

## HOW DO THE GENETIC AND ENVIRONMENTAL FACTOR INFLUENCE THE MENTAL HEALTH OF CHONGQING TWINS CHILDREN

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**Objectives:** To estimate the heritability of mental health of children by using a twin design method of quantitative genetic analysis. To analysis the influences of family environment on children mental health.

**Methods:** Using cross-sectional design twins aged 6-16years were recruited. Using SDQ(Strengths and Difficulties Questionnaire)which was examined by parents ( $\geq 11$ )to evaluate the children mental health. The general questionnaire、FAD-GFS (General Functioning Scale of the MacMaster Family Activity Device)、SLE (stressful life events)、FSQ (Family Stresses Questionnaire)、FLQ (Family Life Questionnaire)、EFQ (Everyday Feelings Questionnaire) were used to collect information about family environment from parents. Zygosity was determined by the DNA picked up from cheek mucosa of twins children. Holzinger analysis was employed to estimate the heritability of mental health.

**Results:** 122 pairs of twins (103 pairs DNA were picked up successfully, including 54 MZ and 49 DZ twin pairs.Heritability of mental health: emot (emotion): 0.86, hyper (hyperactivity): 0.75 ,total: 0.61, cond (conduct): 0.4, proso (prosocial): 0.12, peer (peer): -0.97.

In twins family the score of FAD-GFS was significantly correlated with proso ( $r=-0.200$ ), the score of FSQ、EFQ was significantly correlated with total ( $r=0.206$ 、 $-0.304$ ), FLQ(include three factor) was significantly correlated with total、proso ( $r=-0.472$ ,  $0.389$ ;  $r=-0.277$ , $.247$ ;  $r=-0.298$ , $0.364$ ), the score of father authoritative parenting style was significantly correlated with total、proso  $r=-0.244$ , $0.207$  the score of mather authoritative parenting style was significantly correlated with total、proso  $r=-0.437$ ,  $0.342$  . The score of family cohesion was significantly correlated with total proso ( $r=-0.315$ , $0.432$ ), the score of family adaptability was significantly correlated with total、proso  $r=-0.359$ ,  $0.357$  .

**Conclusion:** Emotional problems were influenced by genetic factors most followed by inattention-hyperactivity problems and total difficulties environment factors play a main role in conduct problems and prosocial degree while peer problems were only influenced by environment factors. Each aspect of family environment influence children mental health differently.