MMPI-2 Correlates and Predictors of the Family Functioning Scale

An Honors Thesis (HONRS 499)

by

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Abstract

Previous research has demonstrated a relation between negative family functioning, for example poor communication between family members, physical and verbal abuse, and emotional distance, and low self-esteem and depression in adults, and introversion in children. The current study examines the relation between family functioning, as measured by the Family Functioning Scale (FFS), and introversion, as measured by the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) in adults and further investigates the relation between family functioning and low self-esteem and depression. Participants were 107 students from a Midwestern university (51 men and 56 women) ranging in age from 18 to 36 (mean age = 19.5). Participants completed computerized versions of the MMPI-2 and FFS, as part of a larger study. Zero-order correlations were calculated between the FFS total scores and MMPI-2 scales designed to measure low self-esteem, depression, and introversion. Significant correlations were then entered into a stepwise hierarchical regression analysis to determine which MMPI-2 scales accounted for the most variance in the FFS scores. Results indicated that demoralization (RCd) and negative emotionality (NEGE) were the best predictors of family functioning. These results suggested that adults from backgrounds of positive family functioning are less likely to be introverted or report problems with depression and low self-esteem.
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MMPI-2 Correlates and Predictors of the Family Functioning Scale

It has previously been demonstrated that the family environment people experience while growing up can have a lasting impact on a wide range of different personal characteristics for them throughout their lives (Edwards, Holden, Felitti, & Anda, 2003; Repetti, Taylor, & Seeman, 2002). Negative family environments, which can be ascertained by looking at a variety of different factors including familial structure (e.g., single-parent, large families), family dynamics (e.g., highly competitive, degrading, tension, lack of emotional support) parenting styles (e.g., harsh or unfair punishment, overprotective, lack of affection), low socioeconomic status, and abuse or neglect, have been correlated with low self-esteem and depression in adults (Holmes & Robins, 1988; Oliver & Paull, 1995; Scarr & Weinberg, 1978; Vangelisti, Maguire, Alexander, & Clark, 2007). Negative family environments have also been linked with introversion in children and adolescents, although not much is known about the possible effects in adults (Nakao et al., 2000).

Research conducted by Vangelisti, et al. (2007) examined the link between family environment and self-esteem. The participants, 393 undergraduate students, completed several questionnaires. In one questionnaire, they had to recall a hurtful family interaction and describe their feelings about it. They also completed questionnaires that examined different aspects of a hurtful family environment, including aggression, lack of affection, neglect, and violence. The researchers used different measures to assess the participants’ self-esteem, anxiety, verbal hostility, and satisfaction with family relationships. They found that participants’ scores who perceived their family environment as either aggressive or lacking in affection were negatively correlated with self-esteem.
Holmes and Robins (1988) conducted a study which explored the relation between family environment and parental disciplinary practices and depression and alcoholism in adults. The participants were 200 individuals who were selected from a pool of participants in the St. Louis Epidemiological Catchment Area, which was part of a study designed to determine the prevalence and incidence of psychiatric disorders in the general population. Participants were interviewed about their early home environments either in person or by telephone, and this data was compared with the information gained from the previous study about the incidence of depression or alcoholism among the participants. The results suggested a strong correlation between harsh or unfair punishment during childhood and adult occurrences of depression and alcoholism.

A study conducted by Oliver and Paull (1995) adds additional support to link family environment and self-esteem and depression in adults. The participants in this study were 186 undergraduates at a Catholic Midwestern university who spent at least 10 waking hours a week with their family. Participants completed measures assessing socialization, family environment, self-esteem, self-efficacy, introversion, and depression. The researchers found a significant positive correlation between depression and a parental rearing style of affectionless control (characterized by a lack of acceptance or affection and excessive control). Self-esteem was significantly and negatively correlated with both a parental rearing style of affectionless control and a family climate style of cohesionless control (the corresponding environment created when parents have a parental rearing style of affectionless control).

Nakao et al. (2000) examined the relationship between family environment and introversion in children. The participants were 150 Japanese children (mean age 13.2) who were evaluated on scales developed by the researchers to identify different aspects of their family
environments, including number of siblings, birth order, socioeconomic status, child-rearing patterns (rejection, indifference, appropriate rearing, overprotection/interference), maternal participation before age three and after age four, paternal participation before age three and after age four, and parent and sibling relationships (absent, poor, ambiguous, good). The researchers also examined the children's behavioral characteristics which they reduced to the categories of extraversion, maturity, and intellect. The results showed that child rearing patterns of overprotection or interference could influence levels of introversion in the children.

The studies described above examined the connections between family environment and self-esteem and depression in adults and family environment and introversion in children and adolescents. The purpose of the current study is to explore what connections there may be between negative family functioning as measured by the Family Functioning Scale (FFS; Tavitian, Lubiner, Green, Grebstein, & Velicer, 1987) and introversion as measured by the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher et al., 2001) in adults, as well as to further examine the relation between family functioning and self-esteem and depression, to determine if the results from previous research can be replicated with a well-validated measure (i.e., the MMPI-2). Based on previous research, it was predicted that family functioning would be negatively correlated with low-self esteem, depression, and introversion.

Method

Participants

The participants in the current study were 107 undergraduate students (51 men and 56 women) enrolled in an introductory psychology course at a Midwestern university. Their ages ranged from 18 to 36 (M=19.50, SD=2.87). Ninety-nine participants (92.5%) identified
themselves as Caucasian, four (3.7%) identified themselves as African American, and four (3.7%) identified themselves as "other" or did not specify an ethnicity.

Five participants' data were excluded from the study due to invalid MMPI-2 scores. On the MMPI-2, the criteria to remove invalid test results are T Score > 80 on TRIN, VRIN or L; T Score > 100 on F, FB, or Fp; and/or K > 80. Participants who did not complete 10% or more of the questions on the FFS were excluded; no participants in the current study were excluded for invalid FFS scores.

There were significant differences between valid and invalid groups in terms of age and ethnicity, but no differences based on gender. The mean age of participants with invalid scores was significantly higher than those with valid ones (t(105) = -2.368, p ≤ .02). When looking at ethnicity, African Americans and those who identified as "other" or did not specify ethnicity were significantly more likely to produce invalid profiles than Caucasian participants, $\chi^2(2, N = 102) = 8.020, p < .05$. However, it should be noted there were a relatively small number of participants who self-identified as belonging to an ethnic minority, which, in this case, would cause the differences between groups to be statistically significant, without necessarily having clinical meaning.

Of the final group of 102 participants, 49 were male and 53 were female, aged between 18 and 36 years ($M = 19.35, SD = 2.54$). Ninety six participants (94.2%) identified as Caucasian, three (2.9%) as African American, and three (2.9%) as "other" or did not specify an ethnicity.

Measures

**MMPI-2.** The Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher et al., 2001) is the most widely used personality test in the world and is also one of the most researched (Meyer & Weaver, 2007; Dorfman & Leonard, 2001). It was originally developed in 1943 by
Starke Hathaway and J. C. McKinley, but was restandardized in the late 1980s to create the MMPI-2 (Dorfman & Leonard, 2001). The MMPI-2 consists of 567 true or false questions designed to assess different areas of behavioral, social, personality, and psychological functioning. There are nine scales examined within the MMPI-2 that are designed to specifically measure low self-esteem, depression, and introversion. These scales include Clinical Scales 2 (Depression (D)) and 0 (Social Introversion (SI)); Content Scales Depression (DEP), Low Self-Esteem (LSE), and Social Discomfort (SOD); RC Scales Demoralization (DEM) and Low Positive Emotions (LPE); and Personality Psychopathology Five Scales (PSY-5) Negative Emotionality (NEGE) and Introversion (INTR).

FFS. The Family Functioning Scale (FFS; Tavitian et al., 1987) was designed as a measure to assess family functioning in adults based on such areas as positive family affect, family communication, family conflicts, family worries, and family rituals and support. It consists of 40 questions scored on a 7-point Likert scale ("Never" = 1 and "Always" = 7). The FFS has been shown to have fair internal consistency and good concurrent validity.

Procedure

Participants were administered computerized versions of both the MMPI-2 and the FFS in a single testing session (as part of a larger study). The administration of the criterion measures was counterbalanced in order to prevent order effects. Participants were read scripted instructions that insured them complete anonymity. They were also informed that they were free to discontinue the study at any time and did not have to answer any question they felt uncomfortable answering. Each participant received an informed consent form and course credit for their participation in the study.
Results

Zero-order correlations were calculated between the total FFS score and the MMPI-2 scales examining self-esteem, depression, and introversion. Alpha level was adjusted using a Bonferroni correction (.006 (.05 divided by 9) to reduce the possibility of Type I error. Correlations between the MMPI-2 scales and the total FFS score are shown in Table 1. Eight of the nine MMPI-2 scales were significantly correlated with the FFS score after the Bonferroni correction (Scale 0, DEP, LSE, SOD, RCDEM, RC2LPE, NEGE, INTR).

To determine which of the related scales MMPI-2 scales would be the most useful in predicting FFS scores, a stepwise statistical regression was performed. Of the eight scales included in the regression analysis, two scales were found to be statistically significant, as shown in Table 2. The RC scale DEM and the PSY-5 scale NEGE were found to account for 36.9% of the variance in FFS scores \(F(2, 99) = 30.53, p < .001\).

Discussion

The purpose of the current study was to explore the possible relation between negative family functioning and introversion in adults, as well as to further explore the relation between family functioning and low-self esteem and depression, in order to see if results from previous research could be replicated using a well-validated measure (i.e. the MMPI-2). The MMPI-2 was used to assess introversion, low-self esteem, and depression in the participants, and the FFS was used to measure the participants' family functioning. The results demonstrated significant negative correlations between eight of the nine rationally selected MMPI-2 scales measuring low-self esteem, depression, and introversion, as was hypothesized. The results of the regression analysis statistics were able to narrow down the MMPI-2 scales accounting for total FFS scores most effectively to RCd and NEGE. This suggests that people from backgrounds of negative
family functioning are more likely to experience emotional distress, which is highly related to low self-esteem and depression. Alternately, people from backgrounds of positive family functioning are less likely to experience emotional distress, and therefore are less likely to report problems with depression and low self-esteem.

These findings expand on the previous research conducted by Nakao et al. (2000) by showing that negative family functioning can affect the prevalence of introversion in adults as well as children and adolescents. This also adds additional support to the Nakao et al. study by using the MMPI-2, which is established and well-validated, to measure the participants' personality characteristics and psychological difficulties (as opposed to scales created by the researchers).

Because the current study supported previous research on the relation between negative family functioning and low-self esteem and depression, it also helps support the validity of the FFS as a measure of family functioning. While the MMPI-2 already has an extensive research base, the FFS has less research supporting it. The current study, which used the FFS to measure family functioning, replicated results found in previous research which used a variety of different measures of family functioning. This adds additional support to the construct validity of the FFS.

The limitations of the current study include a relatively small sample size and lack of ethnic diversity in the sample. Because there were only 102 participants in the final sample, the ability to generalize the results diminishes. Also, because there were so few minority participants, there are further limitations on the ability to generalize the results to people of ethnic backgrounds outside of the mostly Caucasian participants. Finally, as the participants in the current study were recruited solely from a university population, this limits the ability to
generalize the results to the population at large. Further research on the effects of negative family functioning and personality characteristics and psychological difficulties would benefit from the use of a larger, more representative sample.

Based on the results of this study, there are relations between negative family functioning and low self-esteem, depression, and introversion. These relations are especially apparent with the MMPI-2 scales of RCd and NEGE, which accounted for almost 37% of the variance in total FFS scores. These results suggest that adults from backgrounds of positive family functioning are less likely to report problems with low self-esteem, depression, and introversion. However, more research is necessary in order to expand upon these findings.
References


Table 1
Correlations of selected MMPI-2 scales total FFS total scores

<table>
<thead>
<tr>
<th>MMPI-2 Scales</th>
<th>r</th>
<th>(N = 102)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical Scales</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Si (Social Introversion)</td>
<td>-.458</td>
<td></td>
</tr>
<tr>
<td><strong>Content Scales</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEP (Depression)</td>
<td>-.587</td>
<td></td>
</tr>
<tr>
<td>LSE (Low Self-Esteem)</td>
<td>-.537</td>
<td></td>
</tr>
<tr>
<td>SOD (Social Discomfort)</td>
<td>-.403</td>
<td></td>
</tr>
<tr>
<td><strong>Psychopathology Five (PSY-5)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEGE (Negative Emotionality)</td>
<td>-.566</td>
<td></td>
</tr>
<tr>
<td>INTR (Introversion)</td>
<td>-.329</td>
<td></td>
</tr>
<tr>
<td><strong>Restructured Clinical Scales</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCd (Demoralization)</td>
<td>-.366</td>
<td></td>
</tr>
<tr>
<td>RC2 (Low Positive Emotions)</td>
<td>-.593</td>
<td></td>
</tr>
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</table>

Note: p < .001
Table 2  
Regression analysis results for FFS total score predictors

<table>
<thead>
<tr>
<th>MMPI-2 Scale</th>
<th>$R$</th>
<th>$R^2$</th>
<th>$R^2_{adj}$</th>
<th>$R^2_{chg}$</th>
<th>$F$</th>
<th>$df$</th>
<th>$p \leq$</th>
<th>$F_{chg}$</th>
<th>$p \leq$</th>
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<tbody>
<tr>
<td>RCd</td>
<td>.593</td>
<td>.352</td>
<td>.346</td>
<td>.352</td>
<td>54.351</td>
<td>1, 100</td>
<td>.001</td>
<td>54.351</td>
<td>.001</td>
</tr>
<tr>
<td>RCd, NEGE</td>
<td>.618</td>
<td>.381</td>
<td>.369</td>
<td>.029</td>
<td>30.325</td>
<td>2, 99</td>
<td>.001</td>
<td>4.699</td>
<td>.001</td>
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