-administrated questionnaire. The subjects were 574 for the first survey and 465 for the seconds survey form May to June, 2000.

The main methods of transmission used in this study-through video tape, visual materials, question and answer, and participation in measuring

pollutants-were not a one-way street. but an interactive process where information and opinions were exchanged among individuals, groups, and institutions.

Environmental pollutants measured with participating of study subjects was Radon in the class room. The concentration of Radon was measured using E-PERM Device by installing it at each site for about 5 days.

It was found that study subjects derived the environmental information mostly from mass media such as television and radio and those media were thought to be most effective way to provide information.

Subjects showed much interest in environmental pollution. Also, more than 98% of total subjects were perceived as Korea is seriously contaminated in the present and about 87.7% were aware of importance of environmental education.

The average concentration of Radon in the classroom was 4.32 ± 3.24 pCi/L and the difference in radon concentration between measuring sites was the one of factors which affect the perception and knowledge about environmental risk.

By risk communication act, risk perception of all subjects about Radon was increased, on the other hands, risk perception of Dioxin was decreased except for elementary student.

Moreover, knowledge of all subjects about environmental risk was significantly increased($p=0.0001$) and effort of reducing environmental pollution was more increased($p<0.05$).

Factors affecting the perception of environmental pollutants were not differed by subjects.

The knowledge about Radon and Dioxin was increased as the concentration was Radon was increased, the level of interest in environment was increased, and the level of severity of environmental contamination of Korea was increased.

Key words :   risk communication, risk perception, risk management,

environmental health education, radon, dioxin