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Authoritarian Parenting Style in Asian Societies: A Cluster-Analytic Investigation

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## Abstract

While the beneficial effects of authoritative parenting style have consistently been demonstrated for Caucasian samples, these effects have not always been found for Asians. It appears that adolescents who perceived their parents' style of parenting as authoritarian are not one homogeneous group. Cluster analyses performed for adolescents' perceived mothers' and fathers' authoritarian parenting style using adolescents' self-report scores on personal adjustment and social variables as the clustering variables found similar two-cluster solutions (maladjusted and well-adjusted). External validation evidence revealed that adolescents in the maladjusted cluster had poorer attitudes towards school and teachers compared to adolescents in the well-adjusted cluster for both samples. These findings suggest that authoritarian parenting style could possibly have a different cultural meaning for Asians.

*Keywords:* authoritarian parenting style, adjustment, cluster analysis, Asian

## Authoritarian Parenting Style in Asian Societies: A Cluster-Analytic Investigation

### Introduction

Baumrind's (1971) seminal work on the classification of parenting styles has been prominent in influencing research on parenting and its effects on children and adolescents. Her early work identified three parenting styles: a) authoritarian – parents who are often strict and harsh, and focus on gaining a child's obedience to parental demands rather than responding to the demands of the child; b) permissive – parents who place few restrictions, rules or limits on their children's behavior; and c) authoritative – parents who are flexible and responsive to the child's needs but still enforce reasonable standards of conduct. Baumrind's (1971) early work suggested that authoritative parenting has beneficial effects for European American families in promoting adolescents' psychological health and academic achievement. Subsequently, many other research studies from the West have also found differentially beneficial effects of the authoritative style compared to the authoritarian or permissive styles on a host of child and adolescent outcomes such as psychological competence, adaptive functioning, self-esteem, self-reliance, and academic competence and adjustment (Carlson, Uppal, & Prosser, 2000; Furnham & Cheng, 2000; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Steinberg, Elmen, & Mounts, 1989; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). In Baumrind's classification, authoritative parenting is documented as being the optimal parenting style with regard to child outcomes. Specifically, authoritative parenting style has repeatedly been found to be correlated with positive self-perceptions while authoritarian parenting style has repeatedly been found to be correlated with negative self-perceptions (Buri, Louiselle, Misukanis, & Mueller, 1988; Klein, Bryant, & Hopkins, 1996; Lamborn et al., 1991; Pawlak & Klein, 1997).

The authoritarian parenting style has acquired a negative connotation in Western literature, primarily because of the negative child and adolescent outcomes frequently associated with it. Parenting styles among Asian parents (in particular, Chinese parents) have been variously described as “authoritarian”, “controlling”, “restrictive” and “hostile” (Lin & Fu, 1990; Steinberg, Dornbusch, & Brown, 1992). Scoring high on authoritarianism may have different meanings and implications for Asians than for Caucasians due to their different cultural systems. For Caucasians, “strictness” may be equated with negative characteristics such as parental hostility, aggression and dominance, but for Asians, “strictness” and some aspects of “control” may be equated with positive characteristics such as parental concern, caring or involvement (Chao, 1994; Lau & Cheung, 1987). Chao (1994) introduced the notion of *chiao shun* or “training” which emphasizes the importance of parental control and monitoring of children’s behaviors, while providing parental involvement, concern and support. Training emphasizes obedience, self-discipline, and the need to do well in school. The notion of training overlaps somewhat with Baumrind’s authoritarian parenting style which may explain why Chinese and other Asians and Asian Americans score high on the authoritarian parenting style. The notion of *guan* is also important to understand in the context of parenting. Tobin, Wu, and Davidson (1989) explained that the term *guan* literally means “to govern”, and further explained that the term has a positive connotation in China because it can mean “to care for”, “to love”, as well as “to govern”. Hence, “control” and “governance” not only have very positive connotations for Asians, they are also regarded as role requirements of responsible parents and teachers. Given the possibility of authoritarian parenting style having different meanings for different cultural groups, it is not surprising then that authoritarian parenting style has been associated with both positive and negative adolescent adjustment outcomes.

Although the beneficial effects of authoritative parenting style have consistently been demonstrated for Caucasian samples with reference to both personal and interpersonal adjustment variables as well as school-related variables, these effects have not always been found for ethnic minorities. In some studies employing non-Caucasian samples, beneficial effects of authoritarian parenting have been documented. For example, Baumrind (1972) found a positive relationship between authoritarian parenting style and independence / self-assertiveness in a sample of African-American children. Similarly, Gonzalez, Greenwood, and Hsu (2001) found mother's authoritarianism to be related to mastery orientation (defined as seeking challenges, persisting in the face of difficulty, competent and self-reliant) among African-American undergraduate students. In another study, McBride-Chang and Chang (1998) found authoritative parenting style to be negatively associated with autonomy in a sample of Hong Kong Chinese adolescents. Results implied that parents who were more authoritative had a tendency to be less encouraging of their adolescents' autonomy, which is not consistent with what has typically been found for Caucasian samples.

Among school-related variables, academic achievement was most commonly investigated. Leung, Lau and Lam (1998) found academic achievement to be positively related to general authoritarianism in a sample of Hong Kong adolescents. Authoritative parenting style was found to be unrelated to the grades of Hong Kong adolescents but positively related to the grades of European American and Australian adolescents. Likewise, in a different study, Park and Bauer (2002) found that the positive relationship between authoritative parenting style and academic achievement is supported only for the majority group (European Americans), but not for Hispanics, African-Americans, or Asian-Americans. Another study by Blair and Qian (1998) found parental control to be positively related to school performance of Chinese adolescents.

Chao (2001) found that first-generation Chinese youth from authoritative families were not better off in school than those Chinese youth from authoritarian families, whereas European American adolescents from authoritative families did perform better in school than those European American youth from authoritarian families. In addition, authoritative parenting had consistently more positive effects on both school grades and school effort for European Americans compared to first-generation Chinese. Taken together, it appears that authoritarian parenting style is not universally associated with negative adolescent outcomes, especially when studying non-Caucasian samples. In fact, positive adolescent outcomes have been associated with authoritarian parenting style in some Asian samples.

While positive effects have been found with authoritarian parenting style in some studies involving Asian and other non-Caucasian samples, research findings are not unequivocal either. Much of the research on parenting styles and its effects on children and adolescents are conducted using Western samples. There is limited empirical research on parenting styles using Asian or non-Caucasian samples. With specific regard to the relationship between personal and interpersonal adjustment variables and authoritarian parenting, Herz and Gullone (1999) found parenting characterized by high levels of overprotection and control (similar to Baumrind's authoritarian parenting) to be negatively related to self-esteem, confidence, and resilience of both Vietnamese-Australian and Anglo-Australian adolescents. In another study, Chen, Dong, and Zhou (1997) found authoritarian parenting to be positively associated with aggression, and negatively associated with sociability-competence and peer acceptance in a sample of 304 second-grade children from Beijing, People's Republic of China.

With respect to school-related variables, Chen et al. (1997) found authoritarian parenting style to be negatively related to school achievement; children with authoritarian parents had

poorer school adjustment compared to children with authoritative parents. Kim (1996) studied Korean immigrants and found that parenting style was unrelated to school performance. In another study, parents of adolescents from the most academically competitive schools in Hong Kong tended to perceive themselves as more authoritative and less authoritarian than those from the least academically competitive schools (McBride-Chang & Chang, 1998). Thus, it appears that adolescents who perceived their parents' style of parenting as authoritarian are not homogeneous. Some studies have indicated positive personal and school-related adjustment outcomes for these adolescents, while other studies have documented negative outcomes.

The purpose of the present study was to use cluster analysis to identify subgroups or clusters of adolescents who perceived their parents to have an authoritarian parenting style based on personal adjustment and social/interpersonal variables. Separate analyses were performed for adolescents' perceived mothers' authoritarian parenting style and for adolescents' perceived fathers' authoritarian parenting style. Based on a review of the existing literature, there appears to be tentative support for the existence of at least two distinct subgroups; first, a cluster of adolescents with perceived mothers' authoritarian parenting style who are maladjusted (hereafter termed *maladjusted*) and second, a cluster of adolescents with perceived mothers' authoritarian parenting style who are well-adjusted (hereafter termed *well-adjusted*). Likewise, we expected adolescents with perceived fathers' authoritarian parenting style to have the similar two distinct clusters (*maladjusted* and *well-adjusted* clusters) emerge when analyzed using cluster analysis.

These proposed subgroups will be of limited utility unless they also predict meaningful differences in school-related adjustment measures. Presuming that the two proposed subgroups will be identified, certain school-related attitudinal correlates would also be expected to occur for each specific subgroup. Based on the preceding review, one would expect that authoritarian

parenting style has a significant impact on school-related outcomes. To date, most previous research studies have limited their investigation of school-related outcomes to academic achievement. The present study extends research in this area by investigating the impact of authoritarian parenting style on school-related adjustment such as adolescents' attitude to school and attitude to teachers. Specifically, adolescents in the *maladjusted* cluster (both for perceived mothers' and fathers' parenting style as authoritarian) were expected to have more negative attitudes towards school and teachers compared to adolescents in the *well-adjusted* cluster.

## Method

### *Participants*

Five hundred and forty-eight adolescents (241 males and 307 females) from Grade 7 participated in the study. Thirteen Grade 7 classes of two middle schools in Singapore were involved. Each adolescent completed a variety of scales (see *Measures* subsection) including two parallel forms (one for mothers' parenting style and one for fathers') for the Parental Authority Questionnaire (PAQ; Buri, 1991). Median splits were performed on the scores of perceived mothers' and fathers' authoritarian parenting styles. The first sample consisted of adolescents scoring above the median on perceived mothers' authoritarian parenting style (total  $N = 289$ , 133 males and 156 females) and this represented adolescents who perceived their mothers to be high on authoritarianism. The second sample consisted of adolescents scoring above the median on perceived fathers' authoritarian parenting style (total  $N = 262$ , 117 males and 145 females) and this represented adolescents who perceived their fathers to be high on authoritarianism. For brevity, these samples will be subsequently referred to as having "authoritarian" parenting styles.

For adolescents who perceived their mothers to have an authoritarian parenting style ( $N = 289$ ), the age range of the participants was from 12 to 15 years with a mean age of 12.56 years

( $SD = 0.55$ ). Self-reported ethnic identification for the sample was as follows: 51.6% of the participants were Chinese, 40.5% were Malay, 3.5% were Indian, and 4.5% endorsed Others (which includes all other ethnic groups not listed). Of the 289 adolescents, 268 (92.7%) reported parents' marital status as married, 10 (3.5%) reported parents' marital status as divorced, 1 (0.3%) reported parents' marital status as separated, 8 (2.8%) reported parents' marital status as widowed, and 2 (0.7%) did not provide information on parents' marital status.

For adolescents who perceived their fathers to have an authoritarian parenting style ( $N = 262$ ), the age range of the participants was from 12 to 14 years with a mean age of 12.56 years ( $SD = 0.53$ ). Self-reported ethnic identification for the sample was as follows: 53.8% of the participants were Chinese, 37% were Malay, 5% were Indian, and 4.2% endorsed Others (which includes all other ethnic groups not listed). Of the 262 adolescents, 245 (93.5%) reported parents' marital status as married, 11 (4.2%) reported parents' marital status as divorced, 3 (1.1%) reported parents' marital status as widowed, and 3 (1.1%) did not provide information on parents' marital status.

### *Consent and Procedures*

In Singapore, permission for conducting research and data collection is typically granted by the school Principal. Approval was obtained for the researchers to conduct the research investigation at both schools prior to data collection. A passive consent procedure was used to obtain adolescents' participation from parents. Parents in the participating schools were informed about the date and nature of the study well in advance of the scheduled questionnaire administration and were requested to contact the school if they did not want their adolescent to participate in the study. None of the adolescents had their participation withheld by their parents.

The purpose of the study was explained to the students and consent to participate in the study was obtained from all students involved. Participation was strictly voluntary and students' responses were kept anonymous. Students were also informed that they could refuse or discontinue participation at any time. All students voluntarily participated in the study. Approximately 1.2% of the students were absent on the day of questionnaire administration and did not participate in the study. Self-report questionnaires were administered to students in an organized classroom setting. All questionnaires were administered in English. No translation was needed as English is the language of instruction for all schools in Singapore.

### *Measures*

*Parental Authority Questionnaire (PAQ)*. The 30-item PAQ (Buri, 1991) was developed to measure Baumrind's (1971) parental authority prototypes and was validated on a sample of college students. For use with young adolescents in this study, the language was modified to reflect a reading level that is appropriate, while retaining the content and meaning of the original PAQ items. The PAQ contains 10 items to measure permissive parenting style, 10 items to measure authoritarian parenting style, and 10 items to measure authoritative parenting style. Responses to each of these items were made on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A high score indicates a high level of that particular parenting style. Each student completed one form for his or her mother and a parallel form for his or her father. The PAQ reliability estimates for the present study were as follows: Permissive-Mother (.77), Authoritarian-Mother (.81), Authoritative-Mother (.82), Permissive-Father (.80), Authoritarian-Father (.81), and Authoritative-Father (.80). These internal consistency estimates obtained from the present sample are comparable to the estimates that Buri (1991) obtained which ranged from .74 to .87 for mothers' and fathers' parenting styles.

*Rosenberg Self-Esteem Scale (RSE)*. The 10-item Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) is one of the most widely used scales for measuring global self-esteem. This measure consists of 10 positive and negative self-appraisal statements (e.g., “I am able to do things as well as most other people.”) rated on a 4-point Likert scale format from 1 (*strongly disagree*) to 4 (*strong agree*). Higher scores indicate higher self-esteem. The cronbach alpha for RSE in this study was .73.

*Behavior Assessment System for Children (BASC)*. The BASC adolescent self-report form (Reynolds & Kamphaus, 1992) was used and only the following five subscales were administered: Self-Reliance (7 items), Interpersonal Relations (16 items), Sense of Inadequacy (13 items), Attitude to Teachers (9 items), and Attitude to School (10 items). The Self-Reliance subscale (e.g., “I am someone you can rely on.”) measures confidence in one’s ability to solve problems, and a belief in one’s personal dependability and decisiveness. A high score on the Self-Reliance subscale represents positive personal adjustment in terms of being willing to take responsibility, to make decisions, and to face life’s challenges. The Interpersonal Relations subscale (e.g., “I am good at making new friends.”) measures the perception of how successful the adolescent is at relating to others, having good social relationships and friendships with peers. A high score on the Interpersonal Relations subscale represent positive adjustment in the domain of interpersonal relationships. The Sense of Inadequacy subscale (e.g., “I am always disappointed with my grades.”) assesses a lack of belief in the ability to achieve at expected levels, a tendency not to persevere, and a perception of being unsuccessful in primarily academic endeavors. A high score on the Sense of Inadequacy subscale indicates that the adolescent feels inadequate to meet expectations set either by himself or herself, or by others. The Attitude to Teachers subscale (e.g., “Teachers mostly look for the bad things that you do.”) assesses feelings

of dislike and resentment of teachers. A high score on the Attitude to Teachers subscale reflects a perception of teachers as being uncaring, unfair or overly demanding. The Attitude to School subscale (e.g., “I hate school.”) assesses the adolescent’s hostility towards school and dissatisfaction with school and school-related matters. A high score on the Attitude to School subscale reflects a pervasive negative attitude towards school. Responses to each of these items on the BASC self-report subscales were made using a True/False format. The reliability estimates for the five subscales in this study were: Self-Reliance (.61), Interpersonal Relations (.83), Sense of Inadequacy (.77), Attitude to Teachers (.61), and Attitude to School (.82).

### Results

Cluster analysis refers to a set of techniques used to uncover homogeneous subgroups or clusters in a dataset such that the resulting groups exhibit high intra-cluster similarity and low inter-cluster similarity (Lattin, Carroll, & Green, 2003). A variety of techniques for cluster analysis are available. In the present study, the hierarchical agglomerative clustering (HAC) technique using Ward’s (1963) minimum variance method and squared Euclidean distance as the similarity measure was used in line with established practices in the social sciences (Borgen & Barnett, 1987; Everitt, 1980). Doing so would also facilitate comparisons of the results obtained in the present study with existing research.

A three-step data-analytic strategy was employed. Firstly, separate cluster analyses were performed for adolescents’ perceived mothers’ and fathers’ authoritarian parenting style using the adolescents’ respective standardized mean scores of the personal adjustment and social/interpersonal variables as the clustering variables in each run of the analysis. These were the self-esteem scores from the RSE scale, and the Self-Reliance, Interpersonal Relations and Sense of Inadequacy subscales from the BASC. The derived clusters were then externally

validated (Aldenderfer & Blashfield, 1984) by comparing the subgroups' scores on the Attitude to Teachers and Attitude to School subscales from the BASC to determine if the clusters were meaningfully differentiated in terms of school-related adjustment measures. Finally, an iterative partitioning clustering technique, K-means, was performed to verify cluster membership of the adolescents. The rationale of this final step being that, a higher level of agreement of cluster membership by the two different clustering techniques would lend support to the validity of the derived cluster solutions.

### *Hierarchical Clustering Results*

In order to determine the optimal number of clusters, a heuristic based on an analysis of the fusion coefficients (Aldenderfer & Blashfield, 1984) of the HAC agglomeration schedule was used. Specifically, "large jumps" in fusion coefficients indicate that two disparate clusters are merged, thus suggesting good clustering solutions for the number of clusters immediately preceding the merge. In the present analysis, the fusion coefficients strongly supported a two-cluster solution. Thus as hypothesized, a two-cluster solution for adolescents' perceived mothers' authoritarian parenting style was derived using this method. Likewise, a two-cluster solution for perceived fathers' parenting style was found. Table 1 shows the cluster profiles for perceived mothers' and fathers' authoritarian parenting styles while Figures 1 and 2 provide a graphical representation of the profiles using standardized mean scores of the clustering variables. The profiles are similar across parents and lend support to the hypothesis that clusters can be characterized as *maladjusted* and *well-adjusted*. These clusters are summarized as follows:

1. *Maladjusted*: This cluster consists of adolescents ( $N = 117$  for mothers' authoritarian parenting style;  $N = 167$  for fathers' authoritarian parenting style) characterized by low self-esteem, poor self-reliance, poor interpersonal relations and a high sense of inadequacy.

2. *Well-adjusted*: This cluster is composed of adolescents ( $N = 171$  for mother and  $N = 94$  for father) that have high self-esteem, high self-reliance, good interpersonal relations and a low sense of inadequacy.

#### *External Validation*

External validation of the two sets (mother and father) of two-cluster solutions began by first determining if there were significant differences in terms of demographic variables across the clusters (*maladjusted* and *well-adjusted*). In the present study, Cohen's  $d$  and the phi coefficient ( $\phi$ ) were used to report parametric and nonparametric effect size estimates (Kline, 2004). The sign of  $d$  is arbitrary, and as recommended, a positive sign will be used when the result is consistent with the a priori hypothesis and a negative sign will be used when the result is in the opposite direction of that specified by the hypothesis (Kline, 2004). T-tests performed on adolescents' age yielded no significant differences across clusters for both mother,  $t(285) = -1.03, p = .30, d = 0.12$ ; and father,  $t(258) = -.87, p = .38, d = 0.11$ . Chi-square tests also yielded statistically nonsignificant findings on gender [ $\chi^2(1, N = 288) = .06, p = .80, \phi = .01$  for mother;  $\chi^2(1, N = 261) = .31, p = .58, \phi = .03$  for father] and marital status of parents [ $\chi^2(1, N = 286) = .39, p = .53, \phi = .03$  for mother;  $\chi^2(1, N = 258) = .40, p = .53, \phi = .04$  for father]. The four categories of marital status of parents were collapsed into two categories for the analyses – two-parent families (married) and single-parent families (divorced, separated and widowed) because of small sample sizes in the latter. Adolescents' ethnicity for perceived mothers' authoritarian parenting style was statistically nonsignificant across clusters,  $\chi^2(3, N = 288) = 1.88, p = .60, \phi = .08$ , but statistically significant across clusters for father,  $\chi^2(3, N = 261) = 10.60, p = .01, \phi = .20$ . The well-adjusted cluster had a more than expected number of Indians compared to the

maladjusted cluster. Further, the well-adjusted cluster had fewer adolescents belonging to the Other category than expected.

Next, the cluster solutions were analyzed to determine if, as hypothesized, authoritarian parenting styles impacted the adolescents' ability to adjust at school. T-tests were thus conducted on the two-cluster solution generated from the adolescents' perceived mothers' authoritarian parenting style on their attitude to school and attitude to teachers. As predicted, adolescents in the maladjusted cluster ( $M = 3.50$ ,  $SD = 2.71$ ) scored significantly higher than adolescents in the well-adjusted cluster ( $M = 1.55$ ,  $SD = 2.06$ ) on attitude to school,  $t(286) = 6.95$ ,  $p = .001$ ,  $d = .82$ . Similarly, adolescents in the maladjusted cluster ( $M = 4.45$ ,  $SD = 2.11$ ) scored significantly higher than adolescents in the well-adjusted cluster ( $M = 3.23$ ,  $SD = 1.91$ ) on attitude to teachers,  $t(286) = 5.11$ ,  $p = .001$ ,  $d = .60$ . Higher scores on attitude to school and attitude to teachers reflect a poorer orientation towards school-related adjustment. In line with our hypothesis, t-tests on clusters generated by perceived fathers' authoritarian parenting styles revealed that adolescents in the maladjusted cluster ( $M = 2.97$ ,  $SD = 2.71$ ) scored significantly higher than adolescents in the well-adjusted cluster ( $M = 1.39$ ,  $SD = 2.09$ ) on attitude to school,  $t(259) = 4.92$ ,  $p = .001$ ,  $d = .61$ . Likewise, adolescents in the maladjusted cluster ( $M = 4.08$ ,  $SD = 2.05$ ) scored significantly higher than adolescents in the well-adjusted cluster ( $M = 3.15$ ,  $SD = 1.77$ ) on attitude to teachers,  $t(259) = 3.69$ ,  $p = .001$ ,  $d = .46$ . As can be seen in Table 2, adolescents in the maladjusted cluster exhibited a poorer attitude towards school and towards their teachers while those in the well-adjusted cluster had more positive attitudes towards school and their teachers. These findings apply to both perceived mothers' and fathers' authoritarian parenting styles. Effect sizes obtained for perceived mothers' and fathers' authoritarian parenting styles ranged from .46 to .82, suggesting moderate to large effects of the impact of both parents' authoritarian

parenting styles on adolescents' attitude to school and attitude to teachers, with relatively stronger effects associated with perceived mothers' authoritarian parenting style.

Finally, replication of the cluster solutions generated by the HAC technique was performed using the K-means procedure, an iterative partitioning clustering technique. An important difference between these two techniques concerns how a given data object is assigned to a cluster. In HAC, data objects begin as individual clusters which are then merged in subsequent steps of the process until only one cluster remains. Once a data object is assigned to a cluster, it cannot be reassigned even though it may be more strongly associated with a different cluster in later steps of the clustering process. In contrast, iterative partitioning methods, given an a priori K-cluster solution, repeatedly reassign data objects among these K clusters until the clusters satisfy some convergence criterion (for example, a maximum number of iterations or a minimum error sum of squares).

In the context of the present study, the final two-cluster solutions using the HAC technique for both mother and father were used as starting points for the K-means procedure ( $K = 2$ ). The resulting two-cluster solutions were then compared with the original HAC derived two-cluster solutions to determine the degree of agreement among members of each cluster using the kappa coefficient. A higher level of agreement would lend support to the initial hypothesis and provide further support for the generated two-cluster solution. Analysis of the clusters generated by perceived mothers' authoritarian parenting style revealed that the two clustering techniques had a very high level of agreement (Cohen, 1960; Kraemer, 1982) thus indicating a strong tendency to assign adolescents to similar clusters ( $\kappa = .86, p = .001$ ) with assignment disagreements occurring only in 19 of 288 (6.6%) adolescents. Here, the HAC technique assigned five adolescents to the well-adjusted cluster while the K-means procedure assigned

them to the maladjusted cluster. In contrast, 14 were assigned to the maladjusted cluster by the HAC technique but they were assigned to the well-adjusted cluster by the K-means procedure. Findings for fathers showed an acceptable moderate level of agreement (Cohen, 1960; Kraemer, 1982) between the two techniques ( $\kappa = .61, p = .001$ ). Here, an inspection of the cluster membership assignments by the two techniques revealed that the HAC technique determined that 53 of 261 (20.3%) adolescents were maladjusted while the K-means method determined that they were well-adjusted. Analysis of alternative cluster solutions using both clustering techniques revealed negative kappa coefficients hence providing further support for a two-cluster solution for fathers' authoritarian parenting style.

### Discussion

It was hypothesized that two distinct subgroups of adolescents who perceived their parents to have an authoritarian parenting style (*maladjusted* and *well-adjusted*) would be identified based on personal adjustment and social/interpersonal variables. Employing the HAC technique using Ward's method, the predicted two-cluster typology was found for both perceived mothers' authoritarian parenting style and perceived fathers' authoritarian parenting style. As expected, a *maladjusted* cluster was found in which adolescents were characterized by low self-esteem, poor self-reliance, poor interpersonal relations and a heightened sense of inadequacy. There is some previous research supporting the existence of this specific subgroup of adolescents (e.g., Chen et al., 1997; Herz & Gullone, 1999). Results also supported the existence of another cluster – a *well-adjusted* cluster in which adolescents were characterized by high self-esteem, high self-reliance, good interpersonal relations and a low sense of inadequacy. The existence of this second subgroup was also consistent with previous research (e.g., Gonzalez et al., 2001; McBride-Chang & Chang, 1998). The obtained two-cluster solution was replicated using the K-

means procedure, an alternative clustering technique. Analysis of the clusters generated from both parents' perceived authoritarian parenting styles revealed that both clustering techniques had a moderate to high level of agreement, providing further support for the two-cluster solution.

While conceptually interesting, these findings would be of little practical value unless they were also indicative of other differences between these two subtypes of adolescents who perceived their parents to have an authoritarian parenting style. It was predicted that adolescents in the *well-adjusted* cluster would have more positive attitudes towards school and teachers compared to adolescents in the *maladjusted* cluster. A similar pattern of results was expected for adolescents who perceived their mothers' parenting style as authoritarian as well as adolescents who perceived their fathers' parenting style as authoritarian. As hypothesized, adolescents from the *well-adjusted* cluster fared better in terms of school adjustment compared to adolescents from the *maladjusted* cluster. Specifically, adolescents from the *well-adjusted* cluster had more positive attitudes towards school, teachers and the educational process compared to adolescents from the *maladjusted* cluster. Results were encouraging because effect sizes obtained were in the range of .46 to .82 suggesting that the impact of parents' authoritarian parenting styles on adolescents' school-related adjustment was substantial and certainly non-trivial.

The results provided some support that adolescents who perceived their parents' style of parenting as authoritarian are not a homogeneous group. Consistent with the literature, an authoritarian parenting style is not universally associated with negative personal, social and school-related adolescent outcomes, especially with Asian samples (Chao, 1994, 2001; Gonzalez et al., 2001; McBride-Chang & Chang, 1998). Even with respect to research using Asian samples, the debate continues: some studies have found beneficial effects (e.g., Leung et al., 1998) while others have found harmful effects (e.g., Chen et al., 1997) associated with

authoritarian parenting styles. There is limited published empirical research investigating the relationship between authoritarian parenting styles and adolescent adjustment outcomes using Asian or non-Caucasian samples.

Our findings extend current research in two ways. First, we used cluster analysis with an Asian sample to demonstrate that adolescents who perceived their parents as having an authoritarian parenting style were not a homogeneous group. Results from the present study provided a two-cluster typology which serves as a framework to integrate the conflicting findings often associated with authoritarian parenting styles in an Asian context. Second, the present investigation examined the impact of authoritarian parenting styles on other important under-explored school adjustment variables such as attitude to school and attitude to teachers. Previous research studies have limited their investigation of school-related effects to primarily academic achievement. Research has shown that in addition to academic achievement, adolescents' comfort level with teachers and the educational process, and general adaptation at school, all affect an individual's degree of school maladjustment or success (Reynolds & Kamphaus, 1992). For example, a conflictual teacher-student relationship lacking in warmth and acceptance may serve to increase a child's risk of school maladjustment (Pianta, Steinberg, & Rollins, 1995). Hence, it is important to investigate school-related adjustment such as adolescents' attitude to school and attitude to teachers.

These findings have a couple of implications for clinical research and practice, especially family therapy. First, these findings suggest that when working with Asian families, it might be helpful for therapists to be mindful that authoritarian parenting style is not universally associated with negative adolescent outcomes (e.g., Ang, in press; Leong et al., 1998). Second, these findings remind researchers and practitioners about the continued importance of multicultural

competencies and the use of culturally sensitive intervention strategies so as to improve service delivery for all clients and families (Arredondo & Arciniega, 2001; Sue, Arredondo, & McDavis, 1992).

A couple of limitations of the present research should be addressed. One primary area of concern is that the ratings of both the clustering variables and the variables used for external validation were both completed by the adolescents themselves. Adolescent self-report was used solely and objective validation of these measures through other data sources (e.g., parent or peer report on adolescents' interpersonal relations) was not obtained. Another limitation of the current investigation is that the use of the two school-adjustment related variables could be expanded to include other relevant variables such as school and classroom climate, adolescent anxiety and depression, and adolescent conduct problems.

The results of the current investigation, together with previous research using Asian samples, have provided further clarification on the impact of perceived authoritarian parenting style on adolescent outcomes among Asians. Authoritarian parenting style could possibly have a different cultural meaning for individuals who are not of European descent, hence it is not associated with solely negative adolescent outcomes. In fact, both positive and negative adolescent outcomes have been found, and this study using cluster analysis, confirmed a two-cluster typology which predicted meaningful differences in Singapore adolescents' school-related adjustment. Further research on cluster analysis and authoritarian parenting style should investigate if this two-cluster typology can be replicated and extended beyond an Asian context.

## References

- Aldenderfer, M. S., & Blashfield, R. K. (1984). *Cluster analysis*. Beverly Hills, CA: Sage.
- Ang, R. P. (in press). Effects of parenting style on personal and social variables for Asian adolescents. *American Journal of Orthopsychiatry*.
- Arredondo, P., & Arciniega, G. M. (2001). Strategies and techniques for counselor training based on the multicultural training competencies. *Journal of Multicultural Counseling and Development, 29*, 263-273.
- Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monographs, 4*, 1-103.
- Baumrind, D. (1972). An exploratory study of socialization effects on black children: Some black-white comparisons. *Child Development, 43*, 261-267.
- Blair, S. L., & Qian, Z. (1998). Family and Asian students' educational performance. *Journal of Family Issues, 19*, 255-274.
- Borgen, F. H., & Barnett, D. C. (1987). Applying cluster analysis in counseling psychology research. *Journal of Counseling Psychology, 34*, 456-468.
- Buri, J. R. (1991). Parental Authority Questionnaire. *Journal of Personality Assessment, 57*, 110-119.
- Buri, J. R., Louiselle, P. A., Misukanis, T. M., & Mueller, R. A. (1988). Effects of parental authoritarianism and authoritativeness on self-esteem. *Personality and Social Psychology Bulletin, 14*, 271-282.
- Carlson, C., Uppal, S., & Prosser, E. C. (2000). Ethnic differences in processes contributing to the self-esteem of early adolescent girls. *Journal of Early Adolescence, 20*, 44-68.

- Chao, R. K. (1994). Beyond parental control and authoritarian parenting style: Understanding Chinese parenting through the cultural notion of training. *Child Development, 65*, 1111-1120.
- Chao, R. K. (2001). Extending research on the consequences of parenting style for Chinese Americans and European Americans. *Child Development, 72*, 1832-1843.
- Chen, X., Dong, Q., & Zhou, H. (1997). Authoritative and authoritarian parenting practices and social and school performance in Chinese children. *International Journal of Behavioral Development, 21*, 855-873.
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20*, 37-46.
- Everitt, B. (1980). *Cluster analysis* (2nd ed.). New York, NY: Halsted.
- Furnham, A., & Cheng, H. (2000). Perceived parental behavior, self-esteem, and happiness. *Social Psychiatry and Psychiatric Epidemiology, 35*, 463-470.
- Gonzalez, A., Greenwood, G., & Hsu, J. W. (2001). Undergraduate students' goal orientations and their relationship to perceived parenting styles. *College Student Journal, 35*, 182-193.
- Herz, L., & Gullone, E. (1999). The relationship between self-esteem and parenting style: A cross-cultural comparison of Australian and Vietnamese Australian adolescents. *Journal of Cross-Cultural Psychology, 30*, 742-761.
- Kim, S. (1996). The effects of parenting style, cultural conflict, and peer relations on academic achievement and psychosocial adjustment among Korean immigrant adolescents. *Dissertation Abstracts International, 57*, (2-A), 578.

- Klein, H. A., Bryant, K. O., & Hopkins, H. R. (1996). Recalled parental authority style and self-perception in college men and women. *The Journal of Genetic Psychology, 157*, 5-16.
- Kline, R.B. (2004). *Beyond significance testing: Reforming data analysis methods in behavioral research*. Washington, DC: American Psychological Association.
- Kraemer, H. C. (1982). Kappa coefficient. In S. Kotz & N. L. Johnson (Eds.), *Encyclopedia of statistical sciences*. New York, NY: John Wiley & Sons.
- Lamborn, S. D., Mounts, N. S., Steinberg, L., & Dornbusch, S. M. (1991). Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development, 62*, 1049-1065.
- Lattin, J., Carroll, J. D., & Green, P. E. (2003). *Analyzing multivariate data*. Pacific Grove, CA: Brooks/Cole – Thomson Learning.
- Lau, S., & Cheung, P. C. (1987). Relations between Chinese adolescents' perception of parental control and organization and their perception of parental warmth. *Developmental Psychology, 23*, 726-729.
- Leung, K., Lau, S., & Lam, W. L. (1998). Parenting styles and achievement: A cross-cultural study. *Merrill-Palmer Quarterly, 44*, 157-172.
- Lin, C. C., & Fu, V. R. (1990). A comparison of child-rearing practices among Chinese, immigrant Chinese, and Caucasian-American parents. *Child Development, 61*, 429-433.
- McBride-Chang, C., & Chang, L. (1998). Adolescent-parent relations in Hong Kong: Parenting styles, emotional autonomy, and school achievement. *The Journal of Genetic Psychology, 159*, 421-436.
- Park, H.-S., & Bauer, S. (2002). Parenting practices, ethnicity, socioeconomic status and academic achievement in adolescents. *School Psychology International, 23*, 386-397.

- Pawlak, J. L., & Klein, H. A. (1997). Parental conflict and self-esteem: The rest of the story. *The Journal of Genetic Psychology, 158*, 303-314.
- Pianta, R. C., Steinberg, M. S., & Rollins, K. B. (1995). The first two years of school: Teacher-child relationships and deflections in children's classroom adjustment. *Development and Psychopathology, 7*, 295-312.
- Reynolds, C. R., & Kamphaus, R.W. (1992). *BASC: Behavior Assessment System for Children Manual*. Circle Pines, MN: American Guidance Services, Inc.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Steinberg, L., Dornbusch, S., & Brown, B. B. (1992). Ethnic differences in adolescent achievement: An ecological perspective. *American Psychologist, 47*, 723-729.
- Steinberg, L., Elmen, J., & Mounts, N. (1989). Authoritative parenting, psychosocial maturity, and academic success among adolescents. *Child Development, 60*, 1424-1436.
- Steinberg, L., Lamborn, S. D., Darling, N., Mounts, N. S., & Dornbusch, S. M. (1994). Over-time changes in adjustment and competence among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development, 65*, 754-770.
- Sue, D. W., Arredondo, P., & McDavis, R. J. (1992). Multicultural counseling competencies and standards: A call to the profession. *Journal of Counseling & Development, 70*, 477-483.
- Tobin, J. J., Wu, D. Y. H., & Davidson, D. H. (1989). *Preschool in three cultures*. New Haven, CT: Yale University Press.
- Ward, J. H. (1963). Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association, 58*, 236-244.

Table 1

*Descriptive Statistics for Clustering Variables*

Variable	Perceived Mothers' Authoritarian Parenting Style		Perceived Fathers' Authoritarian Parenting Style	
	Maladjusted	Well-adjusted	Maladjusted	Well-adjusted
	( <i>N</i> = 117) Mean ( <i>SD</i> )	( <i>N</i> = 171) Mean ( <i>SD</i> )	( <i>N</i> = 167) Mean ( <i>SD</i> )	( <i>N</i> = 94) Mean ( <i>SD</i> )
Self-Esteem	22.53 (3.02)	27.39 (3.10)	24.11 (3.81)	27.81 (3.63)
Self-Reliance	3.85 (1.49)	5.75 (1.25)	4.29 (1.56)	6.29 (0.86)
Sense of Inadequacy	7.42 (2.25)	3.65 (2.32)	6.13 (2.86)	3.49 (2.60)
Interpersonal Relations	9.09 (3.46)	12.98 (2.83)	9.89 (3.40)	14.51 (1.41)

Table 2

*Summary of Cluster Differences on External Variables*

Variable	Perceived Mothers' Authoritarian Parenting Style		Perceived Fathers' Authoritarian Parenting Style	
	Maladjusted	Well-adjusted	Maladjusted	Well-adjusted
	(N = 117) Mean (SD)	(N = 171) Mean (SD)	(N = 167) Mean (SD)	(N = 94) Mean (SD)
Attitude to School	3.50 (2.71)	1.55 (2.06)	2.97 (2.71)	1.38 (2.09)
Attitude to Teachers	4.45 (2.11)	3.23 (1.91)	4.08 (2.05)	3.15 (1.77)

*Note.* Higher mean scores reflect poorer attitudes toward school and teachers respectively.

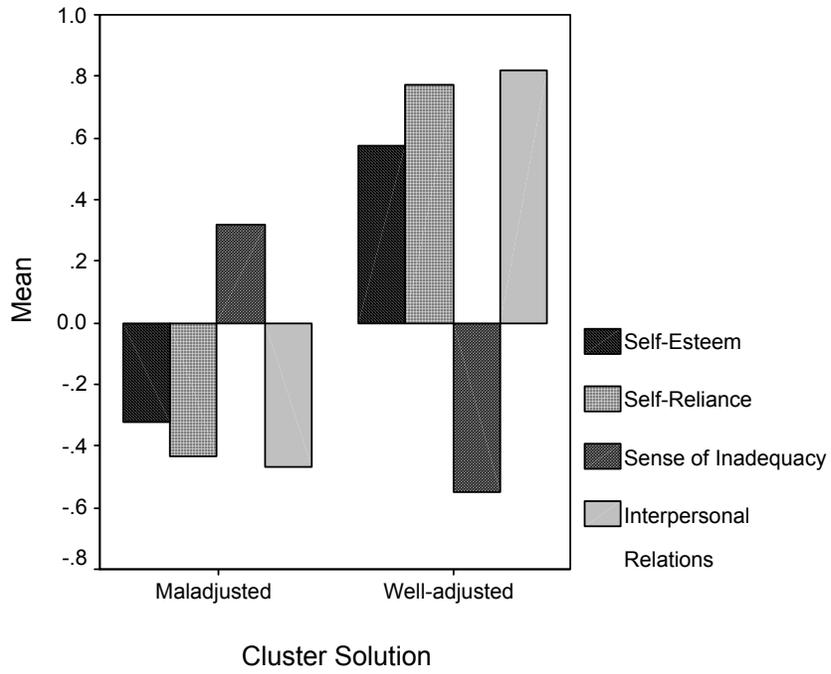


Figure 1. Cluster solution for perceived mothers' authoritarian parenting style.

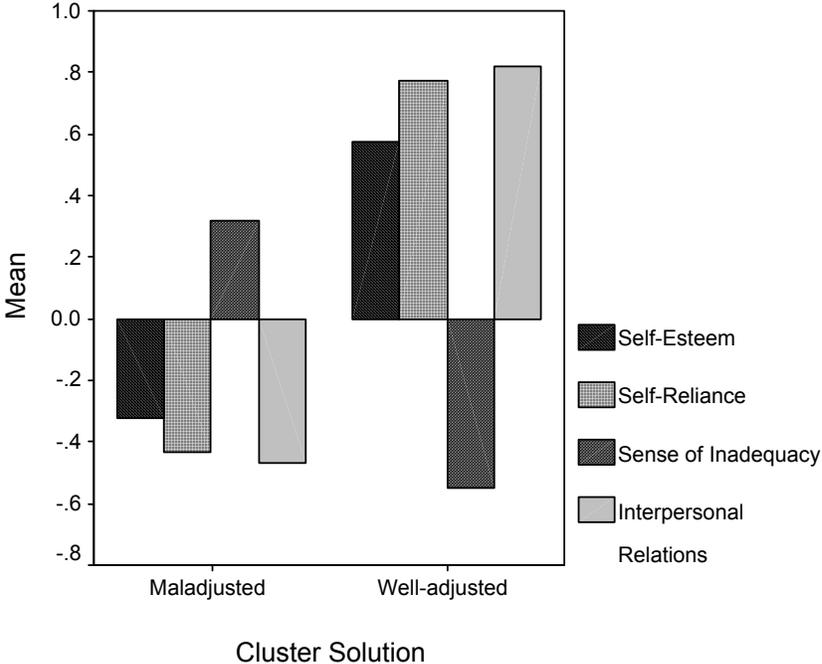


Figure 2. Cluster solution for perceived fathers' authoritarian parenting style.