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## Machiavellianism and Related Behavioral Problems in Chinese

### Boys with Attention Deficit Hyperactivity Disorder

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**Abstract** The aim of this article is to examine the Machiavellian beliefs in boys with attention deficit hyperactivity disorder (ADHD) and related behavioral problems. A sample of 70 Chinese boys aged 8~12 years with ADHD (17 cases have co morbid oppositional defiant disorder, ADHD+ODD) and normal controls were evaluated with Kiddie-Mach scales and Child Behavior Checklist (CBCL). There were significant differences between patients and controls. Boys with ADHD showed significantly higher Machiavellian beliefs than controls. However, boys with ADHD+ODD did not differ from boys with ADHD alone in Machiavellian beliefs. Withdrawal subscales, social subscales, attention subscales, internalizing behavior subscales and total problems of CBCL were positively correlated with Mach ( $p < 0.05 \sim 0.01$ ); social relations, school performance and total competence were negatively correlated with Mach ( $P < 0.05 \sim 0.01$ ). Conclusively, boys with ADHD have more Machiavellian beliefs. No difference emerges between boys with ADHD+ODD and with ADHD alone in Machiavellian beliefs. There are moderate correlations between Machiavellianism and behavioral problems and social impairment, especially internalizing behavioral problems and interpersonal communication embarrassment. [Life Science Journal. 2009; 6(4):56 - 61] (ISSN: 1097 – 8135)

**Keywords:** Machiavellianism, attention deficit hyperactivity disorder, behavioral problems

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#### 1 Introduction

Attention deficit hyperactivity disorder (ADHD) is a serious and relatively common psychiatric condition affecting 3% to 5% of all school age children and affecting a larger proportion of male than female subjects [1]. Some studies suggest that children with ADHD are more likely to subsequently develop oppositional defiant disorder (ODD) and/or conduct disorder (CD). Children with ODD or CD frequently also have coexisting ADHD. The combination of ADHD and CD (or ODD) is associated with more severe physical aggression and antisocial behavior than is CD alone [2,3].

In recent years, numerous studies have examined aggressive children and possible mechanisms responsible for aggressive and antisocial behavior. Social information processing models [4] have demonstrated that compared with normal controls, aggressive boys pay less attention to neutral cues and **direct** their attention selectively toward hostile cues [5]. This pattern of hyper-vigilance to hostile cues enhances the likelihood that they will interpret stimuli in hostile ways [6]. Similar tendency has been found in children with disruptive behavior disorder (DBD). Stephanie [7] compared the preference for aggressive stimuli between children with DBD and normal **controls**. They found that DBD children had a lower preference for nonaggressive stimuli. Aggressive

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DBD children distinguished themselves in selecting aggressive stimuli earlier. Social information processing models propose that such cognitive operations are affected by latent mental structures.

As part of our latent mental structures, beliefs are of fundamental importance in interpersonal relationships. We quickly form impressions and make judgment or attributions concerning people we meet, and this process can guide our behavior towards them. Some may view people in general as untrustworthy and manipulable in interpersonal situations, whereas others may have a high degree of faith in human nature, feeling people as fundamentally kind and to be treated with honesty and respect. This variation in attitudes has been described as our degree of “Machiavellianism”<sup>[8]</sup>.

In clinical practice, children with ADHD, ODD or CD were frequently found to involve in interpersonal conflicts due to impulsive and/or aggressive behaviors. So it is very important and interesting to clarify whether or not Machiavellian beliefs is component of latent mental structures of ADHD and DBD children that can guide their processing of social cues and impulsive, aggressive behaviors. To our knowledge, Machiavellian beliefs of children with ADHD or DBD have not been reported yet. The current study first compared the Machiavellian beliefs with boys who with ADHD plus ODD, ADHD alone and normal controls, and explored the association between Machiavellianism and behavioral problems. We predicted, first, patients would show higher Machiavellian beliefs than normal controls, boys with or without ODD could be distinguished from each other in Machiavellianism. Second, we predicted that there would be significant correlations between Machiavellian beliefs and behavioral problems.

## 1. Methods

### 1.1 Participants

Subjects were recruited by investigators from The Second Xiang-ya hospital. 70 cases of boys aged 8~12 years with ADHD (who met the DSM-IV criteria)<sup>[9]</sup> and 48 cases of healthy boys aged 8~12 years were included in this study. Diagnoses of the patients based on extensive psychiatric assessment and interviews with

children and their parents. In ADHD group, 17 cases (mean age: 9.72±1.39) had co-morbid oppositional defiant disorder, 53 cases (mean age: 10.09±1.51) were ADHD alone. Volunteers in control group took place in two classes from Yu-hua primary school of Changsha and had no mental disorder or neurologic disorder, with age ranging from 8~12 (mean age: 10.18±0.53). All children and their parents completed the measures carefully according to the order. All the 118 boys and their parents were told that participation was on a purely voluntary basis and they could withdraw at any time.

### 1.2 Measures

1.2.1 The 20-item self-report Kiddie Mach Scale was used to assess attitudes towards human nature and trust in interpersonal relationships. Items include “Most people are good and kind” and “Sometimes you have to hurt other people to get what you want”. Agreement with the statements was indicated on the following scale: agree very much (5), agree a little (4), disagree a little (2), and disagree very much (1). Non-Machiavellian items were scored reversely for consistency with the Machiavellianism construct, so that high scores on these items indicated disagreement and therefore Machiavellianism. The possible range of scores was 20-100. Christie and Geis<sup>[10]</sup> provide evidence of good reliability and validity for their Machiavellianism scales. Xiao-dong Fan provided evidence of good reliability and validity for Chinese version<sup>[11]</sup>.

1.2.2 The Child Behavior Checklist<sup>[12]</sup> obtains reports from parents regarding children’s competencies and behavioral/emotional problems. Parents provide information for competence items covering their child’s activities, social relations, and school performance. The CBCL has 113 items that describe specific behavioral and emotional problems, include withdrawal, somatic complaints, anxious /depressed, social problems, thought problems, attention problems, delinquent behavior, aggressive behavior, internalizing behavior, externalizing behavior and total problems. Parents rate their child for how true each item is now or within the past 6 months using the following scale: 0 = not true (as far as you know); 1 = somewhat or sometimes true; 2 = very true or

often true. There are good reliability and validity for Chinese version<sup>[13]</sup>.

### 1.3 Data analysis

All statistical analysis were performed by using SPSS for windows 11.5, methods contains ANOVA and Pearson correlation analysis.

## 2. Results

### 2.1 Comparison of the Age and Machiavellianism

No differences were found between boys with

ADHD+ODD, with ADHD alone and normal controls in age and standard of education. Whereas, *F* test showed a statistically significant difference between three groups in Machiavellian beliefs ( $F(3.267) = P < 0.05$ ). Meanwhile, test showed that patients were higher in Machiavellianism than normal controls, suggesting that ADHD boys and ADHD+ODD boys may view people in general as untrustworthy and dishonest. However, no differences were found between ADHD boys with or without ODD. (See Table 1)

Table 1. Comparisons of the Age and Machiavellianism

Items	ADHD (n=53)	ADHD+ODD (n=17)	Controls (n=48)	<i>F</i> Value
Mach	72.58 ± 8.15	73.73 ± 10.68	68.41 ± 8.10	3.267 *
Age	10.09 ± 1.51	9.72 ± 1.39	10.18 ± 0.53	2.08

\*  $P < 0.05$  level; \*\*  $P < 0.01$  level (all two-tailed)

Table 2. Association between Machiavellianism and CBCL

Items	Mach
activities	-0.159
social relations	-0.262 *
school performance	-0.299 **
total competence	-0.241 *
withdrawal	0.317 **
somatic complaints	0.196
anxious/depressed	0.138
social problems	0.244 *
thought problems	0.181
attention problems	0.321 **
delinquent behavior	0.180
aggressive behavior	0.173
internalizing behavior	0.287 *
externalizing behavior	0.168
total problems	0.250 *

\*  $P < 0.05$  level; \*\*  $P < 0.01$  level (all two-tailed)

### 2.2 Association between Machiavellianism and behavioral problems

Results showed that Mach was positively associated with attention problems ( $r = 0.321$ ,  $P < 0.01$ ), withdrawal ( $r = 0.317$ ,  $P < 0.01$ ), social problems ( $r = 0.244$ ,

$P < 0.05$ ), internalizing behavior ( $r = 0.287$ ,  $P < 0.01$ ) and total problems ( $r = 0.250$ ,  $P < 0.01$ ) of CBCL. Meanwhile, there were significant negative correlations between Mach and social relations ( $r = -0.262$ ,  $P < 0.05$ ), school performance ( $r = -0.299$ ,  $P < 0.01$ ) and total competence

( $r=-0.241$ ,  $P<0.05$ ) of CBCL. These findings reveal that an increase in dishonesty and distrust to others would associate with a corresponding rise in behavioral problems and a corresponding decrease in social competence. However, no statistically significant correlations were found between Mach and other subscales (activities, somatic complaints, anxious/depressed, thought problems, delinquent behavior, aggressive behavior and externalizing behavior) of CBCL. (See Table 2).

### 3. Discussions

The data presented in this study indicated that there were significant differences in Machiavellian beliefs between patients and controls, our prediction that boys with or without ODD could be distinguished from each other in Machiavellianism was not supported by the data. But we can observe a disparity that boys with ADHD+ODD scored higher than boys with ADHD alone.

Braginsky<sup>[14]</sup> found that high Mach children used manipulative strategies more frequently and more effectively than low Machs and had greater control over the impressions they made on other people. Barnett and Thompson<sup>[15]</sup> found that children who scored highly on an affective-perspective taking task also showed lack of empathy and was claimed to be especially Machiavellian in their interactions with others. Graham<sup>[16]</sup> gave a summary of the high Machiavellian personality: lack of emotional involvement in interpersonal relationships, being cool and distant, treating people as objects to be manipulated, lack of concern for traditional morality, deceit is considered to be utilitarian rather than reprehensible, low ideological commitment, focus on maintaining oneself in power rather than on inflexible ideals. In accordance with Barkley<sup>[24]</sup>, we think that boys with ADHD may lack of concern for regulation, and lack of empathy in other people.

Children with ADHD and ODD usually get themselves into troubles because of symptoms. Their interpersonal relations are full of rejection, denial, conflict and negative regards<sup>[25]</sup>. Therefore they are more likely than controls to respond to disadvantage by

associating with delinquent peers and adopting a maladjusted attitudes and lifestyle. We speculate that Machiavellian beliefs may be one of variables that can partly explain the cause of co-morbid behavioral problems of boys with ADHD or ADHD+ODD. Following this reasoning, corresponding cognitive therapy and social skill training should be employed.

Our results indicated that it is social intercourse problems and internalizing behavior (such as withdrawal) of boys, not externalizing behavior (such as delinquent behavior and stimulation, as is similar to psychopaths aggressive behavior) is the main manifestation of Machiavellian beliefs. Perhaps, Machiavellianism may only be an interpersonal irritant<sup>[17]</sup> due to low agreeableness and not inevitably lead to delinquent behavior and aggressive behavior. In other words, nonsocial behaviors, rather than antisocial behaviors, is of close relationship to Machiavellianism. Our findings confirmed the viewpoint of Wilson, Paulhus and Williams, Williams and Paulhus<sup>[18-20]</sup>, but were inconsistent with McHoskey, who found that Mach scores were positively associated with the Personality Diagnostic Questionnaire-4+ ( PDQ-4+ ) total score and most of the specific PDQ-4+ personality disorder measures, including the antisocial, antisocial behavior, impulsivity, borderline, and passive-aggressive scales<sup>[21]</sup>.

In addition, McHoskey<sup>[22]</sup> also found that Psychopathy and Machiavellianism were strongly correlated with each other. Smith<sup>[23]</sup> pointed out in his review that high Mach scores predicted a high need for

To summarize, we think that Machiavellian beliefs may be part of our latent mental structure which can result in behavioral problems and social impairment, especially internalizing behavioral problems and interpersonal communication embarrassment.

The results that we demonstrated may not be the final words on this issue. Further research should include longitudinal study to understand how and when such attitudes and behaviors develop for ADHD children, also cross-sectional comparison between ADHD children and children with other disruptive behavior disorder.

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