

## RESEARCH ARTICLE

# Structural relationships among adolescents' peer attachment, career-related self-efficacy, parents' attitudes and health risk behaviours

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**Abstract**

**Aim:** This study aimed to determine whether the peer attachment of adolescents, mediated by career-related self-efficacy and having parents with positive attitudes, influences health risk behaviours.

**Design:** A cross-sectional questionnaire survey.

**Methods:** This study adopted the secondary data analysis method, using the 2010 Korean Children and Youth Panel Survey (KCYPS). The 7th-wave panel data of 1,932 first graders in high schools were analysed using structural equation modelling.

**Results:** The final model provided a good fit for the data. Having a close relationship with peers had a direct effect on adolescents' health risk behaviours. High peer attachment also had an indirect effect on health risk behaviours, mediated by career-related self-efficacy and having parents with positive attitudes. Though adolescents with broad and intimate peer relationships may be exposed to more temptations towards health risk behaviours and tend to make riskier decisions, these influences are reduced by being exposed to positive parenting attitudes and having clear, conscious career goals.

**KEYWORDS**

career goals, health risk behaviours, parenting attitudes, peers

## 1 | INTRODUCTION

Adolescence is a time when multiple health risk behaviours begin (El Achhab et al., 2016). The most common health risk behaviours include smoking, drinking and drug use (Dowdell et al., 2011), and it has been reported that approximately 80% of adults who smoke or drink begin such behaviours in adolescence (Hale & Viner, 2016; Kristjansson, 2010). Smoking and drinking in adolescence is not only a threat to physical health but also leads to negative, long-term effects on cognitive development (Brown et al., 2000; Solowji et al., 2011),

and sexual intercourse in adolescence may be a potential risk factor for health and adaptation in adulthood (Choi et al., 2017). Moreover, the highest incidence rate of sexually transmitted infections (STIs) is found in adolescents and early adults aged 14–24, according to the recent report by Centers for Disease Control and Prevention (CDC, 2019), and earlier experiences with sexual intercourse are associated with higher risk of STI (KCDC, 2018). In 2001–2011, 15.3% of adolescents aged 9–12 experienced sexual intercourse with multiple partners, and 7.7% of them smoked or other weak drugs (KCDC, 2018). These results show that health-related problems of adolescents are

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continuously increasing, while the age of first experience of sexual intercourse is decreasing.

It is important, therefore, to prevent and intervene in health risk behaviours that may continue until adulthood. Due to their developmental characteristics, such as rapid changes resulting from physical and emotional development, the health risk behaviours of adolescents are influenced by a variety of psychological and social environmental factors (Kwon & Wickrama, 2014; Umberson et al., 2010; Viner et al., 2012). In puberty, adolescents adapt to various environmental contexts that influence each other, and these complex contexts are likely to be overlooked when adolescents' deviation or risk behaviours are examined from only one perspective (Jee & Kim, 2014).

## 2 | BACKGROUND

Risk factors cause risk behaviours (Arnett, 1998; Brooks, 2006; Whitaker & Miller, 2000), while protective factors improve adolescents' adaptive resilience (Alvord & Grados, 2005; Bowen & Chapman, 1996; Day, 2006; Dent & Cameron, 2003). In a risky situation, some teenagers show maladaptive behaviours, whereas others show normal developmental and adaptive resilience. Factors inducing positive development such as the adaptive resilience are called protective factors. Developing personal abilities to resiliently adapt to given environments through protective factors in relationships with risk behaviours is an essential goal in adolescent education. In that sense, identifying the protective factors affecting the risk behaviours is not a simple approach of preventing or inhibiting adolescents' risk behaviours but an active approach of facilitating their positive development through the adaptive resilience.

Recently, research intended to verify the functions of protective factors and the effects thereof has sub-classified the protective factors into personal, family-related and socio-environmental factors. Personal factors include active coping strategies, self-efficacy, sense of goals, social competence and self-control, while family-related factors include parental monitoring (supervising and controlling), positive functions of families and communication with parents. Socio-environmental factors include social support from family members, friends and other important people, positive peer relationships and involvement in group activities (Alvord & Grados, 2005; Day, 2006). Hence, when it comes to the factors affecting adolescents' health risk behaviours, it is necessary to underscore their inter-personal relationships as a socio-environmental factor and their motivational awareness of goals as a personal factor.

The strongest influencing factor on adolescents' health behaviours is their relationship with others, such as friends and family members (Gardner & Steinberg, 2005; Loke et al., 2016). Adolescents extend their relationships from families to peers, when peer attachment becomes very important and influential. Armsden (1990) asserted adolescents seek new attachment figures including friends other than parents and viewed peer relationships as another type of attachment arising in adolescence. In general, adolescents are known to be positively influenced by close and reliable

peer relationships, which is substantiated by the finding that adolescents who secured high-quality friendships and were accepted by peers were less likely to commit delinquent acts (Helms et al., 2014; McElhaney et al., 2006).

On the contrary to this, some research report that peer pressure is a predisposing factor in juvenile substance abuse and deviations (Dumas et al., 2012), and higher peer pressure is associated with more risk-taking behaviours. This is because these behaviours may be a means of meeting group expectations and securing or improving one's position within a group (Dumas et al., 2012; Helms et al., 2014). In addition, with the formation of peer relations online becoming increasingly common in the information age, the influence of peer groups and pressure on health risk behaviours (Jeon & Goodson, 2015) is increasing rapidly.

Parents are one of the most important determinants in children's growth and development, serve as the role models to children in terms of the value of life, attitude and lifestyle and are the overarching resource that comes into contact with children (Sylvester, 2014; Turpyn & Chaplin, 2016). The definition of parenting attitude varies across scholars. Generally, referring to the behaviour or attitude revealed by parents or carers while taking care of children (Gonzalez & Wolters, 2006), parenting attitude is viewed as the most important determinant of the quality of parent-children relationships (Schaefer, 1965).

According to the social control theory (Hirschi, 1969), those who are equipped with stronger social bonds are more likely to achieve more successful socialization and become members conforming to social norms. A strong attachment inhibits delinquency, so that such relationships will be maintained and not weakened. That is, first, a strong attachment allows children to spend much time with parents, preventing them from getting involved in delinquent acts as much by reducing the time to encounter peers who might facilitate such acts. Second, attachment reinforces the psychological presence of parents, inhibiting delinquent acts by making children spontaneously think of their parents even in their absence (Gardner & Steinberg, 2005; Gersh et al., 2018; Ruprah et al., 2017).

The uninvolved parenting attitude of parents who are indifferent to and neglectful of their children is reported to contribute to the increasing juvenile delinquency (Ruprah et al., 2017). Similarly, adolescents who were physically abused by parents are more likely to become juvenile delinquents (Ibabe, 2019; James et al., 2018). In addition, parents' attitudes have been found to be an important factor in predicting health risk behaviours such as adolescent misconduct and sexual behaviour (Lee et al., 2015; Sylvester, 2014). In particular, parents' attachment or positive parenting attitudes may contribute to reducing the possibility of adolescents developing health risk behaviour (Harris et al., 2013; Turpyn & Chaplin, 2016).

At the same time, adolescence is the time to explore and prepare for one's future career and life. Adolescents with no life goals and a lack of career consciousness are more likely to misbehave (Steinberg, 2009), and such adolescents tend to focus on present pleasure rather than future goals. This results in negative long-term impacts on their health and well-being (Johnson et al., 2014, 2015).

Therefore, this study aimed to investigate the relationship of health risk behaviours with adolescents' peer relationships, the attitudes of their parents and career-related self-efficacy. The specific research questions were as follows:

- What is the effect of adolescent peer relationships on health risk behaviors?
- Do the career-related self-efficacy of adolescents and their parents' attitudes mediate the effects of peer relationships on health risk behaviors?

### 3 | METHODS

#### 3.1 | Participants and analysed data

This study adopted the secondary data analysis method, using the 2010 Korean Children and Youth Panel Survey (KCYPs) conducted by the National Youth Policy Institute. KCYPs data were collected from annual follow-up surveys for 7 years from 2010–2016, and the participants were first- and fourth-year elementary school and first-year middle school students (National Youth Policy Institute, 2016).

This study analyses the KCYPs data on “the elementary fourth-grader panel in the 7<sup>th</sup> year (2016)” when the participants were in the tenth grade. Given tenth graders go through significant personal changes due to physical and emotional development as well as changes in school environment. As for the sampling for the analysis of the KCYPs data, in 2010 the elementary schools in 16 cities and provinces in Korea were categorized into those in cities and those in Gun regions and then assigned to 27 groups. Then, in proportion to the number of classes in each city and province, a total of 78 sample schools were included. As for the sampling based on cities/provinces, sizes of cities and types of schools, one 4<sup>th</sup>-grade class at each elementary school with more than 50 students and 2 classes was selected in each city and province. A total of 2,378 panels completed the survey in the first year. With un-enrolled ones excluded, the data from 1,979 panels were continuously collected up to the 7<sup>th</sup> year. The final data used in this study were from 1,932 first grade high school students, after excluding 2,378 respondents with missing values—for example, those who were not enrolled in school for the whole survey period.

The details of participants' gender, types of schools, school records, economic levels and experience of health risk behaviours are shown in Table 1.

The KCYPs model and the framework of its question items were formulated based on Bronfenbrenner's (1979) ecological systems. From the ecological perspective, humans develop by virtue of their interactions with the systems of their environment, and thus one's interactions with the environment the person belongs to have a huge impact on his/her development. Based on the ecological perspective, the KCYPs was constructed with intent to examine the physical, social and emotional development of adolescents and the effects of their environment. The foregoing theoretical structure is equivalent to that of the developmental asset approach theory.

Largely, the KCYPs' question items comprise two areas, that is personal development and development environment. The personal development area was designed to determine the effects of children's and adolescents' external environment on their development. The personal development area involves 12 sub-areas, that is physical change, health, illness, academic achievement, learning attitude (intellectual development), emotional problems, self-awareness, life goals and satisfaction with life (social-emotional development), delinquency-related problems, hours of sleep, hours of study and time use. The development environment area involves six environmental factors that exert important effects on adolescents' socialization, that is family environment (family members, parenting style etc.), peer relationships (relationships with parents and friends), educational environment (experience of transfer and absence, school life and after-school activities), community environment (community centres and acceptance of multiculturalism), media environment (computer, mobile phones, cyber delinquency and adult media) and youth activities and cultural environment (experience activities, religious activities and fandom activities). Additionally, the items of the background variables include gender, school and parents'/carers' occupations.

#### 3.2 | Ethical considerations

The institutional review board of the institution to which the author belongs waived the requirement for the screening of this study (IRB No.: 1041078–201910-HRSB –132–01). The KCYPs homepage was accessed on 14 October 2019, and a written oath and plan for data use were submitted with the “request for raw data.” This allowed us to download the file named “KCYPs2010 e4w7,” which contained raw data from the seventh survey of fourth-year elementary school students of KCYPs 2010 (National Youth Policy Institute, 2016).

#### 3.3 | Measures

The KCYPs' question items are widely used in the relevant branch of learning, and the rule is to prioritize the use of questions or scales verified in Korean as reliable and valid. However, the age of the survey group is taken into regard, so if the level of difficulty is high or the scale contains too many questions, then the questions were revised and the number of questions was adjusted through the advice provided by experts, followed by the confirmation of the final questions through a preliminary investigation (National Youth Policy Institute, 2016).

##### 3.3.1 | Peer attachment

The peer attachment in adolescents was measured using a re-constructed Korean version of the Inventory of Parent and Peer

**TABLE 1** General characteristics of participants (N = 1932)

Variables	Categories	n(%) or mean(standard deviation)
Sex	Male	1,005(52.0%)
	Female	927(48.0%)
Types of schools	General High School	1,492(77.3%)
	Specialized high school for arts and sports	25(1.3%)
	Specialized high school for foreign languages and science	20(1.0%)
	Specialized high school for vocational trainings	374(19.4%)
	Others	21(1.1%)
Perceived academic performance	Excellent	302(15.8%)
	Above average	393(20.5%)
	Average	697(36.3%)
	Below average	303(15.8%)
	Very low	224(11.7%)
Economic status	Excellent	240(12.4%)
	Above average	309(16.0%)
	Average	1,132(58.6%)
	Below average	180(9.3%)
	Very low	71(3.7%)
Experiences of health risk behaviours	Smoking a cigarette	107(5.5%)
	Drinking alcohol	205(10.6%)
	Sexual intercourse	12(0.6%)
Frequencies of health risk behaviours during last 1 year among who has experienced	Smoking a cigarette	6.31(6.19)
	Drinking alcohol	3.80(3.93)
	Sexual intercourse	5.92(4.12)

Attachment (IPPA) by Armsden and Greenberg (1987) (National Youth Policy Institute, 2016). This scale has 3 sub-factors—trust, communication and alienation—and consists of 9 items with 3 sub-factors each. This study used 6 items from communication and trust to identify positive peer attachment relationships. Higher scores in trust and communication indicated higher levels of peer attachment. Each item was measured on a 4-point Likert scale (1: almost always, 4: almost never). The internal agreement between items had a Cronbach's  $\alpha$  coefficient of 0.888.

### 3.3.2 | Career-related self-efficacy

Career-related self-efficacy was measured using the 8 items from the scale developed by the National Youth Policy Institute, as revised and complemented by Kong (2008) (National Youth Policy Institute, 2016). Each item was measured on a 4-point Likert scale (1: almost always, 4: almost never). Some items were reverse-coded in order for a higher score to indicate a higher level of career-related self-efficacy. The reliability of the items had a Cronbach's  $\alpha$  coefficient of 0.903.

### 3.3.3 | Positive parenting attitudes

The attitudes of the adolescents' parents were measured using the scale that the National Youth Policy Institute developed by modifying the parental parenting test by Heo (2000) (National Youth Policy Institute, 2016), which measures adolescent' perception of their parents' parenting styles and consists of 6 sub-factors: supervision, affection, inconsistency, over-expectation, excessive interference and rational explanation. The scale uses affection and rational explanation as measures of positive parenting methods. The reliability of all 7 items was a Cronbach's  $\alpha$  coefficient of 0.869; that of the 4 affection items was 0.827, and that of the 3 rational explanation items was 0.781.

### 3.3.4 | Health risk behaviours

Adolescents' health risk behaviours were measured using data from 3 items directly related to their health status: smoking, drinking and sexual intercourse. In total, 14 items from the KCYPS were used to survey their yearly instances of misconduct, including running away from home, bullying and stealing.

### 3.4 | Data analysis

The collected data were analysed using SPSS 25.0 for Windows and AMOS 25.0, according to the following methods. First, descriptive statistics and missing value analysis were performed for data review such as the identification of outliers, missing values and normality of major variables to be included in the research model. This also identified the participants' demographic characteristics. The reliability analysis, correlation analysis and factor analysis of variables were then performed. The fit of the model and the relationship between positive peer attachment as an independent variable and health risk behaviour as a dependent variable was investigated through structural equation modelling (SEM). The multi-mediated effects of career-related self-efficacy and having parents with positive attitudes were verified, and bootstrap analysis was conducted to analyse these mediating effects. Additionally, phantom variables were analysed to verify the significance of the indirect influence of each mediating effect.

## 4 | RESULTS

### 4.1 | General tendencies among the variables

In order to examine the general tendencies and gender differences of the variables, an independent sample *t* test was performed by calculating the mean and standard deviation according to gender. These results are shown in Table 2. There were significant differences between genders in the smoking and drinking health risk behaviours, as well as in positive peer attachment and having parents with positive attitudes.

The skewness and kurtosis of each variable were examined to confirm the normality of the data, and the absolute values of both skewness and kurtosis of all variables were less than 3 and 8 respectively. This satisfied the conditions of normal distribution (West et al., 1995).

Correlation analysis was performed to examine the relationship among adolescents' positive peer attachment, career-related self-efficacy, having parents with positive attitudes and health risk behaviours, which showed that all correlations were significant (see

Table 3). Adolescents' health risk behaviours showed a significant positive correlation with positive peer attachment and a negative correlation with career-related self-efficacy and having parents with positive attitudes.

### 4.2 | Verification of the final structural model

The structural model was verified to examine the effect path of adolescent's peer attachment, career-related self-efficacy and having parents with positive attitudes upon their health risk behaviours. The results showed excellent goodness of fit ( $\chi^2 = 2034.036$  ( $df = 246$ ,  $p < .05$ – $0.001$ ), CFI = 0.923, TLI = 0.913 and RMSEA = 0.061).

The following paths for each variable were determined (see Table 4 & Figure 1): positive peer attachment had a positive effect on health risk behaviour (CR = 3.495,  $p < .001$ ), career-related self-efficacy (CR = 14.392,  $p < .001$ ) and having parents with positive attitudes (CR = 17.855,  $p < .001$ ); and career-related self-efficacy and having parents with positive attitudes were found to lower health risk behaviours (CR = -2.175,  $p < .05$ ; CR = -4.202,  $p < .001$ ).

### 4.3 | Verification of the mediating effect

Bootstrapping was conducted using phantom variables to investigate, through the structural model, whether career-related self-efficacy and having parents with positive attitudes played a mediating role between positive peer attachment and health risk behaviours. The results showed 0.06 total effect, 0.39 direct effect and 0.33 indirect effect, confirming a partial mediating role of career-related self-efficacy and having parents with positive attitudes in this regard (95% CI: -0.57~ -0.18,  $p < .001$ ). The indirect effects of career-related self-efficacy and having parents with positive attitudes were -0.077 (95% CI -0.19~ -0.004,  $p < .001$ ) and -0.25 (95% CI -0.46~ -0.11,  $p < .001$ ), respectively, confirming that both variables have a significant partial mediating effect (see Table 5). The proportions of total effect accounted for by indirect effect were 16.5% for career-related self-efficacy and 39.1% for having parents with positive attitudes respectively.

**TABLE 2** Descriptive statistics of major variables

Variables	Boys	Girls	<i>t</i>	Skewness	Kurtosis
	Mean (standard deviation)	Mean (standard deviation)			
Health risk behaviours					
Smoking a cigarette	0.61 (2.65)	0.86 (0.99)	5.75***	1.10	2.41
Drinking alcohol	0.55 (1.99)	0.21 (1.09)	4.29***	2.53	0.34
Sexual intercourse	0.05 (0.67)	0.02 (0.41)	1.15	2.91	3.15
Peer attachment	3.18 (0.50)	3.23 (0.48)	-2.86**	0.02	0.19
Career-related self-efficacy	2.97 (0.62)	2.96 (0.60)	0.31	0.02	-0.67
Positive parenting attitudes	3.03 (0.50)	3.03 (0.53)	-4.43***	-0.33	0.71

\*\* $p < .01$ , \*\*\*  $p < .001$ .

Variables	Health risk behaviours	Peer attachment	Career-related self-efficacy	Positive parenting attitudes
Health risk behaviours	1.00			
Peer attachment	0.15**	1.00		
Career-related self-efficacy	-0.10**	0.30**	1.00	
Positive parenting attitudes	-0.21**	0.53**	0.33**	1.00

\*\* $p < .01$ .

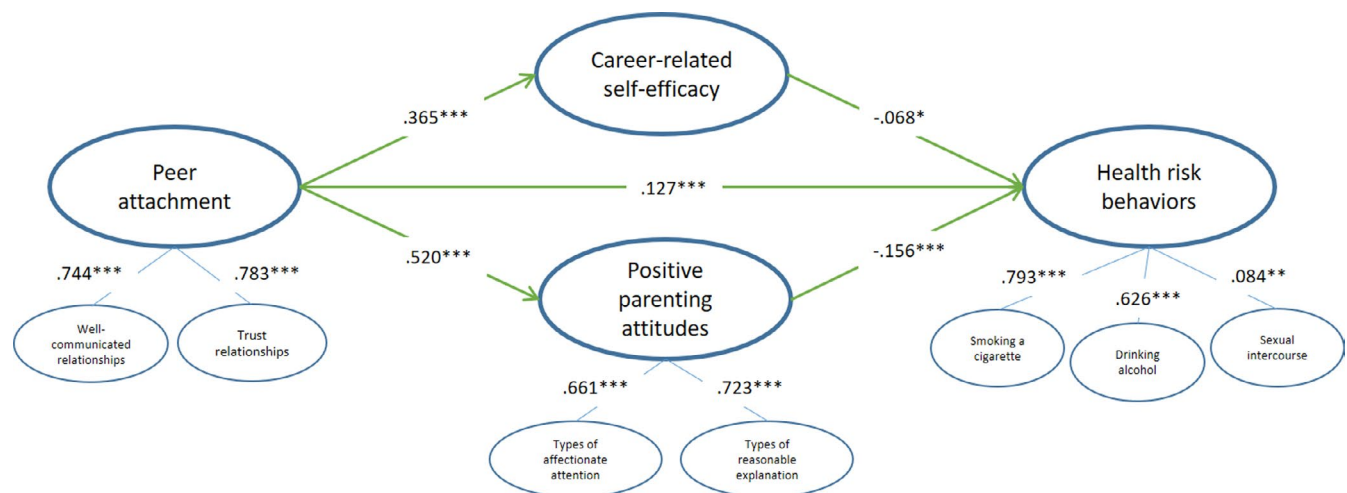
Path <sup>1</sup>	Estimates			
	B	$\beta$	Standard Error	Critical Ratio
Peer attachment → Health risk behaviours	0.39	0.13	0.11	3.495***
Peer attachment → Career-related self-efficacy	0.55	0.37	0.04	14.392***
Peer attachment → Positive parenting attitudes	0.53	0.52	0.03	17.855***
Career-related self-efficacy → Health risk behaviours	-0.14	-0.07	0.06	-2.175*
Positive parenting attitudes → Health risk behaviours	-0.47	-0.16	0.11	-4.202***

<sup>1</sup>Model Fit:  $\chi^2 = 2034.036$ ,  $df = 246$ , CFI = 0.923, TLI = 0.913, RMSEA = 0.061.

\* $p < .05$ , \*\*\* $p < .001$ .

**TABLE 3** Correlation between covariates

**TABLE 4** Path estimates of the variables



**FIGURE 1** Results of the structural equation modelling analysis of the hypothesized model. ( $N = 1932$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ )

## 5 | DISCUSSION

This study sought to investigate the factors that influence adolescents' health risk behaviours, based on the premise that peer relationships, being exposed to positive parenting attitudes, and life attitudes oriented towards the future play an important role in preventing adolescents' health risk behaviours.

This study confirmed that intimate peer relationships influence adolescents' health risk behaviours. These findings are consistent

with the findings that 60% of adolescents who have smoked were first urged to smoke by a friend (Jaccard et al., 2005) and that adolescents who have had sexual intercourse are more than twice as likely (56%) to have a friend who has had sexual intercourse than those that do not (24%) (Loke & Wong, 2010).

This significant influence of peers on risk orientation and specific antisocial behaviours in adolescents may be explained by findings that peer reward intensifies risk orientation tendencies (Kim & Kim, 2019). Human beings' brains have evolved such that

**TABLE 5** Results of the multiple mediation model using the phantom model approach

Path <sup>1</sup>	Total Effect	Direct Effect	Indirect Effect	Standard Error	95% Confidence Interval	
Peer attachment → Career-related self-efficacy/ Positive parenting attitudes → Health risk behaviours	0.06	0.39	-0.33	0.10	-0.57	-0.18
Peer attachment → Career-related self-efficacy → Health risk behaviours			-0.08	0.04	-0.19	-0.004
Peer attachment → Positive parenting attitudes → Health risk behaviours			-0.25	0.04	-0.46	-0.11

<sup>1</sup>Model Fit:  $\chi^2 = 2034.036$ ,  $df = 246$ , CFI = 0.923, TLI = 0.913, RMSEA = 0.061.

adolescents' desire for recognition by peers acts as a motive for certain behaviours; therefore, when they take part in risk behaviours such as smoking, drinking, unlicensed driving and unprotected sexual intercourse, it is for peer recognition (Albert & Steinberg, 2011). As such, adolescents with broad and intimate peer relationships may be exposed to more temptations towards health risk behaviours and tend to make risky decisions that seek an immediate peer reward (Casey et al., 2008).

Accordingly, specific strategies are needed to alleviate peer conformity in having to respond to the health risk behaviours of adolescents. Basically, the peer conformity in the adolescent peer groups involve voluntary participation willingness, but on the one hand, peer pressure causes big concerns about becoming isolated by not conforming to his or her peers (Bae, 2016). Normally, when individuals are in the adolescent period, there is a strong desire to be recognized by the group of friendship so it is easy to take "braver" actions and this is connected to the risk-loving tendency and it reinforces peer conformity at the same time and even functions as a mechanism to intensify the tendency to act with antisocial behaviours (Bae, 2016; Erwin, 1993). This means that education about the prevention of health risk behaviours of adolescents should go further than only providing information about the biological changes followed by health risk behaviours as it should contain the aspects about the individuals' abilities to control peer pressure.

It was confirmed in this study, however, that the influences of peer relationships on health risk behaviour are reduced by having parents with positive attitudes and being conscious of one's career goals. The behaviour of the parents is one of the major factors influencing adolescents' health risk behaviour (Kwon & Wickrama, 2014), and adolescents with high levels of parental involvement in their lives are less likely to start drinking or smoking (Bae, 2016; Lee et al., 2015) and partake in sexual behaviours (Harris et al., 2013; Turpyn & Chaplin, 2016). The results of this study, considering the developmental model of antisocial behaviour by Patterson et al. (1989), are consistent with the findings that such influence may be indirect rather than direct, leading to other maladaptation problems (Lee & Paik, 2013). Therefore, to reduce adolescents' health risk behaviours, measures such as behavioural education programmes for parents should be developed so that adolescents perceive their parents' attitude positively. In the Confucian culture of Korea, however,

it is not easy, by external influence, to intervene and seek changes towards parent-child relationships at home. It is necessary, therefore, to enhance the parents' understanding of children's change by providing a variety of parent education programmes that meet the characteristics of adolescent development and to provide programmes such as workshops on communication methods and empathy as a means to build a bond between parents and children through dialogue and empathy.

In addition, adolescents' career-related self-efficacy was found to partially mediate the influence of intimate peer relationships on health risk behaviours. Although related previous research has been limited, this is consistent with findings that career readiness—including motivation, goal awareness and knowledge related to a career—reduces health risk behaviours (Gwon, 2017; Johnson et al., 2014, 2015). This suggests that a clearer career consciousness leads to adolescents being more willing to control themselves to achieve their goals, thus overcoming peer pressure to participate in health risk behaviours. For the promotion of such career consciousness in adolescents, career education should be implemented at home and in school. In Korea, the Career Education Act (enforced on Dec. 23, 2015) required for almost all elementary, middle and high middle schools to place career counsellors; however, no results have been reported because it has not been long since the career education as an institute started. According to the 2018 Career Education Survey, in addition, high school students' satisfaction score with school career education for aptitude development was 3.79 out of 5, lower than satisfaction with school life (4.17). This means that provision of a development of effective career education programme is urgent.

## 5.1 | Limitations

Despite these significant findings, the present study has several limitations.

Third, it has been suggested that drinking, smoking and sexual intercourse are contrary to social desirability, and therefore, the incidence rate and frequency are under-reported (Post et al., 2005), suggesting a gap between reported and actual values. In addition, the data used in this study are exposed to common method bias because

they are based on self-report questionnaires Podsakoff et al., 2003). This means that differences in individual criteria may have influenced the results on adolescents' peer relationships, perceptions on their parents' attitudes and career-related self-efficacy. As a means to address this, a multi-method approach that collects data in more varied ways is required.

## 6 | CONCLUSION

Adolescence is a transitional period leading to adulthood, and health-related behaviours in this period may continue to lifestyles from adulthood to old age with increase in the frequency and habitual tendency and may act as a decisive factor in onset of chronic disease and mortality, showing that the desirable health behaviour in this time is very important. Considering these factors, it is important and effective to identify and intervene factors that affect adolescent health problems in order to maintain a desirable life in adulthood. This study is expected to contribute to this field by examining, with the representative samples, the structural relationship between peer relationship, parenting attitude and career identity of Korean high school first grade students who are beginning to participate actively in health risk behaviours. The result of this study showed that the adolescents' peer relation is a main factor that has a significant influence on health risk behaviour experience and that positive parenting attitude and clear career goal reduce indirectly the influence of peer relations. It is necessary, therefore, to educate on how to respond to peer pressure that tempts health risk behaviour as an intervention to prevent and reduce health risk behaviour of adolescents, as well as parent education and career education for the formation of positive parent-child relationship.

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## CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest to report.

## ETHICAL STATEMENT

This study adopted the secondary data analysis method and the institutional review board of the institution to which the author belongs waived the requirement for the screening of this study (IRB No.: 1041078-201910-HRSB-132-01).

## DATA AVAILABILITY STATEMENT

Raw data of this study can be obtained from the website of the administrative agency that has ownership of the data below: National Youth Policy Institute (2016). Korean Children and Youth Panel Survey (KCYPs) 2010, Retrieved from [https://www.nypi.re.kr/archiv/brdartcl/boardarticleList.do?brd\\_id=BDIDX\\_k9Fd9oFi29nooCcJ7kX114&menu\\_nix=qj3a0s6n&srch\\_ctgry\\_idx=CTIDX00042,KCYPs2010e4w7](https://www.nypi.re.kr/archiv/brdartcl/boardarticleList.do?brd_id=BDIDX_k9Fd9oFi29nooCcJ7kX114&menu_nix=qj3a0s6n&srch_ctgry_idx=CTIDX00042,KCYPs2010e4w7).

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