Gender Differences in Delinquent Behavior among Korean Adolescents

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ABSTRACT: The present study examined gender differences in the rate, type, and relevant variables underlying delinquent behavior among South Korean adolescents. Although female delinquency is increasing and becoming more violent in South Korea, the rate of delinquent behavior was found to be much lower among female than among male adolescents and female adolescents were much less involved in antisocial, aggressive, and psychopathic delinquent behavior compared to male adolescents. Moreover, compared to female delinquent adolescents, male delinquent adolescents were found to have greater tendencies towards antisocial personality, sociability, being sexually abused, and alcohol and drug use. In contrast, female delinquent adolescents had a greater tendency toward depression than male delinquent adolescents. No gender differences were found in the association between family dynamics and delinquent behaviors. Age and antisocial personality had the most significant total effects on male delinquent behavior. In contrast, alcohol and drug abuse was the strongest contributing factors in female delinquent behavior, although the level of alcohol and drug abuse was much higher among male adolescents than among female adolescents.

KEY WORDS: Gender differences; delinquent behavior; Korea; adolescents.

The nature and extent of delinquent behavior among adolescents is becoming a social issue in South Korea. There is a general consensus that a complex interaction exists between environmental (social, familial, and economic) and personal characteristics (personality, aptitude, maturity, and psychopathology) and that this interaction is associated with increased delinquent behavior among adolescents.[1–3]

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It has also become clear that there are differences in male and female juvenile delinquent behavior. Generally, criminal acts and offenses committed by female adolescents are less serious in nature and occur less frequently at every age, and within every racial or ethnic group, compared to those committed by male adolescents.[3,4] Traditionally, delinquent and violent behavior has been viewed as an exclusively male phenomenon;[5,6] as a result, attention has been focused on the delinquent behavior of male adolescents. The exclusion of females from this type of research has led to a paucity of studies examining gender differences in delinquent and violent behavior. This lack of research has contributed to several misconceptions about female involvement in delinquency and violent crime.[7]

Gender is one of the strongest and most frequently documented correlates of delinquent behavior.[8] Recent research has targeted the apparent increase in the rate of violent offenses committed by female adolescents. During the past decade, a growing body of literature has been focused on female gangs and the involvement of girls in violence,[9–12] and researchers have begun to examine the relationship between female delinquent behavior and recent changes in gender roles.[13] To date, however, research on the relationship between gender roles and female delinquent behavior has been sparse and has yielded inconsistent results, and, thus, led to little theoretical advancement in this area. Almost all theories of delinquency have been developed to explain male delinquency. While some researchers believe that separate theories are required to account for male and female delinquency, others argue that risk factors for delinquency in males and females are basically similar,[14,15] and that the same models and theories can be used to explain delinquent behavior in both genders. Unfortunately, there has been very little research testing these various theoretical explanations for the gender gap in delinquency rates, and to date no consensus has been reached regarding whether the origins of female delinquent behavior are similar to, or different from, those of male delinquent behavior.[16]

Additional paradigms are required to understand and explain gender differences in juvenile delinquency and criminal acts. Several studies have suggested that males and females experience substantially different levels of exposure to delinquent peer attitudes in their everyday lives.[8] That is, females are less likely than males to be in peer groups engaging in delinquent activities, although it is difficult to isolate and quantify the effect of such exposure on sex-specific rates of delinquent behavior. Gender differences in delinquency may also be explained by variations in

the weakness of social bonds. That is, lower rates of delinquency in females may be due to their stronger attachment to family, school, and positive peer associations, as well as their commitment and involvement in conventional school activities.[7] Differences in social class and family structure may also be factors affecting the gender gap in delinquency.[7] In this regard, Deschenes and Esbensen[7] suggest that there are greater gender differences among patriarchal families than among egalitarian families because of differences in socialization practices; that is, in a patriarchal family, boys will be socialized to be more aggressive and more active than girls. Another explanation for gender differences in the prevalence and type of delinquent behavior may be that females are more likely to feel guilty than males about committing violent offenses. In contrast to females, males are more likely to neutralize acts of physical violence.[7] Another possible explanation for the elevated rate of delinquent behavior among male adolescents is their higher level of aggression. Research has repeatedly shown associations between levels of aggression and physically aggressive and violent behavior in both adolescents and adults.[17] Aggression and impulsiveness, which are more typical of males than females, contribute to criminality and violent behavior. In contrast, emotionality, which is more characteristic of females than males, is more often a factor in depression and suicide attempts.[18] Thus, the development of personal problems is thought to lead more often to affective disturbances in female adolescents and to aggressive and behavioral disturbances in male adolescents.[18] Differences in male and female adolescents' brain structures and endocrine systems, such as their levels of testosterone, could help to explain this discrepancy.[19]

While the rate of delinquency is lower among female than among male adolescents, the incidence of female delinquency is escalating,[5] and more females are involved in violent behavior, gang activity, burglary, aggravated assault, and prostitution.[13] Recent research on female gang involvement in Western countries has indicated that both male and female gang members have higher rates of criminal involvement.[20,21] Both in Western countries[10] and in Korea,[22] the mass media has published articles suggesting that female student adolescents are becoming more violent and that the incidence of female juvenile delinquency is increasing. Recently, some Korean girls have run away from their home to form gangs, living together and becoming involved in gang activities, such as extorting money and valuables from other students in their schools. Although such

cases are very rare, school bullying by these girl gangs, using behavior similar to that used by boys, has become a serious problem in South Korean school.

Little is known regarding gender differences in the rate, type, relevant variables, and developmental processes of delinquent behavior; however, knowledge about these differences is important for several reasons. First, it would aid in the development of gender-specific theories to explain female involvement in delinquency and violent offenses. Second, awareness of these potential differences may help in the early detection of children and adolescents who are in need of intervention, as well as aiding in the development of more gender-specific interventions.

The aims of this study were (a) to examine gender differences in the rate, type, and relevant variables of juvenile delinquent behavior, and (b) to identify gender differences in the effects of family dynamics, personality, academic achievement, sexual abuse, and alcohol and drug abuse on delinquent behavior among Korean adolescents.

Methods

Participants

Participants in this study consisted of 2100 adolescents including 1396 males and 704 females. This population consisted of 1321 student adolescents (697 males and 624 females) and 779 delinquent adolescents (707 males and 72 females). In this paper, the term student adolescents refer to the adolescents enrolled in school. Among student adolescents, 48.2% were in middle school, and 51.8% were in high school. Student adolescents were recruited from the Korean student population (middle and high schools) using a proportional stratified random sampling method. In South Korea, there are 11 juvenile corrective institutions for males, and only one for females, reflecting the lower prevalence of delinquent behavior by female adolescents compared to male adolescents in South Korea. Hence male delinquent adolescents were recruited from 11 juvenile corrective institutions for male located in South Korea using a proportional stratified random sampling method, whereas all female delinquent adolescents were chosen from a single juvenile corrective institution for females in Anyang, South Korea. Reasons for the confinement in the juvenile corrective institutions included violent offenses such as fighting or threatening (37.2%), property offenses such as theft and burglary (28.2%), and alcohol and drug-related offenses (11.8%). The mean term of stay of adolescents in the juvenile corrective institutions from the time of incarceration which can be found in an official record to the time of the data collection was 5.3 months. The adolescents who were incarcerated at the time of data collection were

excluded from the sample, because they should attend special orientation sessions the juvenile corrective institution offers.

Stratification was based on two variables: the participant's place of residence (urban or rural area) and the type of institution (middle and high school, juvenile corrective institution). The age of the adolescents ranged from 12 to 18 years old (mean 15.7), and all were Korean. About 76.2% indicated their socioeconomic status as middle class, 16.7% as higher-middle class, and 7.1% as lower-middle class. Among student adolescents, 82.2% reported living with both biological parents, compared with 71.3% of the delinquent adolescents.

Procedures

Data were collected over a three month period, from December 2000 to February 2001, using a cross-sectional design, via anonymous, self-reporting questionnaires administered by a principal investigator and three trained research assistants. The purpose of this study was disclosed to participants and their parents, and they were informed that the survey would require between 2 and 3 h of their time. They were asked to read a standard research consent form prior to participating, and they were assured that all information they provided would be kept confidential and would not be shared with other persons.

Informed consent was obtained from the parent of all participants by mail one month prior to the data collection. In addition, informed consent was obtained from the students and the adolescents incarcerated in juvenile corrective institution, prior to the distribution of the questionnaire. Only cases in which both adolescent and their parents all gave informed consent were included in this study. Among the total of 2100 participants, 1994 adolescents (1265 student adolescents, 729 delinquent adolescents) consented to participate. The rate of consent was therefore 94.9%. There were no significant differences between participants and non-participants. Ethical approval was received from the directors of the juvenile corrective institutions and the principals of the middle and high schools that participated in the study.

Data gathering sessions were scheduled at times that were convenient for the participants. Group-administered questionnaires were conducted on a specified day. To increase the reliability of responses, the principal investigator and research assistants walked around the room to monitor participants and answer any questions. After removal of cases with incomplete data, the total sample size was 1908 adolescents (95.7% of the total sample), consisting of 1286 males and 622 females.

Research Variables and Measurement

The etiology of delinquency has been associated with many psychological and sociocultural factors. Some of the popular theoretical causes involve gender role, family dysfunction, intellectual ability, self-perception, and parental neglect.[13] While these are believed to be associated with delinquency, there are many other related variables.

Based on previous studies, family dynamics,[23,24] personality including antisocial personality, depressive tendency, sociability, feeling of isolation, psychosomatic symptoms,[25–27] academic achievement belief,[24] sexual abuse,[13,28,29] and alcohol and drug abuse[30–33] were extracted as independent variables and delinquent behavior was set up as a dependent variable.[23,24,31,32]

Since some of the research variables (e.g., family dynamic environment) are culture-bounded concepts, a sound approach would be to develop instruments specifically applicable to a particular cultural group. Given this context, it was necessary to develop an easily scored, reliable, and simple instrument for Korean adolescents. The instrument for assessing these research variables was a composite of commonly used instruments with socio-demographic variables, and a Mental Health Questionnaire for Korean Adolescents (MHQKA), all of which were developed to be specific for a Korean social and cultural background.[34] The MHQKA has a number of subscales, including a Family Dynamic Environment Scale, an Antisocial Personality Scale, a Sociability Scale, an Isolation Scale, and an Academic Achievement Belief Scale. These subscales were developed based on existing scales and Korean social and cultural context.[34] That is, the Family Environment Scale[35,36] was reviewed for the family dynamic environment scale; the Aggression Questionnaire[37] was reviewed for the antisocial personality scale; the Social Desirability Scale[38] was reviewed for the sociability scale; the Loneliness Scale[39] and Social Support Appraisal Questionnaire[40] were reviewed for the feeling of isolation; and the Intellectual Achievement Responsibility Questionnaire[41] was reviewed for the academic achievement belief scale.

Each scale and item was reviewed by a panel of five experts for content validity, and reliability testing using test-retest reliability and internal consistency, item analysis, and factor analysis for construct validity were performed. In this procedure, principal component analysis was used as the factor extraction technique. The factor having an eigen value of 1.0 or more and a factor loading greater than .35 was set as an indicator of an acceptable factor. Also, subscales of the MHQKA showed Cronbach's α from .64 to .95, which is considered appropriate for the study.

Socio-demographic data included gender, age, socioeconomic status, and school year of student adolescents. Term in a juvenile corrective institution was added to socio-demographic data for delinquent adolescents. Respondents were asked to identify the extent of agreement with statements, using a 6 point Likert-type scale that ranged from 0 to 5 (0 = strongly disagree; 1 = disagree; 2 = somewhat disagree; 3 = somewhat agree; 4 = agree; 5 = strongly agree); lower scores indicate a more positive perception of their situation. Some of the items using a negative sentence were scored by reverse coding. Cross validation of this questionnaire with the above existing subscales enabled us to assess the adequate psychometric properties of each subscale. The full questionnaire is available from the corresponding author upon request.

In addition, depressive trend of personality was measured by the Self Rating Depression Scale,[42] and psychosomatic symptoms were measured by the Self Rating Anxiety Scale[43] and a 22-item Screening Score of Psychiatric Symptoms indicating Impairment.[44] Alcohol abuse was measured by the

CAGE questionnaire[45] and the Michigan Alcoholism Screening Test.[46] The definition and operationalization of these constructs are described in more detail below.

Family Dynamics. In this study, family dynamics refers to the psychological climate within a family, derived from parenting attitudes, marital relationships, parent–child relationships, and relationships among family members.[47,48] Family dynamics were assessed using seven indicators, including paternal parenting skills (7 items), maternal parenting skills (7 items), family stability (14 items), parent–child relationship (12 items), satisfaction toward one's own home (4 items), relationships among family members (3 items), and mothers working outside the home (3 items). Cronbach's α was from .64 to .88.

Antisocial Personality Tendency. Antisocial personality is characterized by repetitive behavioral patterns lacking moral and ethical standards, and bring a person into continuous conflict with society. Behavioral characteristics include aggressiveness, callousness, impulsiveness, irresponsibility, hostility, a marked emotional immaturity, and poor judgement.[49] The antisocial personality was measured with the 10 items selected from the MHQKA.[34] Example items include displeasure without reason, disputes (arguments), struggles, destruction of property, acting out, ego-centric behavior, irritability, and venting one's anger toward others. Cronbach's α was .84.

Sociability. Sociability is the ability to create satisfactory personal relationships, engage in social situations, and acquire the beliefs, habits, and values of society, as well as societally accepted modes of behavior, primarily through the socialization process.[50] Sociability was measured with an 11-item subscale from the MHQKA.[34] These items include statements such as "I have never intensely disliked anyone.", "I like to gossip at times," "I frequently meet with others," "I receive respect and praise from others," "I can exchange information with others," "I have many friends," and "I am willing to support a person in a misfortunate situation ." Cronbach's α was .85.

Psychosomatic Symptoms. Psychosomatic symptoms refer to conditions resulting from the interaction of mind and body.[51] Psychosomatic symptoms were measured with two indicators: psychosomatic symptom I and psychosomatic symptom II. For the measurement of psychosomatic symptom I, 12 of the 22 items from the Screening Score of Psychiatric Symptoms Indicating Impairment[44] were used, including weakness, palpitations, anorexia, syncope, insomnia, heartburn, sweating, hand tremor, nasal stiffness, and headache. The Self-Rating Anxiety Scales[43] used to measure psychosomatic symptom II consisted of 10 items, including nervousness, fatigue, dizziness, chest tightness, palpitations, fainting, indigestion, sweating, and hand cramps. Cronbach's α of psychosomatic symptom I and II were .63 and .86, respectively.

Depressive Trend. Depressive trend refers to an emotional state characterized by exaggerated feelings of sadness, dejection, worthlessness, hopelessness, psychomotor retardation, sleep disturbance (insomnia or

hypersomnia), fatigue, anorexia, constipation, reduced libido, or suicidal ideation, which are inappropriate and out of proportion with reality.[49] Depressive trend was measured by the Self-Rating Depression Scale.[42] This scale consisted of four factors: emotional disturbance (two items), physiological disturbance (eight items), psychomotor disturbance (two items), and psychological disturbance (eight items). Cronbach's α was .79.

Feeling of Isolation. Feeling of isolation was measured with the 10 items from the MHQKA.[34] Example items included "Nobody understands me," "I do not have anybody that I can trust," "I think that people do not like me without special reason," "Nobody trusts me even when I am correct," and "Sometimes I feel lonely when I am with my family or friends." Cronbach's α was .85.

Academic Achievement Belief. The 34 items selected from the Intellectual Achievement Responsibility Questionnaire[41] measured an adolescent's perception of his or her capabilities with respect to academic achievement. These items included "I usually get good grades in my studies," "I always study hard," and "People always tell me that I am very clever." Cronbach's α was .66.

Alcohol and Drug Abuse. Alcohol consumption was measured by the CAGE questionnaire[45] and the Michigan Alcoholism Screening Test.[46] Drug abuse was assessed by 15 items selected from the MHQKA,[34] 11 of which addressed the frequency of use of marihuana, hallucinogens, stimulants, sedatives and sleeping pills, and the remaining 4 of which measured the extent to which the subject had been exposed to addictive drugs during the preceding 12 months, the subject's motives for drug abuse, health problems related to drug abuse, and tolerance. Respondents were asked to rate substance abuse and relevant problems on 6-point Likert scales or a Yes–No scale.

Sexual Abuse. The experience of sexual abuse by adolescents was measured by two items with a Yes–No scale. These items were "Have you ever been sexually abused by someone older than you?" and "Are you currently being sexually abused?"

Delinquent Behavior. Delinquent behavior is characterized by neglect of duty or violation of the law, as well as by persistent antisocial, illegal, violent, or criminal acts.[52] Delinquent behavior was assessed by 31 items of delinquent behavior based on respondents' involvement during the previous 12 months in the following behaviors: damaging the property of others, beating up another person, group fights, sexual assault, physical fighting with kicking or punching, theft and shoplifting, and more serious offenses, such as physical assault, armed rubbery, vandalism, and burglary. The frequencies of self-reported delinquent behavior were collected on a Likert scale ranging from 0 to 3; 0 = never; 1 = sometimes; 2 = often; 3 = very often. Cronbach's α of this scale was .95. The inter-rater reliability of the self-reports was partially evaluated by comparing the self-reported delinquent behavior in the subsample of delinquent adolescents ($n = 50$) confined in juvenile corrective institutions with prior official records and found that

the two sources matched in 95% of cases. Using factor analysis, delinquent behavior was categorized into three types: antisocial (17 items), aggressive (8 items), and psychopathic delinquent behavior (6 items). Antisocial delinquent behaviors referred to status offenses or minor offenses such as running away, smoking, alcohol consumption, drug abuse, lying, truancy, physical fighting with kicking or punching, theft and shoplifting. Aggressive delinquent behaviors included more serious offense, such as physical assault, armed robbery, vandalism, sexual assault (or forcible rape), burglary and manslaughter. Psychopathic delinquent behaviors involved pathological gambling, and repeated misconduct without perceived guilt.

Statistical Analyses

Statistical methods used for this study were Chi-square, t-test, and path analysis, using SAS software program. First, to examine basic gender differences among the study variables, the Chi-square and t-test were conducted with the independent variables (family dynamics, personality, academic achievement, drug abuse and sexual abuse). Next, to investigate gender differences within the effects of family dynamics, personality, sexual abuse, alcohol and drug abuse on delinquent behavior, path analysis was performed, separately, for male and female adolescents. In the path analysis, the strength of each relationship is shown by the path coefficient, which is obtained by multiple regression analysis. A probability of $< .05$ was considered significant in these analyses.

Results

Gender Differences in Rate of Delinquent Behavior

Participants were asked if they had engaged in any kind of delinquent behavior in the previous 12 months. Statistically significant gender related differences were found in the rate of delinquent behavior among adolescents ($\chi^2 = 272.7$, $df = 1$, $p = .0001$). Specifically, 901 male adolescents (91.2%) reported involvement in delinquent behavior, compared with only 87 female adolescents (8.8%). Since 779 of these 988 delinquent adolescents were already confined in a juvenile corrective institution, 209 delinquent adolescents (194 males, 15 females) were considered to have come from the student population.

Male adolescents had significantly higher scores for all types of delinquent behavior, including antisocial ($t = 17.14$, $p = .0001$), aggressive ($t = 15.51$, $p = .0001$), and psychopathic delinquent behaviors ($t = 15.24$, $p = .0001$), as well as total delinquent behavior, compared to female adolescents.

Gender Differences in Relevant Variables of Delinquent Behavior

Compared to female adolescents, male adolescents were found to have significantly higher levels of dysfunctional family dynamics (poor maternal rearing patterns ($t = 2.50$, $p = .0124$), lower levels of satisfaction toward family ($t = -1.15$, $p = .0000$), poor relationships among family members ($t = 4.93$, $p = .0459$), and higher numbers of working mothers ($t = 2.00$, $p = .0000$)). However, no significant gender difference was found in parental rearing, family stability, and parent–child relationships. Furthermore, male adolescents were more likely to report a greater incidence of antisocial personality tendencies ($t = 4.41$, $p = .0000$) and more sociability ($t = 2.74$, $p = .0177$) than female adolescents, while female adolescents had higher depressive tendencies ($t = -5.96$, $p = .0062$) than male adolescents. However, gender differences were not found in feelings of isolation, psychosomatic symptoms, and academic achievement belief. Moreover, compared with female adolescents, male adolescents had higher frequencies of alcohol and drug abuse and being sexually abused.

Gender Differences in Extent of Influence of the Relevant Variables on Delinquent Behavior

Path analyses (using multiple regression analysis) were performed to estimate the direct and indirect effects of independent variables (i.e., family dynamics, personality, academic achievement belief, sexual abuse, and alcohol and drug abuse) on delinquent behavior among male (see Figure 1) and female (see Figure 2) adolescents, separately. Based on our previous studies,[48] sexual abuse, antisocial personality, feelings of isolation, alcohol and drug abuse, and academic achievement belief were used as intervening variables.

For male adolescents, there were three exogenous variables: age, family stability, and parent–child relationship (see Figure 1). For female adolescents, there were four exogenous variables (age, maternal rearing attitudes, family stability, and parent–child relationships), as well as five intervening variables (sexual abuse, antisocial personality tendency, feeling of isolation, alcohol and drug abuse, and academic achievement belief) (see Figure 2). The direct and indirect effects of each exogenous and intervening variable on the endogenous variable are shown in the path diagrams for male (see Table 1) and female (see Table 2) adolescents. Variables that did not meet the 0.05 significance level were not retained in the

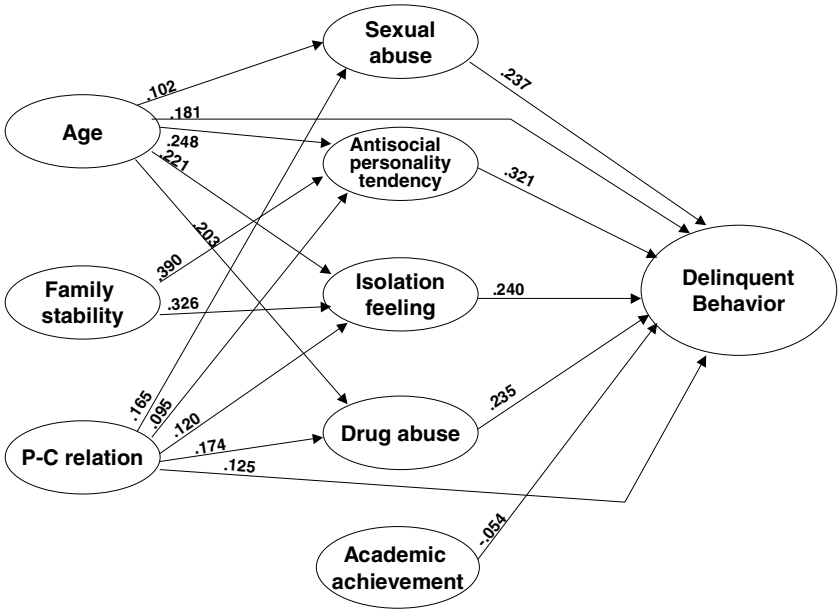

Figure 1. Path Diagram Showing the Relationships and Effects of Family Dynamics, Personality, Academic Achievement, Alcohol & Drug Abuse, and Sexual Abuse on Male Delinquent Behavior.

path diagram. The beta coefficient in the final path model of male delinquent behavior (see Figure 1) indicated the importance of age, antisocial personality tendency, parent–child relationship, feeling of isolation, sexual abuse, and alcohol and drug abuse in the prediction of male delinquent behavior. On the other hand, the beta coefficient in the final path model of female delinquent behavior (see Figure 2) indicated the importance of alcohol and drug abuse, feeling of isolation, antisocial personality tendency, parent–child relationship, family stability and sexual abuse in the prediction of female delinquent behavior.

The results in the Table 1 and Figure 1 highlight a number of important processes affecting male delinquent behavior. Of the six variables, age (.386) and, antisocial personality tendency (.321) had the largest significant total effects, followed by parent–child relationship (.264), feeling of isolation (.240), sexual abuse (.237), and drug abuse (.235) on male delinquent behavior. On the other hand, age (.205) had the largest indirect effect on male delinquent behavior. All

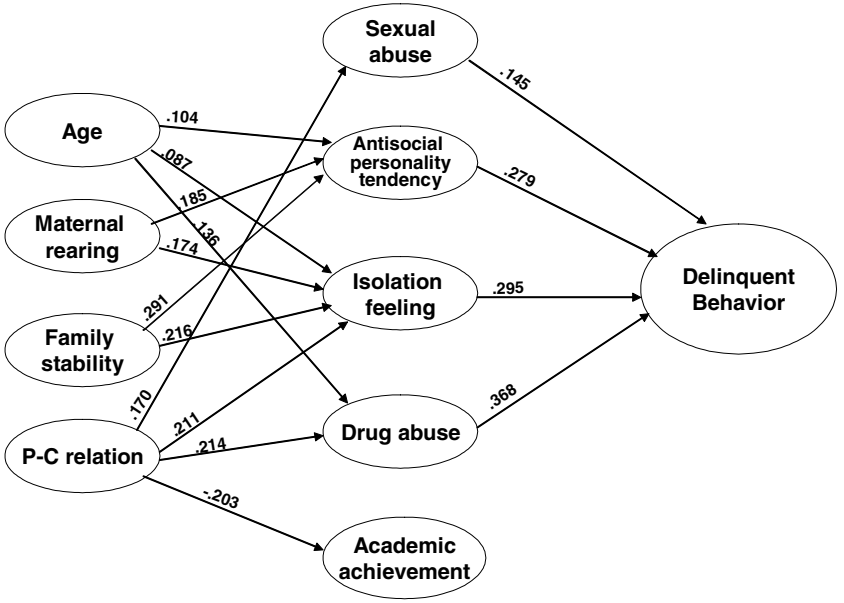

Figure 2. Path Diagram Showing the Relationships and Effects of Family Dynamics, Personality, Academic Achievement, Alcohol & Drug Abuse, and Sexual Abuse on Female Delinquent Behavior.

Table 1
Direct / Indirect Effect of Research Variables on Male Delinquent Behavior

Endogenous Variable	*Exogenous Variables*	*Correlation Coefficient*	*Total Effect*	*Direct Effect*	*Indirect Effect*
Delinquent Behavior	Age	.413	.386	.181(.47)	.205(.53)
	Family stability	.391	.203	– (.00)	.203(1.00)
	Parent–child relationship	.393	.264	.125(.47)	.139(.53)
	Sexual abuse	.459	.237	.237(1.00)	– (.00)
	Antisocial personality	.678	.321	.321(1.00)	– (.00)
	Isolation feeling	.620	.240	.240(1.00)	– (.00)
	Alcohol & drug abuse	.452	.235	.235(1.00)	– (.00)
	Academic achievement	−.086	−.054	−.054(1.00)	– (.00)

( ) × 100 =%

Table 2
Direct / Indirect Effect of Research Variables on Female Delinquent Behavior

Endogenous Variable	*Exogenous Variables*	*Correlation Coefficient*	*Total Effect*	*Direct Effect*	*Indirect Effect*
Delinquent Behavior	Age	.223	.105	– (.00)	.105(1.00)
	Maternal rearing	.370	.103	– (.00)	.103(1.00)
	Family stability	.473	.145	– (.00)	.145(1.00)
	Parent–child relationship	.437	.166	– (.00)	.166(1.00)
	Sexual abuse	.466	.145	.145(1.00)	– (.00)
	Antisocial personality	.600	.279	.279(1.00)	– (.00)
	Isolation feeling	.634	.295	.295(1.00)	– (.00)
	Alcohol & drug abuse	.583	.368	.368(1.00)	– (.00)
	Academic achievement	−.093	–	– (.00)	– (.00)

( ) × 100 =%

effects were in the hypothesized direction, in that the rate of male delinquent behavior increased with increases in each of these variables.

While family stability had only an indirect effect on male delinquent behavior, age and parent–child relationship had both direct and indirect effects. Furthermore, the variable that had the highest direct effect on male delinquent behavior was antisocial personality tendency, whereas the variable that had the highest total effect (i.e. direct and indirect) was age.

For female delinquent behavior, the results summarized in Table 2 and Figure 2 highlight several important processes. For example, drug abuse (.368) had the greatest total effect on female delinquent behavior, followed by feeling of isolation (.295), antisocial personality tendency (.279), parent–child relationships (.166), sexual abuse (.145), and family stability (.145). Again, all effects were in the hypothesized direction, in that the rate of female delinquent behavior increased with increases in each of these variables. For females, drug abuse had the highest direct effect, as well as the highest total effect, on delinquent behavior. In contrast, age, maternal rearing attitude, family stability, and parent–child relationship had only indirect effects on female delinquent behavior, while sexual abuse,

antisocial personality tendency, feeling of isolation, and alcohol and drug abuse had only direct effect.

The same four variables—antisocial personality tendency, parent–child relationship, alcohol and drug abuse, and feeling of isolation—were among the strongest variables in explaining both male and female involvement in delinquent behavior. For male adolescents, age was the strongest contributor, whereas alcohol and drug abuse was the strongest contributor to female delinquent behavior. In particular, for female adolescents, family dynamics, including maternal rearing pattern, family stability and parent–child relationship, showed indirect effects through intervening variables, including alcohol and drug abuse, antisocial personality tendency, feeling of isolation and sexual abuse. Alcohol and drug abuse was more important in explaining delinquent behavior among female than among male adolescents, although male adolescents had higher rates of alcohol and drug abuse than females.

Discussion

This cross-sectional study was undertaken to examine gender differences in the rate, type, and relevant variables of delinquent behavior, as well as to determine whether gender differences exist in the relative influences of family dynamics, personality, academic achievement, sexual abuse, and alcohol and drug abuse on delinquent behavior among Korean adolescents.

This study has several strengths. First, most previous research on delinquency and gang involvement has been limited to single gangs, single sites, or small samples, making comparisons between male and female adolescent delinquency difficult.[12] The present study, however, surveyed 2100 Korean adolescents, recruited from almost all parts of the country. Furthermore, the use of a random sampling method in the present work, as well as the high reliability and validity of the measuring instruments, adds to the reliability of the results. Also, to our knowledge, this is the first study to comprehensively examine gender differences in delinquent behavior among Korean adolescents.

Although the present results indicate that female delinquency is increasing and becoming more serious and more violent, resembling the male pattern, the rate of delinquent behavior is still much lower among Korean female adolescents than among Korean male adolescents. In this study, the male to female ratio in the

rate of delinquent behavior was almost 10:1. This gender difference in the rate of delinquency among Korean adolescents is greater than that reported for Western countries.[3] However, the gender difference found in the present work may have been magnified by Korean female adolescents being more reluctant to admit to delinquency than their Western counterparts. The present results also showed that female adolescents are much less involved in each of the three types of delinquent behavior (antisocial, aggressive, and psychopathic delinquent behavior) than male adolescents, i.e., female adolescents commit fewer and less serious offenses than male adolescents. These findings are consistent with those reported in other countries.[53–55]

Male adolescents showed more dysfunctional family dynamics than female adolescents. Specifically, male delinquents reported more dysfunctional maternal rearing attitudes, lower satisfaction toward family members, more dysfunctional relationships among family members, and a higher percentage of working mothers. However, although differences in the mean score were statistically significant, the magnitude of such differences was very small. In addition, no gender differences were detected in 'paternal rearing' and 'parent–child relationship.' Taken together, these findings suggest that there may not be any gender differences in the relationship between delinquent behavior and family environment, supporting results from our previous research.[48] Other studies have suggested that there are no gender differences in the association between conduct problems and parental attachment,[56,57] parental supervision[56] and parental separation.[57] Generally, family dynamics are relatively unimportant in explaining gender differences in involvement in delinquent behavior, although family dynamics were the strongest predictor of delinquent behavior among Korean adolescents in the previous study.[48] This may means that delinquent adolescents, regardless of gender, find themselves more often in a dysfunctional family environment than do non-delinquent adolescents. Studies into the associations between female delinquent behavior and family dysfunction have often provided contradictory results. While some studies have suggested that the families of female delinquents are significantly more dysfunctional than those of male delinquents,[58] others[59,60] have found no such correlation. In addition, a recent study[57] found no significant interactions between gender and family attachment or gender and family structure in predicting minor or serious delinquency in a sample of middle-school students even though gender was related to delinquent behavior.

In the present study, male delinquent adolescents showed greater tendencies to antisocial personality, higher sociability, higher rates of being sexually abused or higher levels of alcohol and drug abuse than did female delinquent adolescents, whereas female delinquent adolescents had a greater tendency to be depressed than male delinquent adolescents. These results suggest that antisocial personality and aggression, characteristics more typical of males than females, are factors contributing to delinquency and criminality. In contrast, emotionality, including depression, which is more characteristic of females than males, is more often a factor in female delinquent behavior. In various studies, female adolescents have been found to experience higher levels of interpersonal stress than male adolescents.[61] When confronted with interpersonal stress in family and peer contexts, female adolescents tend to show a higher level of depression and anxiety than male adolescents.[61,62] Interestingly, although these variables were closely related to juvenile delinquency,[2,48] no gender differences were found in the relationship between delinquent behavior and feelings of isolation, psychosomatic symptoms, or academic achievement belief, suggesting that these variables are related to delinquent behavior in adolescents regardless of gender.

In the path analysis, the most powerful contributing variables affecting male delinquent behavior were age, antisocial personality tendency, parent–child relationship, feeling of isolation and history of sexual abuse, in that order. This may mean that male adolescents have a higher rate of delinquent behavior as they grow older and as they show greater tendencies towards an antisocial personality. For female adolescents, the variables contributing to delinquent behavior were alcohol and drug abuse, feeling of isolation, antisocial personality tendency, and parent–child relationship in that order. Interestingly, although alcohol and drug abuse was more important in explaining delinquent behavior among female than among male adolescents, the latter had higher rates of alcohol and drug abuse. This may mean that female initiation into delinquent and violent behavior was related to the use of alcohol or marijuana with a deviant peer group.

Males and females thus appear to employ different mechanisms for coping with situations of strain, depression, and anger. Female adolescents are more likely to engage in internalizing problems, such as depression, and alcohol and drug abuse, whereas male adolescents are more likely to engage in externalizing behaviors, such as delinquency and criminal acts. Similarly, a stronger association

between substance abuse and negative affect has been found among female than male adolescents,[63] and the path diagrams reconfirm that family dynamics and antisocial personality tendency are strong contributors to juvenile delinquent behavior regardless of gender.

Several limitations of this study should be noted. First, causal relationship based on gender differences cannot be inferred from analyses conducted on cross-sectional data. It is possible that the effect on delinquent behavior varies for adolescents of different ages, suggesting that further research is necessary to separately examine these relationships for middle and high school students. Additionally, to identify factors contributing to female delinquent behavior, comparative studies between adolescents of the same sex—female delinquents and female non-delinquents—are needed. The present study was limited in that measurement of research variables was based on participants' report, and there was no independent method for testing the validity of their responses. Future studies would probably benefit from using qualitative research methods to understand and identify motives for female delinquent behavior. An additional limitation was the small sample size of female delinquent adolescents (87 individuals). It is important to note, however, that the small number of female delinquent adolescents relative to male delinquent adolescents is reflective of what is found in the population.

Summary

Traditionally, delinquent and violent behavior has been viewed as an exclusively male phenomenon, and attention has thus been focused on male adolescents' delinquent behavior. However, recent studies have revealed that the incidence of female delinquency is escalating.

In response, using a cross-sectional research design, this study investigated gender differences in the rate, type, and relevant variables of juvenile delinquent behavior, and examined gender differences in the effects of family dynamics, personality, academic achievement, sexual abuse, and alcohol and drug abuse on delinquent behavior among South Korean adolescents. Participants were 1908 adolescents, aged 12–18 years, who completed a self-report questionnaire.

The results showed that, although female delinquency is increasing and becoming more violent, the rate of delinquent behavior is much lower among female than among male adolescents and female adolescents are much less involved in all types of delinquent behavior than male adolescents in South Korea. Among male delinquent

adolescents, there were greater tendencies towards antisocial personality, sociability, being sexually abused, and alcohol and drug abuse than among female delinquent adolescents. In contrast, female delinquent adolescents had a greater tendency toward depression than male delinquent adolescents. Age and antisocial personality had the most significant total effects on male delinquent behavior. In contrast, alcohol and drug abuse was the strongest contributing factor in female delinquent behavior, although the level of alcohol and drug abuse was much higher among male adolescents than among female adolescents in South Korea.

The present results have important implications for understanding gender differences in delinquent behavior among Korean adolescents. A key finding was that female and male delinquent adolescents come to delinquency by different pathways.

Further research is needed aimed at developing a theoretical model for explaining female delinquent behavior and a gender-specific intervention program for dealing with female delinquent behavior.

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