Personality Hardiness, Attrition and Leader Performance at West Point*

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ABSTRACT

Current and future military forces face an increasingly complex world, with a greatly expanded range of missions and tasks including peacekeeping and counter-terrorism activities (Moskos, Williams and Segal, 2000). Modern military officers must thus be highly resilient, resourceful, and quick to adjust to unusual and changing situations. In this view, personality variables such as hardiness are likely important for effective leadership. Data on personality hardiness were collected at entry from four consecutive classes of United States Military Academy - West Point cadets (July, 2001-July, 2004). This resulted in a final data set of 4,895 cadets with one-to-four years of tenure at the Academy. A fifteen-item measure was used to assess hardiness along three dimensions: commitment, control, and challenge. Criterion measures including academic, physical, and military performance; and attrition were also collected at key junctures, including initial basic and advanced summer training, and at critical academic periods. Results revealed significantly lower hardiness levels among cadets who were separated during initial basic training, as compared to those who were retained. The hardiness facet of commitment emerged as the biggest discriminator between separated and retained cadets, with retained cadets showing higher commitment levels. Additional analyses supported a slight to moderate (but consistent) correlation between hardiness and ratings of cadet military performance ($r = .09$ to $.15$). Women reported a slightly higher level than men on the hardiness facet of challenge.
INTRODUCTION

The U.S. Military Academy (West Point) presents entering cadets with significant challenges in terms of academic work, military training, physical fitness, and character development. West Point attracts and selects candidates with high levels of academic, leadership, and athletic achievement and potential. Proven ability in each of these areas is considered to be predictive of future success. However, successful adaptation to the demanding environment of the military academy may depend as much on psychological characteristics as on traditional aptitude and physical fitness measures. One psychological construct that is relevant to adaptation to demanding environments is hardiness, a personality dimension linked to continued health and performance in a variety of stressful circumstances (Kobasa, 1979).

Hardiness is a personality dimension that develops early in life and is reasonably stable over time, though amenable to change (Kobasa, 1979; Maddi & Kobasa, 1984). Hardiness involves a high sense of commitment to life and work, a strong belief in one's ability to control events and influence outcomes, and greater openness to change and challenges in life (Kobasa 1979; Maddi & Kobasa 1984). Persons high in hardiness are more resilient when exposed to a range of environmental stressors, and tend to remain healthy and perform well despite high stress levels (Bartone, 1989; Bartone, 1999; Bartone, 2000).

West Point provides an appropriate setting in which to examine the role of hardiness in adaptation to a stressful or demanding setting. It provides a 47-month long educational and military training program designed to test the limits of cadets’ mental, emotional, and physical skills and adaptive strategies. Success at West Point, then, may depend partly on personal attributes related to the hardiness construct. The purpose of the current study is to assess the role of hardiness on four important indices of adjustment: (1) academic performance, (2) military performance, (3) physical performance, and (4) retention over the four year period following admission to West Point.
METHOD

Participants

Participants were from four consecutive classes of cadets who entered the United States Military Academy, West Point in July of 2001, 2002, 2003, or 2004 (tenure of one to four years). The 4,895 cadets that made-up these four classes were typical of recent West Point classes in terms of gender (15.7% female, 84.3% male) and race (77% white, 23% minorities). Due to normal attrition the final study group consisted of n=934 separated and n=3961 retained cadets.

Materials and Procedure

Predictor Variable

Hardiness. Hardy persons have a high sense of life and work commitment, a greater feeling of control, and are more open to change and challenges in life. This study used a short, 15-item scale for measuring personality hardiness. It includes items covering the three facets of commitment, control and challenge. It has demonstrated excellent psychometric properties, including measures of internal consistency, and criterion-related validity in several samples, with respect both to health and performance under high-stress conditions.

Criterion Variables

Academic Program Score (APS). The APS represents the cumulative grade point average for all academic subjects excluding the Military Science and Physical Education core courses.

Military Program Score (MPS). The MPS is a weighted average of sixteen evaluated activities, including: summer training, military performance during each term, and Military Science courses. Physical Program Score (PPS). The PPS is the weighted average of evaluations from Physical Education courses (50%), fitness testing (30%), and athletic participation (20%).

Attrition. This represents a cadet’s status as either retained or separated from the military academy. Attrition data can be examined at key junctures, including, at the end of cadet basic and advanced summer training, and at the end of the four year academic period. Reasons for attrition vary to include, motivation, medical, academic, honor, etc.
Data Collection

Hardiness scores were collected for each entering class of cadets during a group testing session on the second or third day after arrival. Criterion scores were abstracted from cadet personnel databases and linked with respective hardiness scores.

RESULTS

Table 1 illustrates that in three of the four classes (and when the class years were combined), the hardiness scores of cadets separated during Cadet Basic Training (CBT) are lower than the hardiness scores of those cadets who were retained. Table 2 demonstrates that while cadets separated from CBT versus retained differed on each of the three hardiness facets, the largest difference between the two groups was associated with the commitment facet.

In Table 3 the commitment facet is further shown to be consistently smaller for cadets separated from CBT than for retained cadets, for each of the four class years. Hardiness and facet scores were then examined for cadets who were separated at any point during their tenure at West Point and for any reason, with retained cadets. As Table 4 shows, the two groups were again found to be significantly different on the commitment facet scores, as well as on the control facet and the total hardiness score.

The hardiness facet and total scores were correlated with several key cadet performance measures; academic, military and physical performance, and attrition. The strongest relationship was found between commitment and military performance ($r = .15$, $p < .001$). The commitment facet also had a slight relationship with physical performance ($r = .08$, $p < .05$) and attrition ($r = .07$, $p < .001$). The facet score of control was slightly negatively correlated with academic performance ($r = -.09$, $p < .001$). The total hardiness scale was also shown to be slightly correlated with military performance ($r = .09$, $p < .001$).

The commitment facet was noted for its increasing strength with performance across the cadet four year experience, increasing in size from .09 during plebe year to .15 for seniors cadets. Confirming previous findings, slightly higher hardiness ratings were associated with women cadets at West Point. The significantly ($p < .00$), higher ratings of women were most notable in the hardiness facet of challenge.
Table 1: Hardiness Scores of Cadets
Separated versus Retained from Cadet Basic Training by Graduating Class Year

<table>
<thead>
<tr>
<th>Class</th>
<th>Separated</th>
<th>Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 05</td>
<td>1.84</td>
<td>1.98</td>
</tr>
<tr>
<td>Class 06</td>
<td>1.91</td>
<td>1.97</td>
</tr>
<tr>
<td>Class 07</td>
<td>1.80</td>
<td>1.95</td>
</tr>
<tr>
<td>Class 08</td>
<td>1.84</td>
<td>1.97</td>
</tr>
<tr>
<td>All Classes</td>
<td>1.85</td>
<td>1.97</td>
</tr>
</tbody>
</table>

N:
- Class 05: N=35
- Class 06: N=106
- Class 07: N=75
- Class 08: N=75
- All Classes: N=256

p values:
- p < .01
- p < .11
- p < .00

Diagram: Bar chart showing hardiness scores for separated and retained cadets across different class years, with p-values indicating significance levels.
TABLE 2
Hardiness Facet Scores of Cadets
Separated versus Retained from
Cadet Basic Training for Combined Class Years

<table>
<thead>
<tr>
<th>Facet</th>
<th>Separated</th>
<th>Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>1.95</td>
<td>2.13</td>
</tr>
<tr>
<td>Control</td>
<td>1.96</td>
<td>2.03</td>
</tr>
<tr>
<td>Challenge</td>
<td>1.63</td>
<td>1.73</td>
</tr>
</tbody>
</table>

p < .00  p < .00  p < .00
TABLE 3
Commitment Facet Scores of Cadets
Separated versus Retained from
Cadet Basic Training by Graduating Class Year

<table>
<thead>
<tr>
<th>Class Year</th>
<th>Separated</th>
<th>Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 05</td>
<td>1.82</td>
<td>2.15</td>
</tr>
<tr>
<td>Class 06</td>
<td>2.02</td>
<td>2.15</td>
</tr>
<tr>
<td>Class 07</td>
<td>1.94</td>
<td>2.10</td>
</tr>
<tr>
<td>Class 08</td>
<td>1.94</td>
<td>2.13</td>
</tr>
</tbody>
</table>

p < .00  p < .01  p < .00  p < .00

N=36  N=75  N=76  N=71
TABLE 4
Hardiness and Facet Scores of Cadets
Separated (for all reasons) versus Retained

<table>
<thead>
<tr>
<th>Facet</th>
<th>Separated</th>
<th>Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardiness</td>
<td>1.92</td>
<td>1.97</td>
</tr>
<tr>
<td>Commitment</td>
<td>2.06</td>
<td>2.13</td>
</tr>
<tr>
<td>Control</td>
<td>1.98</td>
<td>2.03</td>
</tr>
<tr>
<td>Challenge</td>
<td>1.72</td>
<td>1.73</td>
</tr>
</tbody>
</table>

N=832
N=3935
N=841
N=3984
N=840
N=3979
N=841
N=3972

p < .00   p < .00   p < .00   p < .80
CONCLUSIONS

Hardiness was shown to discriminate between cadets separated at any point during their West Point experience and those cadets who persisted and were retained. The hardiness facet commitment was shown to be the largest discriminator between the two groups during CBT and during the four year cadet experience. In addition, commitment was the facet with the strongest relationship to ratings of cadet military performance.

While the mean differences and correlations are modest, we judge them to be meaningful and of practical significance in this context, especially considering the observed effects are not corrected for unreliability of measures (Cohen, 1988). In addition, the mean differences found could easily be obscured because many of the cadets who separate from West Point are in fact quite high in hardiness. This points to the need for further analysis examining the hardiness-attrition relationship across specific reasons, for example: injury, unforeseen family illness, failure to meet weight or fitness standards, and “motivational” reasons.

Also, it now appears that timing is likely an important consideration regarding cadet attrition. This study has reaffirmed earlier results, demonstrating that cadets who attrit during the very first summer are lower in hardiness than those who remain. The magnitude of this difference, however appears to diminish over the full tenure at West Point. Different factors may indeed influence the decision to leave at various points in the overall experience. Future work should also examine other groups to evaluate the potential influence of hardiness-commitment and other personality dimensions on attrition / retention and performance.

The attrition results are also intriguing, because they suggest that a personality variable can be important to predicting who will stay at West Point. The data suggest that resilience in the face of a long and demanding military and educational experience is a key factor in successful adjustment.