

Multifaceted Risk Factors for Mental Health Problems of Adolescents in Correctional Facilities: Toward an Integrated Implication for Rehabilitation and Reintegration into Society

This study explores a model that examines how multidimensional risk factors explain mental health problems of young offenders. One hundred and ninety six students aged 13 to 15 in correctional facilities were assessed for mental health symptoms that examined the effects of multifaceted risk factors on mental health conditions. Consistent with the hypothesis of this study, secure unit students appear to have experienced various forms of risk factors and those factors have influenced mental health conditions. Results show that correctional facilities should reframe therapeutic and preventive approaches to disadvantaged students and develop integrated services and programs for rehabilitation and reintegration into society. It is recommended that those involved in treatment plans in correctional facilities consider that different treatment plans are necessary for each young offender.

The adolescent period is viewed as a time of transition and stress, as they are faced with many challenges which take place in the process of socialization. All aspects of adolescent lives are affected by mental health conditions. The internalizing behavior problems (mental health problems such as depression and anxiety) are closely linked to

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the onset of externalizing (aggressive or delinquent) behavior problems. Internalizing problems could negatively influence perceptions of adolescent behavior patterns and lead to delinquent behaviors or becoming involved in criminal activity as a result of inadequate psychosocial functioning. According to the previous research evidence, adolescents who reported depression were significantly linked to the possibility of showing high levels of aggressive behavior as well as high levels of delinquent behavior (Canadian Institute for Health Information, 2007, p.12; Kang, Lim & Lee, 2008; Moon & Hwang, 2006). Many studies (Hawkins, Smith & Catalano, 2002; Healey, Knapp & Farrington, 2003; Molnar *et al.*, 2007) support a link between various mental health-related factors as risk factors for delinquency or aggression, particularly among youth. For example, a Canadian study reports that rates of depression (31% versus 4%) are higher among youth in the secure unit than among youth in the general population (Canadian Institute for Health Information, 2007, p. 40). It also reports that 57% of juvenile offenders need mental health support in America (Snyder & Sickmund, p.225-228), whereas only about 5% of ordinary adolescents who need mental health services (Physicians and Lawyers for National Drug Policy, 2008).

Given the consequences associated with internalizing behavior problems, researchers have identified

causal agents that influence psychosocial functioning in adolescence. Among other possibilities of influences of psychosocial functioning on internalizing behaviors, multifaceted stressful life experiences during adolescent period are considered as factors that are associated to the development of depressive symptoms in adolescence, although the role of stressful life experience is various and not clear in the development of mental distress. Studies on the causes of depression in adolescence have found that stressful life experiences affect the onset of depressive episodes (Goodyer, Herbert & Tamplin, 2000; Seiffge-Krenke, 2002; Tennant, 2002) and adolescents with depressive symptoms seem to have experienced more negative events as compared to adolescents with no clinical problems (Sandberg *et al.*, 1998).

Research evidence shows that adverse parenting styles caused by job stress or economic hardship decrease adequate supervision and positive interaction that may produce conflicts with adolescents and subsequent emotional difficulties in adolescence (Kim & Oh, 2006; Park & Hong, 1997; Steinberg, 2000). Notable is that girls are more vulnerable to poverty status, compared to boys in Korean research (Kim & Oh, 2006), whereas gender effects did not show any statistical significance for emotional difficulties in western research (Steinberg, 2000).

Increased research has documented the high frequency and negative mental health correlates of educational risk factors such as truancy, low levels of educational attainment, and adverse peer relationships (Chou *et al.*, 2006; Cho, 2005; Hallfors *et al.*, 2002; Fenzel, Magaletta & Peyrot, 1997). The detrimental effects of demanding academic work (Park & Kim, 2008; Cho, 2005) and peer maltreatment (Chou *et al.*, 2006; Hallfors *et al.*, 2002; Fenzel, Magaletta & Peyrot, 1997) may have increased impact on mental health adjustment in adolescents, resulting in low levels of academic attainment and negative externalizing behavior problems.

Social network including peer groups is also important in the lives of adolescents. Adolescents who have weak social ties with pro-social peer groups, are more likely at a higher risk of becoming

violent, as are young people with antisocial and delinquent peers. As delinquent adolescents have poor social skills, they are less likely to have intimate relationships with pro-social peer groups, being isolated from peers (Gal & Hoge, 1999). Having relationship with offending peers, means that offending opportunities or situational inducements increase the likelihood of being enacted via group situations where associates encourage delinquent behavior (Hochstetler, Copesb & DeLisia, 2003; Wiesner, 2003).

Adolescents may be generally involved with tobacco, alcohol, and drugs in various ways, which could be considered as a neutralizer of the effects of stress. According to the American study, 29% of adolescents (nearly one in three) have experimented with drugs and 41% have reported consumption of alcohol ('8% of American adolescents between the ages of 12 and 17 meet the American Psychiatric Association's diagnostic criteria for substance abuse or dependence, more than 5% meet the criteria for alcohol abuse or dependence, and more than 11 % show signs of "problematic use" of alcohol or drugs, Kilpatrick, Saunders & Smith, 2008, p.1). Abusing substances at a young age can place teens at increased risk of experiencing a variety of negative consequences, including increased risk of serious drug use later in life, school failure, and poor mental health problems which may put teens at risk for accidents, violence, unplanned pregnancy, unsafe sex, and suicide (Beyers *et al.*, 2004; Fried & Reppucci, 2001; Hallfors *et al.*, 2002; Lukasiewicz *et al.*, 2007). Korean studies (Kim, 1999; Lee & Cho, 2007) showed that only alcohol and tobacco were associated with emotional difficulties and other high risk behaviors, because it is hard for Korean adolescents to use illegal drugs which have a greater impact on the development of emotional difficulties and delinquent behaviors for western youth.

Low levels of personal identity which have stemmed from low quality of familial, peer, and social attachment, are viewed as causal agents in the development of internalizing behavior problems such as depression, anxiety, and social withdrawal. The diffused identity status adolescents are likely to have lower relationships with students with positive peer

networks or pro-social identity than control students with achieved identity (Bermana *et al.*, 2006; Cho & Cho, 2007; Luyckx *et al.*, 2005; Zimmermann & Becker-stoll, 2002). Adolescents with positive identity are likely to develop a positive self-image and confidence in ability, coping with internalizing behavior problems in the developmental period.

Of these factors, mental health problems have commonly been identified as the most significant risk for aggression and delinquency (Canadian Institute for Health Information, 2007; Holmes-Lonergan, 2003; Sutton, Utting & Farrington, 2006). Understanding the correlates of high risk adolescent factors and mental health problems would be an essential first step in developing preventive programs and services for adolescents at risk of getting involved in antisocial behaviors.

Most studies have focused on the direct effects of each dimension on adolescent development of mental health functioning, showing that mental health issues are more likely to be problematic when adolescents are exposed to high risk environments. Despite these findings about the effects of each risk variable on the development of mental health dysfunction among adolescents, no multidimensional systematic research has been conducted in the field of juvenile delinquency research. Less attention has been paid to the roles of the multifaceted risk factors in the influence and processes in adolescent mental health problems, especially in young offenders. This study investigates whether multidimensional risk factors are related to the mental health problems of adolescents in a secure unit.

This study examines the associations between mental health problems and multifaceted familial, educational, lifestyle, substance, and personal identity characteristics experienced by adolescents in the secure unit, as a foundation for developing a preventive service toward rehabilitation and reintegration into society. The final aim is the reduction of attempts to re-offend. The model in Figure 1 summarizes the research questions of this study are as follows:

Will the mental health of young people in correctional facilities be associated with family and personal relationships such as care,

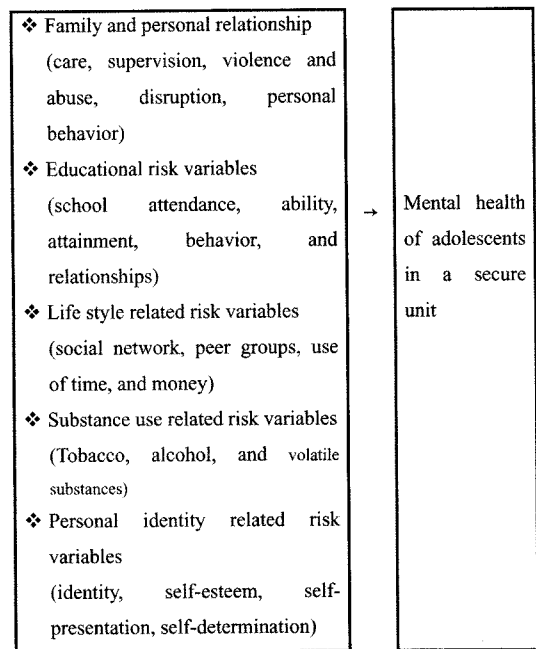


FIGURE 1. MODEL OF THE STUDY

supervision, violence abuse, disruption, and personal behavior?

Will low levels of school attendance, academic ability, and attainment have substantial effect on the poor development of the mental health of adolescent in correctional facilities?

Will there be an association between negative life style and the negative development of mental health among young people in correctional facilities?

Will exposures to substance abuse and perceiving negative personal identity issues exert negative effects on the poor development of the mental health of adolescents in correctional facilities?

METHODS

Participants

This study focuses on young offenders in the secure unit of correctional facilities, all middle school students in 2 secure units located in the cities of Taegu and Anyang, were voluntary invited to participate in this study. One hundred and ninety six students (96 boys and 100 girls) aged 13 to 15 (the

TABLE 1. DEMOGRAPHIC CHARACTERISTIC OF PARTICIPANTS (N = 196)

Characteristics	Characteristics
Sex	Financial level of guardians
Boys 96 (49%)	Over average 5(2.6%)
Girls 100 (51%)	Average 89 (45.4%)
Number of brother and sister	Under average 55 (28%)
No siblings 28 (14.3%)	Welfare dependency 47 (24%)
1 Sibling 96 (49%)	Educational attainment in Korean literature
2 Siblings 52 (26.5%)	Average achieving 14 (7.1%)
3 Siblings 12 (6.1%)	Generally under achieving 167 (85.2%)
4 Siblings 8 (4.1%)	Not achieved basic literacy 15 (7.7%)
Types of guardian	Educational attainment in Mathematics
Parents 87 (44.4%)	Generally good 2 (1%)
Single parent 79 (40.3%)	Average achieving 16 (8.2%)
Other guardian 30 (15.3%)	Generally under achieving 167 (83.2%)
Guardian employment type	Not achieved basic literacy 15 (7.7%)
Both employed 121 (61.7%)	Educational attainment in English
Employed alone 41 (20.9%)	Generally good 1 (0.5%)
Unemployed 34 (17.3%)	Average achieving 4 (2%)
Occupational category of guardians	Generally under achieving 176 (89.8%)
Managerial and professional specialty 5 (2.6%)	Not achieved basic literacy 15 (7.7%)
Technical and administrative support 12 (6.1%)	Religion of young people
Services 35 (17.9%)	Religious 168 (85.7%)
Farming, forest, and fishing 14 (7.1%)	Non religious 28 (14.3%)
Precision production, craft, and repair 7 (3.6%)	Average age: 14.25
Operation, fabrication, and general labor 41 (20.9%)	The mean Malaise scores: Boys 8.29
Sales 35 (17.9%)	Girls 7.89
Welfare dependency 47 (24%)	

mean age 14.25) completed a series of self-report questionnaires and interviews. The mean Malaise scores were 8.29 for boys and 7.89 for girls.

The majority of young people were from single parent families and had low levels of educational attainments as shown in Table 1. Most guardians had incomes at or below the poverty level, because of low levels of employment and occupation.

Measures

Assessment Profile For Youth (ASSET) Developed by the probation studies Unit (Centre for Criminological Research, University of Oxford) is an assessment tool to identify specified circumstances/problems (levels of criminal motivation or criminogenic needs) and protective factors for juvenile offenders. On the basis of recognizing the ASSET as a unique instrument assessing offending related indicators for young offenders, the ASSET was especially included in this study. The ASSET uses the simplest version of point

scoring, and operates by first taking the explanatory variables one at a time and then determining which level of each variable is associated with the higher proportion of successes. The scores are measured by a five point rating scale. Possible responses ranged from 2 (high level) to -2 (low level).

The ASSET addresses various aspects of the extent of problems which the young person may have and which are related to offending that include: age, sex, legal classification, criminal history (index offences and previous convictions), attitudes to offending, living arrangements, family and personal cohesion, education, lifestyle, substance use, physical health, emotional and mental health, personal identity, cognitive and behavioral development, motivation and change.

Malaise Inventory Malaise Inventory, developed from the Cornell Medical Index Health Questionnaire (CMI, Brodman *et al.*, 1952), is commonly used self-completion questionnaires for assessing psychiatric morbidity. The 24 'yes-no'

items of the inventory cover emotional disturbance and associated physical symptoms. When administered in the standard format, scores range from 0 to 24. Individuals responding 'yes' to eight or more of the 24 items are considered to be at risk of mental health problem. The Chronbach's reliability coefficient was .82.

Procedure

A wide range of data was used in identifying the familial, educational, personal characteristics of the secure unit population. The ASSET assessment profile for institutionalized participants was administered at the target institutions over two months. The enabling variables identified by ASSET Profile were independent variables characteristics identified and measured by the Malaise Inventory were additionally administered to collect data about any mental health characteristics. The respondents from the secure units were assessed by research professionals using the ASSET profile.

All interviews were done inside the school. The interviewers had extensive experience in the criminal justice system, and the interviews were conducted in a one on one setting. There was no supervision or visible monitoring of the sessions. Data was collected also from the ratings of each teacher for educational risk dimensions of the targeted ASSET profile components (family, personal relationship, education, lifestyle, substance abuse, and personal identity). Because these interviewers came from the institutions, as an additional safeguard in the validation process the principal researcher independently interviewed 5 subjects at random from the secure unit subjects who had already been interviewed by the researchers. The principal researcher found that almost the same results were rated on the selected samples compared to the ASSET profile records that were rated by other interviewers.

Before the survey and interview, young offenders were informed that the responses to questions would be confidential and that school officials would not see completed questionnaires. Student offenders who participated in these surveys and interviews completed a ten minute self-administered questionnaire in the

classroom. Reading help was provided for the students with literacy problems. Secondly, they were interviewed at the secure units and the interview lasted from twenty to thirty minutes. The interview used a standardized instrument called ASSET in semi-structured format, consisting of a few open-ended questions followed by prompts to elicit further information or clarifications. The interview intended to assess (a) Family and personal relationship risk factors (care, supervision, violence and abuse, disruption, young personal behavior, and past experiences of family and personal relationship, 5 rating scales), (b) Educational risk factors, (current attendance, ability, attainment, behavior, relationships, and previous educational experiences, 5 rating scales); (c) Life style related risk factors (social networks, peer groups, use of time, money, and past life style, 5 rating scales), (d) Substance use related risk factors (tobacco, alcohol, volatile substances, any substance misuse by parents/guardians, 5 rating scales) and (e) Personal identity factors (identify, self-esteem, self-image/self-perception, self-presentation, self-determination, and previous personal identity issues, 5 rating scales). The researchers interviewed uses the one on one format with three trained and licensed mental health professionals at the institution:

Data Analysis

The data were analyzed using SPSS version 12.5 for Windows (SPSS Inc., 2004). The analyses were undertaken in a series of states. First the demographic characteristics of young offender sample were analyzed. Second analyses of covariance were used to examine gender differences in targeted risk factors. Next a Spearman Correlation Coefficient and Regression were conducted to identify risk factors (identified by ASSET) that were closely associated with the levels of Malaise.

FINDINGS

Gender Differences in Risk Factors

Gender differences in environmental and individual risk factors as measured by ASSET were examined

using *t*-tests Table 2. A number of significant differences emerged between the secure unit students on the basis of gender. Significant gender differences were found in the family relations, education, life style, substance, and personal identity variables among gender the groups (level of interest

in young person, praise and positive reinforcement $t = 3.803$, $df = 194$, $p < .001$, offending against family/ careers, aggression, defiance, running away $t = 2.449$, $df = 194$, $p < .05$; current school attendance $t = 6.963$, $df = 194$, $p < .001$, behavior at school $t = 2.003$, $p < .05$; social network $t = 2.656$, $df = 194$, $p < .01$,

TABLE 2. GENDER DIFFERENCES IN RISK FACTORS (N = 196)

Variables	Sex	M	SD	t	Variables	Sex	M	SD	t
Family relation: Level of interest in young person, praise and positive reinforcement	Boy	1.31	.79	3.803***	Life style: Social network: range of acquaintances	Boy	.39	.70	2.65**
	Girl	.82	.99			Girl	.08	.93	
Boundary setting, level and consistency of supervision	Boy	1.10	.91	.301	Pro-social/anti-criminal friends,	Boy	.64	.71	4.09***
	Girl	1.06	1.12			Girl	.18	.86	
Victim of abuse, neglect	Boy	.39	1.18	.250	Constructive use of spare time	Boy	.34	.61	.71
	Girl	.44	1.28			Girl	.27	.81	
Continuity stability, bereavement, family breakdown, divorce	Boy	.20	.88	.241	Own disposable income	Boy	.43	.55	.07
	Girl	.24	.95			Girl	.43	.76	
Past experiences of family and personal relationships	Boy	.67	.79	-.703	Previous involvement in gangs	Boy	.59	.55	.91
	Girl	.59	.86			Girl	.51	.71	
Education: Capacity to provide appropriate care/discipline/supervision	Boy	.88	.54	.189	Substance use: Tobacco use	Boy	1.11	1.03	1.22
	Girl	.87	.59			Girl	1.28	.85	
Assessment of the current experience of family life	Boy	.86	.55	.294	Alcohol use	Boy	.26	1.09	3.24***
	Girl	.89	.64			Girl	.77	1.09	
Current school attendance	Boy	.82	.79	6.963***	Volatile substances	Boy	3.98	21.65	1.47
	Girl	1.58	.72			Girl	.79	2.02	
General ability, particular strengths and weaknesses	Boy	1.11	.67	1.106	Abuse by parents/careers	Boy	.34	.55	8.72***
	Girl	1.23	.77			Girl	.90	.30	
Actual attainments in relations to the achievements of peers	Boy	.77	.58	1.408	Personal identity: Identity	Boy	.09	.71	1.50
	Girl	.90	.68			Girl	.26	.82	
Behavior at school	Boy	.64	.68	2.003*	Self-esteem: of own value	Boy	.08	.72	.85
	Girl	.85	.74			Girl	.17	.69	
Number and quality of friendships, degree of social isolation, victim	Boy	.71	.62	.787	Self-images/self perceptions	Boy	.05	.67	1.79
	Girl	.80	.80			Girl	.14	.81	
Previous educational experience	Boy	.92	.41	.277	Self-presentation: communication	Boy	.06	.69	1.06
					Girl	.95	.70	Girl	.17
	Boy	.04	.76		Self-determination	Boy	.04	.76	.54
					Girl	.02	.81	Girl	.02
	Boy	.12	.72		Previous identity issues	Boy	.12	.72	.22
					Girl	.15	.84	Girl	.15

* $p < .05$, ** $p < .01$, *** $p < .001$

pro-social /anti-criminal friends, criminal/anti-social friends, $t = 4.099$, $df = 194$, $p < .001$; alcohol use. $t = 3.246$, $df = 194$, $p < .001$, misuse by parent/career $t = 8.721$, $df = 194$, $p < .001$). Boys claimed better levels of family relation, social network, pro-social friends, whereas girls showed better school attendance and higher use of alcohol. The substance misuse scores by parents/careers emerged high in girls' group compared to those in boys' group. There were no statistically significant differences in personal identity scores between the gender groups.

Associations between the Individual Risk Characteristics of Young Offenders and Mental Health

The Phi coefficient ϕ and Cramer's V test, and Spearman correlation coefficient were first conducted to identify risk factors (identified by ASSET) that were most closely associated with the levels of Malaise that have been identified as characteristics of young offenders in the secure unit.

Table 3 shows the correlation analysis to identify the personal, familial, educational, and individual problems (independent variables) that are closely linked to the Malaise scores (dependent variables) of young offenders. The analysis also revealed that family and personal relationship variables were significantly associated with almost all problematic symptoms for both boys and girls. The results showed that educational variables and alcohol use were correlated with higher levels of Malaise for young offenders in the secure unit. With respect to personal identity variables, negatively perceived personal identity related risk factors predicted increased a likelihood of Malaise scores.

Risk Factors Associated with Mental Health Conditions of Young Offenders in Secure unit

To examine the expected relationships between possible multiple risk factors (familial, individual, and motivational) and the malaise characteristics of secure unit subjects more precisely, a series of multiple logistic regression equations was conducted by regressing the Malaise condition such as family and personal relationships, education, lifestyle, substance use, and personal identity) after recoding

Malaise variables into dichotomous dummy variables, because Malaise scores of eight or more are identified to be at a high risk of depression (Pound *et al.*, 1988).

Family and personal relationship risk factors Table 4 presents the family and personal relationship model. The two family and personal relationship factors were significant for the full sample and explained mental health characteristics of the secure unit boys and girls ($n = 196$). Regarding parental interactions, when compared with young adolescents who experienced good parental interest, young adolescents who experienced poor parental (or guardian) interest had 22.175 times greater odds of malaise symptoms ($OR = 22.175$, $p < .05$) compared to students who experienced generally good parental interest.

Young offenders from backgrounds of high family violence and abuse (very damaging and/or frequent) had greater odds for having higher levels of Malaise scores ($OR = 3.033$, $p < .05$) compared to students with no family violence and abuse. It may be the case that frequent emotional and physical abuse have significant negative mental health impacts that may occur regardless of whether one becomes an offender or not (Fergusson & Lynskey, 1997; Cooper *et al.*, 1996). It is reported that abuse effects children in almost all dimension of their life i.e. neurological impairment, intellectual functioning, socio-emotional functioning, social behavior, and social cognition (Ibid.).

Educational risk factors Table 4 presents the effects of education-related risk factors. For internalizing problems, students with significant problematic friendships were 32.7 times more likely to have the problem than students with mostly positive friendships ($OR = 32.734$, $p < .01$).

Life style risk factors Table 4 shows the effect of lifestyle factors on Malaise conditions. Social network was significantly associated with internalizing problems. Having had a problematic social network increased 12.214 times of the likelihood of having internalizing problems ($OR = 12.214$, $p < .05$).

TABLE 3. CORRELATIONS OF CHARACTERISTICS OF YOUNG OFFENDERS AND GENDER (N = 196)

Risk Factors	Malaise Boys	Conditions Girls
Family and personal relationships		
Level of interest in young person, praise and positive reinforcement	.47***	.45***
Boundary setting, level and consistency of supervision	.40***	.45***
Victim of physical, sexual or emotional abuse, neglect	.24	.44**
Continuity stability, bereavement, family breakdown, divorce	.37***	.49***
Offending against family/carers, aggression, defiance, running away	.33*	.44***
Past experiences of family and personal relationships	.38**	.35**
Capacity to provide appropriate care/discipline/supervision	.22	.47***
Education		
Previous school attendance	.34**	.49***
General ability, particular strengths and weaknesses	.46***	.38**
Young person's actual attainments in relations to peers' achievements	.44***	.40**
Behavior at school	.39**	.38**
Number and quality of friendships, degree of social isolation, victim	.36**	.40**
Previous educational experience	.47***	.43**
Lifestyle		
Social network: range of acquaintances and friendships		
Pro-social/anti-criminal friends, criminal/anti-social friends	.10	.31*
Constructive use of spare time	.03	.20
Young person's own disposable income	.17	.30*
Previous involvement in certain groups/gangs	.30*	.24
Substance Use	.13	.14
Tobacco use		
Alcohol use	.19	.14
Volatile substances (glue, solvents, and other)	.41**	.35*
Misuse by parents/carers	.20	.20
Personal identity	.11	.13
Sense of identity	.32*	.25
Self-esteem: estimation of own worth and value	.25*	.20
Self-images/self perceptions	.37*	.17
Self-presentation: communication skills	.32*	.19
Self-determination	.17	.23
Previous personal identity issues	.13	.317*

The Phi coefficient ϕ and Cramer's V test, and Spearman correlation coefficient were computed to obtain appropriate measures of strength of associations for nominal data. * $p < .05$, ** $p < .01$, *** $p < .001$

Substance misuse related risk factors In Table 4, the scores of the malaise symptoms were modeled in a regression analyses upon the selected substance misuse for the whole sample (N = 196). Students with occasional use of volatile substances (38.6% of boys and 74% of girls were on occasional to heavy use) were more likely to have malaise symptoms than students who never used volatile substances (OR = 2.566, $p < .05$). Consistent with the previous literature (Clark & Bukstein, 1998; Pikaenen, 1999), the above results showed firm support for both direct and indirect effects on a result of illicit substance use: these were associated with higher risks of having internalizing behavior problems although cigarette smoking was not associated with high risk amongst boys and girls in the secure unit.

Personal identity related risk factors Perceived identity had a significant negative effect on Malaise conditions for boys and girls in the secure unit (N = 196). Young male and female offenders who were somewhat confused/unhappy about self-identity, compared to students who were developing appropriately, had a significantly increased likelihood of delinquent behaviors in the secure unit (OR = 11.256, $p < .05$, Table 4). According to Smith, Murphy and Coats (1999), people have mental models of the self as a group member and of groups as sources of identity and esteem. These models affect thoughts, emotions, and behaviors related to group membership. The figures suggest the possibility that internalizing problems among secure unit students are linked to deviant group attachment (i.e. time and activities shared with offending group).

TABLE 4. FAMILY-PERSONNEL RISK, EDUCATION, LIFE STYLE, SUBSTANCE MISUSE, AND PERSONAL IDENTITY FACTORS PREDICTING MALAISE CONDITIONS OF THE SECURE UNIT SUBJECT (N = 196)

Risk Factors	Malaise Indicators		
	B	S.E.	OR (95%CI)
Gender	-1.10	.56	.90
Level of interest in young person, praise and positive reinforcement			1
Generally good			13.09*
Adequate	2.57	1.06	13.09*
Poor	3.09	1.23	22.17*
Little interest in young person	2.12	1.23	8.37
Boundary setting, level and consistency of supervision			1
Victim of physical, sexual or emotional abuse, neglect			1
Not experienced			3.80
Marked impact	1.33	.86	3.80
Significant harm	1.10	.97	3.03*
Very damaging and/or frequent	.76	1.17	2.13
Continuity stability, bereavement, family breakdown, divorce			
Offending against family/carers, aggression, defiance, running away			
Capacity to provide appropriate care/discipline/supervision			
Past experiences of family and personal relationships			
Previous school attendance			
General ability, particular strengths and weaknesses			
Young person's actual attainments in relations to peers' achievements			
Behavior at school			
Number and quality of friendships, degree of social isolation, victim			1
Mostly positive			1.45
Mixed	.37	1.01	1.45
Frequent difficulties	1.98	1.04	7.24
Significant problems	1.48	1.31	32.73**
Previous educational experience			
Social network: range of acquaintances and friendships			1
Generally good			6.30*
Specific concerns	1.88	.79	6.30*
Some concerns	1.49	.81	4.44
Very isolated/odd relationships	2.50	1.18	12.21*
Pro-social/anti-criminal friends, criminal/anti-social friends			
Constructive use of spare time			
Young person's own disposable income			
Previous involvement in certain groups/gangs			
Tobacco use			
Alcohol use			
Volatile substances (glue, solvents, and other)			1
Never			1.55
Previous use-not current	.44	.75	1.55
Occasional use	.94	.39	2.56*
Regular use	.71	.64	2.04
Heavy use	1.72	1.59	5.99
Volatile misuse by parents/carers			
Sense of identity			1
Developing appropriate sense of identity			1.05
Specific concerns	.05	.46	1.05
Somewhat confused unhappy about identity	2.42	1.02	11.25*
Significant problems	2.38	2.07	10.83
Self-esteem: estimation of own worth and value			1
Developing appropriately			1.61
Slight problems	.48	.56	1.61
Noticeably inappropriately	-1.71	1.13	.18*
Significant problems	-1.21	2.02	.29
Self-images/self perceptions			
Self-presentation: communication skills			
Self-determination			
Previous personal identity issues			

Chi-Square = 58.92 for 92 df

B indicates estimated regression coefficient; SE, standard error; OR indicates odds ratio and 95% confidence Intervals (CI);

*p < .05, **p < .01, ***p < .001

Besides, those with slight self-esteem problems, compared to those with appropriately developing self-esteem, explained negative relationship with internalizing problems ($OR = .181, p < .05$).

DISCUSSION

This study was to show the trajectories of multi-dimensional variables such as families, education, individual life styles, substance abuse, and personal identities on internalizing, externalizing problems that prevail in vulnerable groups, such as secure unit students. This study expected to give a valuable insight into the lives and characteristics of students at secure units given the multi-dimensional aspects of the results for the secure unit youth.

Secure unit students with histories of poor parental interest were more likely to have higher scores for internalizing distress. Significant proportions of secure unit student families were poor and of lower economic status parents who supervise children less closely than higher economic status parents. These mechanisms help to understand why lower economic status parents with economic hardship are also more likely to select inadequate parenting and power-assertive discipline tactics (Brook, Whiteman & Zheng, 2002; Heimer, 1997). Parental power-assertive discipline with poor personal relationships could lead to low control in aggressive impulse or other behavior problems in youth (Holmes-Lonergan, 2003; Hoff, Laursen & Tardif, 2002; Patterson & Dishion, 1997), whereas parental support and family coherence could strengthen the coping capability of children in behavior management (Cho & Cho, 2007; Park & Hong, 1997).

The study indicated that the internalizing behavior of youth is influenced by familial abuse or violence, lack of interest in young people, and family disruption, consistent with the argument that "young people have learned definitions favourable to violence through interactions with parents" (Heimer, 1997, p. 818). Higher scores of problematic internalizing behaviors are specific to parental matters or familial functions. Both Korean and

Western youth who perceive their families as malfunctioning or abusive were more likely to have internalizing problems, as the children would reproduce in behavior child-rearing patterns derived from the family of origin (Holmes-Lonergan, 2003; Hoff, Laursen & Tardif, 2002; Heimer, 1997; Kim & Oh, 2006; Park & Hong, 1997).

Another finding was that the severity of disruptive behaviors in school is more likely to reduce internalizing distress in secure unit students. The fact that bad behaviors towards others appears not to influence personal mental well-being, means that the secure unit youths are not sensitive to seeing themselves as taking social responsibilities. Some students had disconnected themselves from the school before placement in the secure unit. There were more likely to have higher scores for withdrawn symptoms than those who had attended a community school. The serious risk behaviors may have resulted in school dropouts in the past and they may be more likely to be in jeopardy if they are still involved in high risk behavior when they are in school. Better efforts are needed for more students who make the transition from general schools to secure unit schools.

Secure unit students with poor quality of delinquent friends are shown to be more likely to have internalizing problems. The finding supports a prior study of the effectiveness of an inner-city peer-mentoring program in modifying the attitudes and behaviors involving violence (Sheehan *et al.*, 1999). The absence of non-delinquent peers in secure unit students may explain the high risk of distorted thought problems, which in turn may lead to further violations. Alternative social support may substitute for the friendship deficit would help secure unit students facilitate healthy thoughts and modify attitudes towards violence. There is an argument that one of the important objectives of school education is to let children obtain "capacity for being serious about life, the application of intelligence, of moral judgment, of reflection and of sensitivity...social justice, the use of violence...serious exploration of what is of value, of finding meaning and sense in the world they inhabit" (Pring, 1995). While no secure unit intends to fail to educate young people in

regarding themselves as taking social responsibilities, once the gap between need and service is known, there are moral imperatives to respond to the moral education needs found in Korean secure unit students (Kim, 2005). Unless the unmet needs of these morally damaged young people are solved, they will continue to involve themselves in similar high risk behaviors.

Secure unit students' educational attainments did not influence the likelihood of increasing internalizing distress but of reducing it. In contrast to the general idea that community students suffer from school performance strain (Chou, 2006; Fenzel, Magaletta & Peyrot, 1997; Hallfors *et al.*, 2002; Kang & Kim, 2004), secure unit students are not motivated by succeeding in school or by peer feedback as community students usually are. Secure unit students do not need to be burdened by succeeding in school but they should be better motivated in order to meet personal developmental needs. This provides support for the argument that the educational environment of the secure unit is inadequate. It appears that the education component of the secure unit does not achieve the goal of improving general academic quality. Researchers have noted that there is a strong link between low achievement in education and high rates of criminal behavior and one of the important contributors through a later adult criminal career is custody experience as a juvenile (Henry *et al.*, 1999). The findings suggest that more efforts be made by secure unit educators to ensure the quality of education for young offenders.

The results also showed that poor management of social network factors may serve as a risk factor for increased likelihood of internalizing distress. Students with isolated/odd friendships were more likely to experience internalizing distress problems, in agreement with the study on the association between high risk-taking life style, mental and behavior problems (Moon & Hwang, 2006; Sheehan *et al.*, 1999). For students with behavior problems, being involved in antisocial network like gangs affect the poor self-perception of youth (Annette, Mitchell & Michael, 2001), increasing strain & emotional stress and engagement in high risk activity, while not-at-

risk students would allocate time to future oriented activities (Keith *et al.*, 2005). This result is accordance with the previous documentations that the association between poor peer relationship and cognitive distortion of reality (Fried & Reppucci, 2001; McCarty & Vander, 2007). It would appear that the risk judgment of youth is significantly influenced by peers; particularly in relation to dominant peer perceptions concerning lifestyle.

Many studies have reported that use of alcohol or drugs tends to function as the onset condition for criminality (Kim, 1999; Sutton, Utting & Farrington, 2004). The major findings of this study show that volatile substance misuse is related to increased scores for anxious or depressive distress. This finding is confirmed by studies that indicate that an early onset of substance use may result in subsequent mental difficulties (Lubman *et al.*, 2007; Weiner, Abraham & Lyons, 2001). This means that the use of volatile substances is still problematic in secure unit students, although it may be underreported. If the frequent under-reporting of substance misuse (Tomilintonen & Leena, 2004) is considered, the issue becomes even more problematic. Gender effects were also evident in substance use: low level of mental well-being amongst female young offenders was more likely to be influenced by substance misuse. This matches previous studies which suggest that the higher rates of internalizing problems in male and female young offenders (Kurtz, Thornes & Bailey, 1998; Nicol *et al.*, 2000). Particularly for Korean secure unit students with alcohol and tobacco that appear to be associated with high risk behavior, it may be important to provide special services and may need appropriate preventive treatments.

In keeping with the studies on identity issues in adolescences (Beyers *et al.*, 2004; Cho & Cho, 2007; Lukasiewicz *et al.*, 2007), poor self-identity and low self-esteem were related to positive factors indicating higher scores of internalizing distress. This was closely linked to negative features of identity dimensions such as confused identity or underestimation of self-esteem. Hagan (1994) suggests that the subculture of prison praises the acting out of violent behavior. In this sample, it may be that the

more violent behavior acted out, the more awkward self-identify or self-esteem generated, in contrast to the social norm. Taken together, the complexity of identity in secure unit students seems to show the variation in the experience of a sense of identity and may be a reflection of difficulty in identity formation. A diffused identity and rejecting towards good levels of self esteem may be indicative of unstable transitional experiences during developmental stages, as the process of identity is strongly associated with the realization of the situation (Luyckx *et al.*, 2005; Kroger, 2004).

From the overview of findings, it is possible to propose a typology of multiple variables that predict internalizing problems amongst secure unit students and to suggest that these risk variables may provide new insights into the treatment of young offenders in Korea. In looking at multiple risk factors in this way, Korean young offenders at an early adolescent age (12 to 15) can be viewed as a victimized group, socially isolated, and disadvantaged. The various forms of family, personal, educational, substance abuse, and individual behavior disadvantages are significant in causing internalizing problems in Korean secure unit students. First of all, these findings show the need for young people who have experienced such disadvantages to be identified, using multifaceted assessment tools. After an appropriate multifaceted assessment, all possible approaches should be considered to help Korean young people in secure units who are victimized, socially isolated, and disadvantaged. Altogether, the findings suggest that these young offenders need specific and integrated support and treatment to overcome internal motivations that may lead to internalizing behavior problems.

Limitations of the study methods were: Application of these results should be only generalized to the students in the secure unit and must be done with caution to the general population of adolescents because the study samples came from correctional facilities. Interpreting the findings from the present analysis, should be also cautious, as data was gathered from interviewers and student self-reports. Further research on the effectiveness of specific and integrated treatment programs needs to

be tested for providing a basis for theoretically informed rehabilitation programs and better development of the disadvantaged young people in correctional facilities.

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