비행청소년의 ADHD 증상, 자아존중감 및 우울

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ADHD Symptoms, Self-Esteem, and Depression of Juvenile Offenders

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요 약 본 연구는 비행청소년의 우울에 영향을 미치는 요인을 규명하기 위한 서술적 조사 연구이다. 연구대상은 D 광역시 소재 의료 소년원에 입소한 비행 청소년 275명이었으며, 자료 수집기간은 2011월 5월에서 8월까지였다. 수집 된 자료는 SPSS 20.0 통계프로그램을 이용하여 서술적 통계, t-test, ANOVA, Pearson's correlation coefficient, multiple regression으로 분석하였다. 본 연구결과 대상자의 32.4%와 52.0%는 임상적 수준의 ADHD와 우울로 나타났 다. 비행청소년의 ADHD 증상 및 자아존중감은 우울과 유의한 상관관계가 있었다. 비행청소년의 우울에 영향을 미치 는 요인은 자아존중감, ADHD증상, 지각된 건강상태로 나타났으며 이들 전체 변수의 설명력은 37%였다. 따라서, 비 행청소년들의 건강상태를 증진시키고 ADHD증상을 치료하고 자아존중감을 향상시킴으로써 우울을 예방하고 감소시 킬 수 있을 것으로 생각한다.

주제어 : 청소년, ADHD, 자아존중감, 우울

Abstract This study aimed to identify factors that influence depression in juvenile offenders. A cross-sectional study design was used. The participants were 275 juvenile offenders from D city. The collected data were analyzed using t-test, ANOVA, Pearson's correlation coefficients, and multiple regression with the SPSS/WIN 20.0 program. Of the participants, 32.4% and 52.0% were in the clinical group for ADHD and depression, respectively. ADHD symptoms and self-esteem were significantly correlated with depression. The final model showed that depression among juvenile offenders was significantly influenced by perceived health status, ADHD symptoms, and self-esteem. These variables accounted for 37% of the variance of depression.

Key Words : Juvenile, Attention deficit hyperactivity disorder, Self-concept, Depression

1. Introduction

Juvenile offenders lack self-control, are impulsive, exhibit low self-esteem, show high levels of depression and anxiety, and have a higher frequency of mental disorders such as substance-related disorders,

depression, and attention deficit hyperactivity disorder (ADHD) than healthy adolescents do [2][6][15]. Juvenile offenders have difficulty developing into healthy adults and may pose a social threat; therefore, they are becoming a severe social problem rather than a personal problem reflecting only transient developmental characteristics.

The delinquent behaviors shown in adolescence, unlike antisocial behavior in adults, have a high correlation with affective problems such as depression [15]. Depression has been suggested as the most significant and influencing predictor of delinquency in adolescents as well as mental health in healthy adolescents [1][3][14].

Systematic reviews have shown that juvenile offenders experience higher rates of depression than general youths, with estimates ranging from 15 to 42% [1][2][3][4]. According to some studies, depression among this group has been shown to be associated with childhood attention deficit hyperactivity disorder (ADHD) and low self-esteem [5][6][7][21].

The high prevalence of depression among juvenile offenders indicates a need to better understand factors influencing depression. Several studies have been conducted on the depression of juvenile offenders [2][4][11][15]. However, the majority of these studies focused on delinquency prevention, single variables, mainly for non-forensic samples. Few data are available to identify the predictors of depression. Identifying and managing the influencing factors on depression is critical to prevent recidivism, suicide, and mental illness in adulthood [1][2].

We aimed to identify influencing factors on the occurrence of depression among juvenile offenders.

2. Methods

2.1 Design and sample

A cross-sectional descriptive design was used to identify depression in juvenile offenders. Participants were recruited from juveniles aged 13 and 18 years who were male and committed to training school of Daesan (n = 275) in D metropolitan city in Korea. The required sample size was determined by G∗Power 3.13; the total sample size of 146 subjects was calculated with an effect size of .15, alpha of .05, power of .95, and number of predictor of 6, using multiple regression.

This study was reviewed and approved by the Chungnam National Medical School Institutional Review Board (No. 11 - 12). Research subjects were recruited through individual interviews with juveniles and parents who met the selection criteria and agreed to participate. Data collection was conducted through individual interviews by two trained researchers. The study's purpose and procedures were explained, including voluntary participation and withdrawal as well as anonymous data collection solely for research purposes. Upon obtaining subjects' written consent forms, the study proceeded.

2.2 Measures

2.2.1 ADHD symptoms

The ADHD symptoms scale and the ADHD DSM form Youth Self Report (YSR) developed by Achenbach & Rescorla [8] and translated by Oh et al. [9] were used to measure attention problems and aggressive behavior. The scale was a three-point Likert scale ranging from 0 (strongly disagree) to 2 (strongly agree) with the higher scores indicating a higher level of ADHD symptoms. A suggested cutoff score of 9 in DSM-ADHD was used to divide participants into two groups (normal or ADHD group). Cronbach's alpha was .83.

2.2.2 Self-esteem

The self-esteem scale developed by Rosenberg [10] and revised by Jeong [11] was used. This 10-item measure was rated with a 4-point Likert scale, and

higher scores indicated higher levels of self-esteem. As an indicator of reliability, Cronbach's alpha was .80 in a study by Jeong [11] and .76 in this study.

2.2.3 Depression

The instrument used to measure depression was the Center for Epidemiological Studies Depression Scale (CES-D) developed by Radloff [12] and revised by Choi, Cho, & Yang [13]. This 20-item measure was rated on a 4-point Likert scale with higher scores indicating higher levels of depression. A suggested cutoff score of 16 was used to divide participants into two groups (normal or ADHD). Cronbach's alpha was .91 in a study conducted by Choi, Cho, & Yang [13] and .91 in this study.

2.2.4 Demographic characteristics

Demographic characteristics, work environment-associated features, perceived health status, and job satisfaction were assessed with a self-report questionnaire.

2.3 Statistical analysis

The collected data were analyzed in SPSS version 20.0. An independent t-test was conducted to compare the main key variables between two groups of new nurses. An independent t-test, one-way ANOVA, and Pearson correlation were used to identify covariates in each group. To find the key determinants of depression in participants, we used hierarchical multiple regression analysis including demographics, ADHD symptoms, and self-esteem.

3. Results

3.1 Demographic and delinquent characteristics

The mean age of subjects was 16.3 years old, and the cases of "drop-out from school" accounted for 51.6%. The percentage of subjects living with "parents" was 55.3%, with "single parent" was 18.9%, and with "parents absent" was 25.8%. For the family monthly income, more than half made less than 2‑3 million won, and 58.9% of subjects had part-time jobs. The health status currently perceived by the subjects was "very good" in 29.1% of cases, "good" in 44.7% of cases, and "moderate" in 26.2% of cases. The highest percentages for delinquent behavior and motive were found in "theft" and "accident," respectively. Most subjects had experienced more than two convictions <Table 1>.

3.2 ADHD symptoms, self-esteem, and depression of subjects

Of the participants, 32.4% and 52.0% were at clinical levels of ADHD symptoms and depression, respectively. The mean of self-esteem was 0.9, lower than the median value <Table 2>.

3.3 Relationship of ADHD symptoms, self-esteem, and depression

As presented in Table 3, ADHD symptoms and self-esteem were significantly correlated with depression across all participants <Table 3>.

3.4 Predictors of turnover intention between groups

Multiple linear regression analyses were performed using perceived health state, ADHD symptoms, and self-esteem as independent variables and depression as a dependent variable <Table 4>. These variables accounted for 37% of the variance of depression (F = 33.6, $p < .001$), and self-esteem ($\beta = -.42$, $p < .001$) was found to be the highest significant predictor.

〈Table 1〉 Demographic and delinquent characteristics of Subjects (N=275)

Characteristics	Categories	n	%
Age(year)	13-15	74	26.9
	16-18	201	73.1
	M(SD) 16.3(1.20)		
Education level	Student	133	48.4
	Drop-out	142	51.6
Living with family	Parents	152	55.3
	Single parent	52	18.9
	Parent absent	71	25.8
Job	Part time	162	58.9
	Have not	113	41.1
Family income (million won/month)	<2	148	53.8
	2-3	81	29.5
	≥3	46	16.7
Perceived health status	Very good	80	29.1
	Good	123	44.7
	Moderate	72	26.2
Deliquent behavior	Theft	98	36.5
	Homicide & Robbey	12	4.4
	Violence	44	16.0
	Violation of probation	73	26.5
	Violation of the road traffic law	39	14.2
	Sexual violende	40	14.5
Motive	Accident	112	40.7
	Curiosity	43	16.5
	Mistakes	63	22.9
	Entertainment	10	3.6
	Living	27	9.8
	Friend's temptation	37	13.5
Number of convictions	1	46	16.7
	≥2	229	83.3

〈Table 2〉 ADHD symptoms, self-esteem, and depression (N=275)

Variables	M(SD)	N(%)
ADHD symptoms (0-2)	0.7(0.35)	
ADHD group (DSM-ADHD>9)		89(32.4)
Normal group (DSM-ADHD≤9)		186(67.6)
Self-esteem (1-4)	2.7(0.39)	
Depression (CES-D) (0-3)	0.9(0.54)	
Normal group (<16)		132(48.0)
Mild group (16-25)		82(29.8)
Severe group (≥25)		61.22.2)

〈Table 3〉 Correlations among ADHD symptoms, self-esteem, and depression (N=275)

Variables	ADHD symptoms	Self-esteem	Depression
	r(p)	r(p)	r(p)
ADHD symptoms	1		
Self-esteem	-.34 (<.001)	1	
Depression	.41 (<.001)	-.54 (<.001)	1

〈Table 4〉 Influencing factors on depression

Variables	B	t	p
Perceived healthstatus	-.16	3.28	.001
ADHD symptoms	.23	4.53	<.001
Self-esteem	-.42	-7.91	<.001

Adjusted R^2 = .37
F(p) = 33.6(<.001)

4. Discussion

Unlike adult's antisocial behavior, delinquent behaviors in adolescents have a high correlation with negative affect such as depression; thus, efficient depression management is necessary as depression in delinquent adolescents is reported to be significantly higher compared than that in healthy adolescents [14][15].

In this study, the ADHD group made up 32.4% of subjects, a result similar to that of Study [16]. Study [5] reported that ADHD in adolescents can cause severe learning problems, dysfunctional relationships with friends or teachers, a decline in self-esteem, and depression and anxiety, increasing the likelihood of delinquency. Therefore, active intervention is necessary, as the absence of early intervention in adolescent ADHD may allow it to develop into adult ADHD or antisocial behaviors [17].

Subjects' self-esteem was higher than that in a study conducted with juvenile offenders [18][16] and

similar to that in a study conducted with healthy male high school subjects [19]. A replication study confirming the findings of this study is required in the future, and an intervention that helps positive self-assessment is necessary to recover the damaged self-esteem in delinquent adolescents [20].

In this study, the depression group was found to be large, accounting for 52% of all subjects. This is similar to the results of a study that showed that depression is higher in delinquent adolescents than in healthy adolescents [21]. As depression in delinquent adolescents is correlated with repeated offense [22], continuous prevention and intervention, including depression screenings, are crucial.

ADHD symptoms have a significant positive correlation with depression, and self-esteem has a significant negative correlation with depression. This finding is similar to those of studies [5][19][21]. A possible explanation is that the higher depression is caused by ADHD tendencies continued failure to perform, isolation and convictions due to low self-esteem and their parents, teachers, and peer relationships comes from dissatisfaction with negative feedback can be a result of interpersonal relationships. In addition, it is evident that self-esteem and ADHD symptom management is essential in order to reduce depression in delinquent adolescents.

A regression analysis revealed that the significant factors for depression in delinquent adolescents were self-esteem, an ADHD symptom, and perceived health status (in that order); these variables were found to have a total of 37% explanatory power for depression. Therefore, it is believed that depression can be prevented and reduced by improving early intervention, health status, and self-esteem in juvenile offenders with ADHD symptoms. However, this study was conducted with adolescents in one region and has limited generalizability. Further research is required to develop and assess an intervention that can efficiently manage depression in juvenile offenders based on the results of this study and of others that include a wider range of subjects.

5. Conclusion

This study's findings suggest that youth in juvenile detention are affected by clinical levels of depression, and it is necessary to develop a self-concept and health promotion program by considering psychological care for depression as well as physical care.

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