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The Relationship between Life Skills and Health Risk Behaviors among Upper Elementary Students[1)]

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< ABSTRACT >

Helping teens acquire life skills applicable to daily life in addition to knowledge or desirable attitudes is essential in health education to lessen their health risk behaviors. The purpose of this study was to determine upper elementary students' life skills and health risk behaviors and to identify factors, including variables associated with life skills, influencing their health risk behaviors. 190 of fifth and sixth graders was recruited from two elementary schools in Korea. Between September and October 2017, Data were collected using a structured questionnaire and analyzed (i.e, descriptive statistics, t-test, one-way ANOVA, and multiple regression analysis). Demographic differences in life skills (self-esteem, critical thinking, decision-making, and communication skills) were significant. Multiple regression analysis of factors impacting elementary students' health risk behaviors indicated an explanatory power at 23.9% of the model. Decision-making skills, gender, academic achievement, and critical thinking skills about media were variables influencing elementary students' health risk behaviors. The participants possessed inadequate life skills, and their health risk behaviors were influenced by their life skills, substantiating the need to develop and utilize educational programs based on life skills in health education.

Key Words : Decision-making skills, media critical thinking, health risk behaviors, youth

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초등학교 고학년 학생의 라이프스킬 수준과 건강위험행동 간의 관련성[1)]

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< 요 약 >

지식이나 바람직한 태도 형성을 뛰어넘어, 일상생활 속에서 적용할 수 있는 라이프 스킬의 습득은 청소년들의 건강위험행동을 줄이기 위한 건강교육에 필수적이다. 이에 본 연구는 한국 초등학생의 인지된 라이프스킬과 건강위험행동에 영향을 미치는 요인을 파악하고자 한다. 이를 위하여 서울과 경기 지역의 초등학교 2개 교의 5, 6학년 학생 200명을 무선표집하여 구조화된 설문조사표를 이용하여 2017년 9월~10월까지 설문을 실시하였다. 최종 수집된 190명의 자료는 SPSS/WIN 23.0 통계 프로그램을 이용하여 서술통계, t-test와 one-way ANOVA, 다중회귀분석을 실시하였다. 연구 결과, 초등학교 고학년 학생들의 라이프스킬 (자아존중감, 비판적 사고 스킬, 의사결정스킬, 스트레스대처 스킬) 인식 수준은 대상자의 인구사회학적 특성에 따라 유의한 차이를 보였다. 이들의 건강위험행동에 영향을 미치는 요인은 의사결정스킬 수준, 성별, 학업성취도, 미디어에 대한 비판적 사고 스킬 수준이었고, 23.9%의 설명력을 보였다. 초등학교 고학년 학생의 경우 인지된 라이프스킬의 수준이 높지 않고, 건강위험행동을 하는데 있어 의사결정스킬과 비판적 사고와 같은 라이프스킬이 습득된 정도와 성별, 성적에 따라 영향을 받으므로 보건교육에 있어서 라이프스킬을 기반으로 하는 교육 프로그램의 개발 및 적용이 요구된다.

주요어 : 의사결정스킬, 미디어 비판적 사고, 건강위험행동, 청소년

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Ⅰ. Introduction

The Korean children living in the era of change and development are exposed to the intensely competitive society to be winners in the flood of rapidly changing knowledge rather than living to seek their own internal motivation and satisfaction. The school-aged children, because of these social influences leading to excessive expectation to them by their parents, suffer from excessive pressure on their studies and strive only for academic improvement and success while their free will and self-controlled choices are neglected (Kang, Kim, & Song, 2009). As a result, they choose health risk behaviors such as game and internet addiction, smoking, and drinking as a measure for escape from career anxiety and stress relief (Dowdell, Posner, & Hutchinson, 2011), leading to loss of self-control, reality judgment, and interpersonal skills (Hale & Viner, 2016).

The 2017 Youth Health Behavior Online Survey (Korea Centers for Disease Control and Prevention, 2017), which was conducted among 67,983 teens across the country, revealed that 2.6% and .9% of male and female participants had smoked when they were elementary students, respectively. Further, 20.2% and 13.4% of male and female participants had consumed alcohol when they were elementary students, respectively. In addition, .9% of elementary students were at risk for game addiction. Notably, the percentage of elementary students who were at risk for internet gaming addiction had continuously increased from .6% in 2012 to .9% in 2016. This is associated with the fact that children start to play games at younger ages with increasing accessibility to games due to the use of mobile devices. It has been reported that risk behaviors formed in older elementary school years can threaten the health of teens because such behaviors can become fixed over time. Once behavioral habits have been formed, it is difficult to break them. Health and risk behaviors are strongly interrelated (Botvin, Baker, Dusenbury, Tortu, & Botvin, 1990; Kawabata, 2009).

These health-related problems of adolescents are continuously increasing and the onset age is decreasing. It is important, therefore, to help them to grow into creative talents who can be effective in self-control by preventing and mediating, in adolescence, their health risk behaviors in advance that may continue to adulthood.

As an approach to learners' whole-person development, life skills training grounded on

positive youth development (PYD) has recently drawn attention (Sancassiani et al., 2015). Life skills training programs underpinned by PYD based on positive psychology advocate the perception of teens as active agents full of potential and the approach to facilitate their growth, breaking away from traditional adherence to instrumental and passive approach intended to prevent and rectify adolescent problem behaviors (Hodge, Kanters, Forneris, Bocarro, & Sayre-McCord, 2017).

According to the World Health Organization (WHO), life skills are ‘the ability to adapt and respond positively to the demands and challenges of everyday life’ (WHO, 2003), and United Nations Children’s Fund (UNICEF) has announced that a lifestyle-based education approach is effective for addressing health problems such as smoking, drinking, drug, and sex among adolescents (UNICEF, 2000). Life skills can be regarded as education that improves students’ self-esteem, self-efficacy, and motivation in the sense that it emphasizes ‘psychosocial skills’, which include personal skills such as self-awareness and interpersonal skills, as well as mental skills, such as choosing the right behavior, problem solving, and critical thinking (WHO 2003). Thus, life skills training can help teens acquire useful and practical cognitive, behavioral, and real-life skills (e.g., goal setting, decision-making, critical thinking, communication skills, stress management skills), which will play an indispensable role in enhancing their functioning across different contexts (e.g., schools, families, communities) and transfer those skills to daily life so that they can develop into independent members of society and create positive values in the future (Taylor, Oberle, Durlak, & Weissberg, 2017).

In Korea, educational programs involving life skills for preventing health risk behaviors have hardly been documented except a manual published by the Korean Association Against Drug Abuse on substance abuse prevention based on life skills as part of its project to fight drugs in 2006 (Korean Association Against Drug Abuse, 2006) and some reports on its effect in enhancing life skills via Physical Education classes (Chung, 2011; Kwon, 2012; Lee, 2012). Lee & Song (2013) have comparatively analyzed life skills in teens relative to their health behaviors and found that students with prior experience of alcohol consumption had poorer self-esteem and decision-making and goal-setting skills than their counterparts who had not consumed alcohol. They also found that the former scored lower in self-esteem than the latter in exposure to internet pornography (Lee & Song, 2013). Considering that effects of programs formulated to prevent health risk behaviors by virtue of life skills have been

well-documented (Crowley, Jones, Coffman, & Greenberg, 2014; Spoth, Trudeau, Redmond, & Shin, 2014; Velasco, Griffin, Botvin, Corrado, & Gruppo, 2017). Therefore, it is necessary to conduct a preliminary examination of the life skills that affect health risk behaviors of early teens. The findings can be used to develop life skills-based health education programs that are suitable for use with Korean students.

This study aimed to examine the relationship between perceived psychosocial skills related to life skills and health risk behaviors of upper elementary students. More specifically, this study had three objectives: (1) to examine demographic differences in psychosocial skills related to life skills (i.e., self-esteem, thinking critically about the media, and decision-making, goal-setting, stress management, and communication skills); (2) to examine demographic differences in health risk behaviors (i.e., smoking and drinking attitudes and internet gaming addiction); and (3) to identify the factors that influence their health risk behaviors.

Ⅱ. Method

1. Participants

The required sample size was determined using G*Power 3.1 and the following specifications: alpha = .05, effect size = .15, and power = .95. The desired sample size was 166, but we recruited 200 participants because we anticipated the drop-out rate to be approximately 15% (power = .95, Type I error: α = .05). A total of 190 participants completed the questionnaires. This number met the sample size sufficiently for data collection and analysis. The research was conducted on students from two coeducational public elementary schools in Seoul and Gyeonggi, with the participants among 5th and 6th grade being selected at random.

Of the 190 participants, 93 (48.9%) were boys and 97 (51.1%) were girls <Table 1>. The sample consisted of 103 (53.2%) fifth graders and 87 (45.8%) sixth graders. With regard to perceived health, 155 (81.6%) participants considered themselves to be healthy. In contrast, 35 (18.4%) of them perceived themselves to be unhealthy, respectively. Moreover, 177 (93.2%) participants reported feeling satisfied with their school. In response to a question

that assessed their overall sense of happiness, a vast majority (N = 171, 90.0%) of them reported that they were happy. With regard to internet game access experience, 43 (22.6%) students reported that they had accessed internet game during the last one week.

<Table 1> Demographic Characteristics of the Study Participants (N = 190)

Characteristics	Categories	n (%)
Gender	Male	93 (48.9)
	Female	97 (51.1)
Grade	Fifth	103 (54.2)
	Sixth	87 (45.8)
Perceived school performance	Above average	78 (40.0)
	Below average	114 (60.0)
Economic status	Above average	51 (26.8)
	Below average	139 (73.2)
Parental occupational status (Do both parents work?)	Yes	110 (57.9)
	No	62 (32.6)
	Don't know	18 (9.5)
Perceived health status	Healthy	155 (81.6)
	Unhealthy	35 (18.4)
Perceived body image	Thin	60 (31.6)
	Average	80 (42.1)
	Obese	50 (26.3)
Satisfaction with school	Satisfied	177 (93.2)
	Dissatisfied	13 (6.8)
Feeling happy in daily life	Happy	171 (90.0)
	Unhappy	19 (10.0)
Internet game access during the last 1-week	Yes	43 (22.6)
	No	147 (77.4)

2. Procedure and Ethical Considerations

This study was approved by the Institutional Review Board (IRB) of the institution to which the researcher was affiliated (IRB approval no.: 1041078-201707-HRSB-***-01). Using a structured questionnaire, data were collected between September and October 2017. Prior to data collection, the author obtained approval from the administrator of each school. To protect participant rights, the homeroom teacher of each class informed the students about the objectives and purposes of this study and their freedom to refuse research participation. They were also assured that their data would only be used for research purposes. The same procedure was applied for the parents of the students, with the

approval of the school, by engaging in parental correspondence, providing an explanation of the research, and securing a written agreement; this was in order to obtain their consent before conducting the survey. The participants were asked to complete the self-administered questionnaire after they submitted the informed consent forms that they and their parents were required to complete. The homeroom teachers collected the completed questionnaires and response sheets and mailed them to the author. The participants took approximately 10 to 15 minutes to complete the questionnaire.

3. Instruments

The self-administered questionnaire that was used in this study consisted of 10 items that assessed the demographic characteristics of the participants, 43 items that assessed several life skills-related psychosocial variables, and 28 items that assessed health risk behaviors-related variables.

A. Self-Esteem

The Korean version of the Rosenberg Self-Esteem Scale, which has been developed by Jeon (1974) and used for elementary students by Sim & Choi (2016), was used in this study. The original scale, which was developed by Rosenberg, assesses overall self-worth or self-acceptance and is not confined to specific domains of self-concept (Jeon, 1974). This instrument is used to measure different aspects of self-worth and self-acceptance. It consists of 10 items (i.e., five positively worded items and five negatively worded items). Responses to each item (i.e., both positively and negatively worded items) can be recorded on a 4-point Likert scale (1 = Mostly disagree, 2 = Neutral, 3 = Mostly agree, 4 = Totally agree). Responses to negatively worded items are reverse scored. Total scores can range from 10 to 40, and higher scores are indicative of higher levels of self-esteem. The Cronbach α of this scale was .82 in Sim and Choi's study and .71 in this study.

B. Media-Related Critical Thinking Skills

The Digital Media Literacy Scale for all ages, which has been developed by Ahn (2013),

consists of three domains: opportunity, competence, and citizenship. This study used a questionnaire of a critical understanding section, which is a subdomain that is subsumed under competence, and it assesses one's ability to make clear judgments about contents including one's intention and ability to use digital media. This scale consists of 10 items. Responses to each item was rated on a 5-point Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Average, 4= Agree, 5 = Strongly agree). The Cronbach α of this scale was .84 in Ahn's study and .76 in this study.

C. Decision-Making and Goal-Setting Skills

The scale used to measure decision-making and goal-setting skills for adolescents was adapted in Korean by Song. The original version was developed by Haruki, Kawabata, Nishioka, and Fukui (Song, 2009). Responses to each of the eight items that assess decision-making skills and 11 items that assess goal-setting skills can be rated on a 4-point Likert scale (1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree). Higher scores are indicative of greater use of these skills. Song reported Cronbach α values of .82 and .77 for decision-making and goal-setting skills, respectively. These values were .72 and .73, respectively.

D. Stress Management and Communication Skills

The feedback of two nursing professors and two elementary school health teachers were used to examine the content validity of the Korean adaptation of the Life Skills Training Questionnaire-Elementary School Version (LSTQ-ES), which was originally developed by Botvin et al. (1990). The questionnaire was translated in Korean by researcher and the committee consisted of 1 Education Professor, 1 nursing Professor, and 2 Elementary School Nurses verified the content validity. The content validity index of this research was 0.80. The adapted version consists of two items that assess stress management skills and two items that assess communication skills. Responses to each item can be rated on a 3-point Likert scale (1 = Disagree, 2 = Don't know, 3 = Agree). Higher scores are indicative of greater utilization of these skills. In Botvin et al.'s study, the Cronbach α of the subscales that assess stress management and communication skills were .63 and .78, respectively. In this study, they were .70 and .74, respectively.

E. Smoking and Drinking Attitudes

The Korean adaptation of the LSTQ-ES was also used to assess participants' attitudes toward smoking and drinking (Botvin et al., 1990). The questionnaire was translated in Korean by researcher and the same committee mentioned above verified the content validity. The content validity index of this research was 0.88. Four items were used to assess smoking and drinking attitudes. Responses to each item can be rated on a 4-point frequency scale (1 = Never, 2 = Sometimes, 3 = Often, 4 = Don't know). Lower scores are indicative of more negative attitudes toward smoking and drinking. In Botvin et al.'s study, the Cronbach α of the subscales that assessed smoking and drinking attitudes were .76 and .73, respectively. In this study, they were .73 and .76, respectively.

F. Internet Gaming Addiction

The Korean version of the Internet Game Addiction scale for children, which has been developed by the Korea Agency for Digital Opportunity and Promotion, consists of 20 items and three factors: a game-oriented life (six items), tolerance and a loss of control (seven items), and withdrawal and affection (seven items; Kim, Kim, & Lee, 2006). Responses to each item can be rated on a 4-point frequency scale (1 = Never, 2 = Sometimes, 3 = Often, 4 = Always). Higher scores are indicative of a greater risk of addiction. The Korea Agency for Digital Opportunity and Promotion reported that the Cronbach α of this scale was .89. In this study, it was .88.

4. Data Analysis

The collected data were analyzed using version 23.0 of SPSS for Windows. Participant characteristics were examined by computing descriptive statistics (i.e., frequencies, percentages, means, and standard deviations). Means and standard deviations were computed for self-esteem, life skills, and health risk behaviors. To identify the factors that influence health risk behaviors, a t-test and one-way ANOVA were conducted prior to multiple regression analysis. Scheffe and Duncan tests were used as post hoc analyses. Subsequently, significant variables were subjected to multiple regression analysis. Prior to

conducting multiple regression analysis, the normality and multicollinearity of variables were examined to validate the fitness of data. No evidence of unfitness of data was found.

Ⅲ. Results

1. Demographic Differences in Psychosocial Skills Related to Life Skills

Table 2 presents the results of tests of demographic differences in psychosocial skills related to life skills. There were significant differences in the self-esteem of participants who differed in academic achievement, perceived health status, and satisfaction with school and daily life. Those with a high academic achievement reported higher levels of self-esteem than those with a low academic achievement (t = 4.26, p < .001). Significantly higher levels of self-esteem were also reported by those who perceived themselves to be healthy (t = 3.94, p = .001) and were satisfied with their school (t = 4.12, p < .001) and daily life (t = 5.57, p < .001). Critical thinking skills about media were significantly higher in students who perceived themselves to be satisfied with daily life than those who were dissatisfied (t = 1.88, p = .041).

There were significant differences in the decision-making skills of participants who differed in their gender (t = -3.43, p = .001), academic achievement (t = 2.54, p = .012), and levels of satisfaction with their school (t = 3.10, p = .002) and daily life (t = 2.84, p = .005). Participants who were satisfied with their daily lives also had significantly better communication skills than those who were dissatisfied with their daily lives (t = 2.21, p = .028).

2. Demographic Differences in Health Risk Behaviors

Table 3 presents the results of tests of demographic differences in health risk behaviors. There were significant differences in the health risk behaviors of participants who differed in their gender (t = 3.32, p = .001) and academic achievement (t = -3.04, p = .003). Boys scored significantly higher than girls for health risk behaviors. Students with a high academic achievement scored low significantly than those with a below-average academic

achievement.

With regard to specific health risk behaviors, boys scored significantly higher than girls on the assessment that was used to assess smoking attitudes (t = 2.02, p = .044). Considering drinking attitudes, students with a high academic achievement scored low significantly than those with a below-average academic achievement. (t = -2.55, p = .011). Although the average level of game addition among participant was low (1.30 out of 4.0), there were significant differences in gender (t = 3.72, p < .001), graders (t = -2.26, p = .025), academic achievement (t = -3.15, p = .002), levels of satisfaction with daily life (t = -2.17, p = .031), and experience of internet game access during last one-week (t = -3.02, p = .003).

<Table 2> Psychosocial Skills Related to Life Skills as a Function of the Demographic Characteristics of Participants (N = 190)

Characteristics	Categories	Self-esteem	*t*/*F* (*p*) Scheffe test	Media-related critical thinking skills	*t*/*F* (*p*) Scheffe test	Decision-making skills	*t*/*F* (*p*) Scheffe test	Goal-setting skills	*t*/*F* (*p*) Scheffe test	Stress management skills	*t*/*F* (*p*) Scheffe test	Communication skills	*t*/*F* (*p*) Scheffe test
		M ± *SD*		*M* ± *SD*		*M* ± *SD*		*M* ± *SD*		*M* ± *SD*		*M* ± *SD*	
Gender	Male	3.25 ± .38	.32	3.45 ± .59	-.55	2.88 ± .36	-3.43	2.91 ± .42	-1.51	2.39 ± .64	-1.31	2.46 ± .46	-1.96
	Female	3.23 ± .37	(.745)	3.50 ± .49	(.580)	3.07 ± .42	(.001)	3.02 ± .55	(.130)	2.51 ± .58	(.190)	2.76 ± .39	(.051)
Grade	Fifth	3.28 ± .37	1.51	3.46 ± .55	-.29	2.97 ± .42	-.28	2.95 ± .41	-.48	2.41 ± .62	-1.07	2.73 ± .41	1.03
	Sixth	3.20 ± .38	(.130)	3.49 ± .53	(.771)	2.99 ± .38	(.773)	2.99 ± .58	(.627)	2.51 ± .57	(.284)	2.67 ± .44	(.304)
Perceived school performance	Above average	3.38 ± .36	4.26	3.53 ± .51	1.21	3.07 ± .42	2.54	3.06 ± .41	1.96	2.48 ± .54	.45	2.74 ± .42	.79
	Below average	3.15 ± .36	(< .001)	3.44 ± .56	(.225)	2.92 ± .38	(.012)	2.91 ± .53	(.051)	2.44 ± .61	(.650)	2.67 ± .42	(.296)
Economic status	Above average	3.33 ± .38	1.96	3.54 ± .61	1.04	2.99 ± .44	.237	3.05 ± .45	1.38	2.48 ± .59	.25	2.70 ± .37	.04
	Below average	3.21 ± .37	(.051)	3.45 ± .51	(.296)	2.97 ± .39	(.813)	2.94 ± .51	(.168)	2.45 ± .58	(.802)	2.70 ± .44	(.966)
Parental occupational status (Do both parents work?)	Yes	3.27 ± .36	2.62 (.075)	3.49 ± .59	.48 (.621)	2.97 ± 3.96	.09 (.910)	2.95 ± .34	.69 (.502)	2.43 ± .60	.50 (.603)	2.71 ± .38	.12 (.885)
	No	3.25 ± .37		3.48 ± .47		3.00 ± .40		3.03 ± .69		2.46 ± .62		2.69 ± .45	
	Don’ t know	3.05 ± .44		3.36 ± .46		2.97 ± .46		2.91 ± .47		2.58 ± .46		3.00 ± .00	
Perceived health status	Healthy	3.29 ± .35	3.94	3.47 ± .54	-.507	3.00 ± .39	1.17	3.00 ± .51	1.69	2.46 ± .59	.06	2.71 ± .43	.49
	Unhealthy	3.02 ± .38	(.001)	3.52 ± .53	(.613)	2.91 ± .43	(.241)	2.84 ± .41	(.092)	2.45 ± .57	(.950)	2.67 ± .40	(.622)
Perceived body image	Thin	3.33 ± .33	2.57 (.079)	3.52 ± .48	1.05 (.352)	3.06 ± .44	1.97 (.142)	3.04 ± .38	2.01 (.137)	2.58 ± .46	1.88 (.165)	2.71 ± .36	.58 (.559)
	Average	3.20 ± .41		3.41 ± .58		2.96 ± 3.97		2.99 ± .60		2.39 ± 0367		2.67 ± .48	
	Obese	3.20 ± .36		3.54 ± .54		2.91 ± .35		2.86 ± .41		2.41 ± .60		2.70 ± .42	
Satisfaction with school	Satisfied	3.27 ± .36	4.12	3.49 ± .55	1.18	3.00 ± .39	3.10	2.97 ± .39	.06	2.46 ± .59	-.23	2.71 ± .42	1.44
	Dissatisfied	2.84 ± .37	(< .001)	3.30 ± .30	(.238)	2.65 ± .38	(.002)	2.96 ± .1.28	(.947)	2.50 ± .50	(813)	2.53 ± .47	(.149)
Feeling happy in daily Life	Happy	3.29 ± .35	5.57	3.50 ± .55	1.88	3.01 ± .38	2.84	2.47 ± .59	.94	2.47 ± .59	.94	2.72 ± .41	2.21
	Unhappy	2.82 ± .31	(< .001)	3.25 ± .44	(.041)	2.73 ± .42	(.005)	2.34 ± .52	(.345)	2.34 ± .52	(.345)	2.50 ± .50	(.028)
Internet game access during the last 1-week	Yes	3.33 ± .40	1.40 (.238)	3.51 ± .49	.16 (.686)	3.11 ± .46	2.88 (.091)	3.04 ± .44	.19 (.663)	2.43 ± .62	1.15 (.252)	2.68 ± .45	1.52 (.130)
	No	3.22 ± .36		3.47 ± .56		2.94 ± .38		2.95 ± .51		2.55 ± .51		2.79 ± .31	

<Table 3> Health Risk Behaviors (Smoking and Drinking Attitudes and Internet Gaming Addiction) as a Function of the Demographic Characteristics of Participants (N = 190)

Characteristics	Categories	Health risk behaviors	t/F (p) Scheffe test	Smoking attitudes	t/F (p) Scheffe test	Drinking attitudes	t/F (p) Scheffe test	Internet gaming addiction	t/F (p) Scheffe test
		$M \pm SD$		$M \pm SD$		$M \pm SD$		$M \pm SD$	
Gender	Male	1.52 ± .38	3.32	1.77 ± .63	2.02	1.68 ± .60	1.65	1.31 ± .31	3.72
	Female	1.37 ± .24	(.001)	1.61 ± .45	(.044)	1.55 ± .45	(.100)	1.16 ± .25	(< .001)
Grade	Fifth	1.41 ± .25	-1.61	1.67 ± .48	-.54	1.59 ± .49	-.68	1.19 ± .22	-2.26
	Sixth	1.48 ± .38	(.109)	1.71 ± .62	(.589)	1.65 ± .58	(.492)	1.29 ± .35	(.025)
Perceived school performance	Above average	1.36 ± .19	-3.04	1.25 ± .55	-1.65	1.18 ± .47	-2.55	1.15 ± .19	-3.15
	Below average	1.50 ± .37	(.003)	1.42 ± .75	(.100)	1.42 ± .73	(.011)	1.29 ± .33	(.002)
Economic status	Above average	1.40 ± .36	-1.05	1.31 ± .65	-.54	1.32 ± .64	-.41	1.22 ± .32	-.42
	Below average	1.46 ± .31	(.295)	1.37 ± .69	(.589)	1.37 ± .70	(.678)	1.24 ± .28	(.669)
Parental occupational status (Do both parents work?)	Yes	1.43 ± .32	1.70	1.66 ± .57	.67	1.59 ± .49	1.80	1.24 ± .29	1.24
	No	1.42 ± .30	(.185)	1.69 ± .51	(.509)	1.60 ± .54	(.168)	1.20 ± .28	(.290)
	Don't know	1.58 ± .39		1.83 ± .57		1.84 ± .70		1.32 ± .35	
Perceived health status	Healthy	1.43 ± .32	-.72	1.33 ± .65	-1.04	1.32 ± .65	-.60	1.22 ± .29	-1.07
	Unhealthy	1.48 ± .33	(.472)	1.46 ± .78	(.299)	1.43 ± .69	(.546)	1.35 ± .44	(.282)
Perceived body image	Thin	1.44 ± .29	0.09	1.69 ± .54	.56	1.65 ± .52	1.03	1.21 ± .26	.95
	Average	1.45 ± .32	(.912)	1.73 ± .05	(.568)	1.65 ± .57	(.358)	1.22 ± .28	(.386)
	Obese	1.43 ± .36		1.63 ± .53		1.52 ± .49		1.28 ± .34	
Satisfaction with school	Satisfied	1.43 ± .31	-1.05	1.33 ± .67	-1.41	1.32 ± .65	-.60	1.23 ± .28	-1.39
	Dissatisfied	1.57 ± .40	(.134)	1.61 ± .76	(.160)	1.43 ± .69	(.546)	1.35 ± .44	(.166)
Feeling happy in daily Life	Happy	1.43 ± .32	-1.04	1.33 ± .67	-1.37	1.33 ± .67	.22	1.22 ± .28	-2.17
	Unhappy	1.52 ± .36	(.298)	1.56 ± .70	(.172)	1.29 ± .47	(.826)	1.37 ± .39	(.031)
Internet game access during the last 1-week	Yes	1.40 ± .22	-1.06	1.70 ± .46	.20	1.65 ± .43	.42	1.12 ± .18	-3.02
	No	1.46 ± .35	(.289)	1.68 ± .57	(.839)	1.61 ± .56	(.669)	1.27 ± .31	(.003)

3. Factors that Influence Health Risk Behaviors

To identify factors influencing elementary students' health risk behaviors, significant variables in the relationship between independent variables including general characteristics and health risk behaviors were subjected to multiple regression analysis. The explanatory power of elementary students' health risk behaviors in the model was 23.9%. The linear regression model was significant (F = 8.54, p < .001; <Table 4>). The variables that significantly predicted the health risk behaviors of elementary students were decision-making skills (β = -.19, p = .008), gender (β = .19, p = .007), academic achievement (β = -.19, p = .005), and media-related critical thinking skills (β = -.10, p = .013). In other words, poor decision-making skills, being a boy, poor academic achievement, and poor media-related critical thinking skills were associated with greater engagement in health risk behaviors.

<Table 4> Results of Multiple Stepwise Regression Analysis of the Predictors of Health Risk Behaviors among Upper Elementary Students

Variables	B	β	t	p	VIF
Decision-making skills	-.15	-.19	-2.68	.008	1.14
Gender (Male)	.12	.19	2.75	.007	1.07
Academic achievement (above average)	-13	-.19	-2.81	.005	1.04
Media-related critical thinking skills	-.10	-.17	-2.52	.013	1.03
Constant	1.54	-	7.27	< .001	-
R^2			.239		
F (p)			8.54 (< .001)		

Ⅳ. Discussion and Conclusion

The purpose of this study was to investigate the perception levels of life skills (goal setting, decision-making, media-related critical thinking, communication skills, and stress management skills) and the psychosocial skills including self-esteem and the differences in health risk behaviors (smoking and drinking attitudes and internet and gaming addictions) by their demographic characteristics and to identify the factors that influence their health risk behaviors.

The results of analysis showed that there is a difference in the perception levels of life skills and self-esteem and health risk behaviors by the demographic characteristics in upper-grade elementary school students. According to the WHO (2003), "skills that can be said to be life skills are innumerable, and the nature and definition of life skills are likely to differ across cultural settings." Our findings revealed that academic achievement, satisfaction with school and daily life, and perceived health status influenced their self-esteem. In addition, decision-making skills were influenced by gender, academic achievement, and satisfaction with school and daily life. Stress management skills were influenced by satisfaction with daily life. These results concur with the findings of past studies that have been conducted among early adolescents in India, Hong Kong, and the United Kingdom. It was reported that early adolescents' life skills were influenced by creative school environment and policies, cooperative climate with classmates (Dinesh & Belinda, 2014), school achievement (Chan, Lau, & Yuen, 2011), and perception of well-being in daily life (Cronin, Allen, Mulvenna, & Russell, 2018), but not by gender (Dinesh & Belinda, 2014).

These findings may be attributable to the environment where lots of adolescents spend many hours at school and interacting with peer groups; therefore, youth' life skills acquisition was related to all social-environmental indicators – including psychological well-being factors in schools and daily life (Cronin et al., 2018; Hodge, Danich, & Martin, 2012). In other words, satisfaction with school (including academic achievement) and daily life may be the primary factors that influence Korean early adolescents' acquisition of life skills. In this manner, they may strengthen their psychosocial resources and enable them to cope with the demands and challenges that they face in their schools effectively.

In addition, life skills have substantial effects on the initiation and persistence of health risk behaviors (e.g., drinking, smoking, playing addictive games; El Sayed, El Sattar Ali, Ahmed, & Mohy, 2019; Srikongphlee, Luvila, & Kanato, 2018; Velasco et al., 2017). Our findings revealed that poor decision-making skills and poor media-related critical thinking skills were associated with health risk behaviors; these results are consistent with past findings. Above all, decision-making skills and critical thinking skills are critical for empowering teens to self-determine their own health behaviors considering that teens are susceptible to peer or social pressures into risk behaviors (El Sayed et al., 2019; Lee, 2013; Velasco et al., 2017).

It has been reported that life skills as part of educational options could remedy the "deficit systems" of teens characterized by immature decision making and problem-solving skills in daily life unlike adults (Dinesh & Belinda, 2014). In the same vein, life skills training programs are originated from therapies for mental health issues and relevant care training programs (WHO, 2003). Therefore, acquiring life skills in teens is an overarching means of regulating the right to determine their health behaviors and act out accordingly (Dinesh & Belinda, 2014; Velasco et al., 2017).

In addition, it was shown that the health risk behaviors of early adolescents are more likely when they are boy or have low levels of academic achievement. Many previous studies have reported that gender is an influencing factor of adolescents' health risk behaviors and that male students are more apt to do health risk behaviors such as drinking, smoking, sexual behaviors, and internet game addiction than female students (Bong & Kim, 2015; Choi, Park, & Kim, 2017). The analysis of the relationship between health risk behaviors and academic achievements showed that students with higher academic achievements participated in less health risk behaviors (Choi et al., 2017). This is because academic achievement is closely related to internal developmental resources such as learning skills and self-management skills that help their self-developments during adolescence (Hwang & Jo, 2004).

The results of this study provide meaningful implications for establishing strategies of developing interventions to prevent health risk behaviors in early adolescence. The incidence rate of drinking, smoking, and sexual behaviors in upper elementary school students in their early adolescence is lower than that of high school student (KCDC, 2017). According to the results of previous studies on the developmental trajectories of

adolescents' health risk behaviors, however, it is highly probable of the onset of health risk behaviors in high school students even if they did no such behaviors in elementary and middle schools, and, for the lower-grade students with lower frequency of health risk behaviors, of increasing the frequency in upper-grade high school and continuing to adulthood (Choi et al., 2017). Despite that the early preemptive efforts are as important as than those to persuade to interrupt or strengthen enforcement after health risk behaviors has already begun, the annual experience rate of education for preventing health risk behaviors in Korean elementary school students is low, being 65.3% for smoking 65.3%, 38.8% for drinking, and 31.9% for sexuality education 71.9% (KCDC, 2017).

It is important particularly to prevent health risk behaviors that are likely to become a habit throughout life, such as smoking and drinking, and to educate healthy habits. Therefore, the development of intervention programs that consider the life skills identified in this study as influencing factors of health risk behaviors and learners' personal characteristics such as gender is needed, to help early adolescents to grow into adults who contribute to society by reducing their health risk behaviors.

This study, however, has following limitations despite the significant results discussed above: First, the sample was limited to a small fraction of students in large major cities despite its size meeting statistical requirement. Thus, the present findings cannot be generalized to the entire population of elementary students in Korea. To derive more reliable findings regarding the relationship between life skills and health risk behaviors among older elementary students in Korea, it is crucial to collect extensive data (including information about different lifestyles) from larger samples that have been sampled from a wider range of schools, including those in rural areas. In addition, in this study, life skills were assessed using self-report measures, which are vulnerable to common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). That is, rating for self-perceived life skills acquired might have affected the results due to different levels of acquired or perceived life skills based on incongruent reference points among individuals. To rectify this limitation, it is imperative to utilize additional instruments or data designed to measure acquired life skills of learners other than a self-administered questionnaire.

Helping youth form desirable attitudes toward health beyond any simple acquisition of health-related knowledge and acquire life skills that enable them to resist health risk behaviors is vital in health education to reduce their health risk behaviors (Lee, 2013).

Therefore, there was a need to explore the life skills and health risk behaviors of upper elementary students and identify the factors that influence their health risk behaviors. Regarding the results of study, upper elementary students in Korea are far from having acquired fully-fledged life skills and their health risk behaviors are influenced by the extent of their life skills including decision-making and critical thinking skills. This result suggests that health education should adopt programs focusing on life skills.

Effects of life skills applied to health education have been well-documented (Bean, Kramers, Forneris, & Camiré, 2018; Haug et al., 2017; Kawabata, 2009; Velasco et al., 2017). In particular, there is a paucity of research findings on the development and effects of educational programs that aim to prevent health risk behaviors by incorporating life skills training into health education. Therefore, the results of this study about the relationship between the life skills and health risk behaviors of elementary students and identifying factors that influence their health risk behaviors, will contribute to provide some reference data for facilitating the development of programs based on life skills apposite to Korean health education.

References

Ahn, J. I. (2013). A study on the age difference of digital media literacy. *Journal of Learner-Centered Curriculum and Instruction*, *7*(1), 1-21.

Bean, C., Kramers, S., Forneris, T., & Camiré, M. (2018). The implicit/explicit continuum of life skills development and transfer. *Quest*, *70*(4), 456-470. doi:10.1080/00336297.2018.1451348

Bong, E. J., & Kim, E. A. (2015). Effect of drinking problem and internet addition on adolescent's mental health. *Korean Journal of Youth Studies*, *22*(9), 1-23.

Botvin, G. J., Baker, E., Dusenbury, L., Tortu, S., & Botvin, E. M. (1990). Preventing adolescent drug abuse through a multimodal cognitive-behavioral approach: Results of a 3-yrs study. *Journal of Consulting and Clinical Psychology*, *58*(4), 437-446.

Chan, R. M. C., Lau, P. S., & Yuen, M. (2011). Interrelationships among teacher care, students' life skills development, and academic achievement: Implications for school guidance work. *Asian Journal of Counselling*, *18*, 63-94.

Choi, J., Park, Y., & Kim, H. K. (2017). Gender differences in developmental trajectories of health risking behaviors across late adolescence through emerging adulthood: Prediction from early adolescent factors. *The Korean Journal of Developmental Psychology*, *30*(4), 137-160.

Chung, Y. S. (2011). Constructs of life skills through taekwondo practice and the development of its measurement scale (TLSS). *Journal of the Korean Physical Society*, *50*(3), 227-237.

Cronin, L. D., Allen, J., Mulvenna, C., & Russell, P. (2018). An investigation of the relationships between the teaching climate, students' perceived life skills development and well-being within physical education. *Physical Education and Sport Pedagogy*, *23*(2), 181-196. doi:10.1080/17408989.2017.1371684

Crowley, D. M., Jones, D. E., Coffman, D. L., & Greenberg, M. T. (2014). Can we build an efficient response to the prescription drug abuse epidemic? Assessing the cost effectiveness of universal prevention in the PROSPER trial. *Preventive Medicine*, *62*, 71-77. doi:10.1016/j.ypmed.2014.01.029

Dowdell, E. B., Posner, M. A., & Hutchinson, M. K. (2011). Cigarette smoking and alcohol use among adolescents and young adults with asthma. *Nursing Research and Practice*, *503201*, 1-7. doi:10.1155/2011/503201

Dinesh, R., & Belinda, R. (2014). Importance of life skills education for youth. *Indian Journal of Applied Research*, *4*(1), 92-94. doi:10.15373/22778160

El Sayed, H. A. E., Ali, R. A. E. S., Ahmed, F. M., & Mohy, H. F. (2019). The effect of life skills intervention on social self-efficacy for prevention of drug abuse among young adolescent students at Benha City. *American Journal of Nursing Science*, *8*(5), 269-279. doi:10.11648/j.ajns.20190805.19

Hale, D. R., & Viner, R. M. (2016). The correlates and course of multiple health risk behaviour in adolescence. *BMC Public Health*, *16*(1), 458. doi:10.1186/s12889-016-3120-z

Haug, S., Castro, R. P., Meyer, C., Filler, A., Kowatsch, T., & Schaub, M. P. (2017). A mobile phone-based life skills training program for substance use prevention among adolescents: Pre-post study on the acceptance and potential effectiveness of the program. *JMIR Mhealth and Uhealth*, *5*(10), 143. doi:10.2196/mhealth.8474

Hodge, C. J., Kanters, M. A., Forneris, T., Bocarro, J. N., & Sayre-McCord, R. (2017). A family thing: Positive youth development outcomes of a sport-based life skills program. *Journal of Park and Recreation Administration*, *25*(1), 34-50. doi:10.18666/JPRA-2017-V35-I1-6840

Hodge, K., Danish, S., & Martin, J. (2012). Developing a conceptual framework for life skills interventions. *The Counseling Psychologist*, *41*(8), 1125-1152. doi:10.1177/0011000012462073

Hwang, M. S., & Jo, H. S. (2004). The relationship between developmental assets for young people and health risk behaviors. *The Korean Journal of Health Psychology*, *9*(1), 85-98.

Jeon, B. J. (1974). Self-esteem: A test of its measurability. *Yonsei Collection of Treatises*, *11*, 107-129.

Kang, K. A., Kim, S. J., & Song, M. K. (2009). A study on the relationship between self-esteem and meaning of life in higher grade elementary school students. *Journal of Korean Academy of Community Health Nursing*, *20*(3), 269-276.

Kawabata, T. (2009). Life skills education for preventing risk behaviors among Japanese adolescents. *Japanese Journal of School Health*, *51*(1), 3-8.

Kim, S. O., Kim, H. S., & Lee, K. O. (2006). Developing internet game addiction scale for children. *Korean Journal of Child Protection*, *28*(6), 37-52.

Korea Centers for Disease Control and Prevention (KCDC). (2017). Korean youth risk behavior online survey 2017. Retrieved from https://yhs.cdc.go.kr/new/pages/pds4.asp

Korean Association Against Drug Abuse. (2006). *Education program for drug abuse: Applying*

life skill. Seoul, Korea: KAADA Publishing.

Kwon, O. J. (2012). Exploration into life skills through dance-focused on the students majoring in dance. *Journal of Korean Dance*, *30*(2), 121-148.

Lee, G. Y. (2013). Relation between adjustment to school life and stress coping style in adolescents. *Journal of the Korean Society of School Health*, *26*(1), 34-44.

Lee, G. Y., & Song, S. H. (2013). A comparison of life skill's levels of adolescents by health behavior. *Journal of the Korean Society of School Health*, *26*(2), 114-123.

Lee, O. S. (2012). Physical education majors' life skills development through youth sport participation. *Korean Journal of Sport Pedagogy*, *19*(1), 1-22.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903. doi:10.1037/0021-9010.88.5.879

Sancassiani, F., Pintus, E., Holte, A., Paulus, P., Moro, M. F., Cossu, G., Angermeyer, M. C., Carta, M. G., & Lindert, J. (2015). Enhancing the emotional and social skills of the youth to promote their wellbeing and positive development: A systematic review of universal school-based randomized controlled trials. *Clinical Practice & Epidemiology in Mental Health*, *11*(Suppl. 1. M2), 21-40.

Sim, I. S., & Choi, M. Y. (2016). Factors associated with internet overuse of higher grade elementary school students. *Journal of the Korean Data Analysis Society*, *18*(1), 549-561.

Song, S. H. (2009). *The effects of internet on adolescents' sexual behavior* (Unpublished master's thesis). Kobe University, Kobe, Japan.

Spoth, R., Trudeau, L., Redmond, C., & Shin, C. (2014). Replication RCT of early universal prevention effects on young adult substance misuse. *Journal of Consulting and Clinical Psychology*, *82*(6), 949-963. doi:10.1037/a0036840

Srikongphlee, V., Luvila, V., & Kanato, M. (2018). Effectiveness of life skills training and promoting family environment to prevent youth substance abuse: A study in Khon Kaen, Thailand. *International Journal of GEOMATE*, *15*(50), 88-94. doi:10.21660/2018.50.3581

Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development*, *88*(4), 1156-1171. doi:10.1111/cdev.12864

United Nations Children's Fund (UNICEF). (2000). Skills-Based Health Education to Prevent HIV/AIDS. Retrieved from http://www.unicef.org/programme/lifeskills/mainmenu.html

Velasco, V., Griffin, K. W., Botvin, G. J., Corrado, C., & Lombardia, G. L. (2017). Preventing adolescent substance use through an evidence-based program: Effects of the Italian adaptation of life skills training. *Preventive Science*, *18*(4), 394-405. doi:10.1007/s11121-017-0776-2

World Health Organization (WHO). (2003). Skills for health: Skills-based health education including life skills: An important component of a child-friendly/health-promoting school. Retrieved from http://apps.who.int/iris/handle/10665/42818