Introduction

Today’s youth continue to find themselves in situations of stress, conflict, and abuse. Identified risk factors include exposure to schoolplace violence (Zinna, 1999), family violence (Adamson & Thompson, 1998), unsafe neighborhoods (Schwartz & Gorman, 2003), and the violence observed in the news and portrayed in the media (Bushman & Anderson, 2001; Cheng et al., 2004). Other factors recognized as risks are associated with peer rejection, bullying, intimidation, teasing, fearfulness, depressive feelings, and violent and abusive experiences (NIMH, 2000). In a study of 40,000 children over a five-year period, Lundy and Grossman (2005) found that 43% of the older children and beginning adolescents were often afraid, almost 60% experienced mood swings, and more than one half reported social problems. It has been estimated that 10 to 15% of individuals between 9 and 17 years of age have some symptoms of depression (Guida, 2001). The Youth Risk and Resilience Inventory (YRRI) was developed to screen for risk factors and to identify individual assets or resilience factors. Identifying, understanding, and promoting resilience factors and personal strengths are encouraging avenues for clinical application and further research (APA, 2004; Kersting, 2003; Beardslee, 1989; Seligman & Csikszentmihalyi, 2000).

Purpose

The YRRI was designed for use with youth to screen for the presence of risk factors such as teasing, intimidation, bullying, physical abuse, violence, and victimization; to identify signs of emotional stress; and to assess their impact on the individual. The YRRI addresses external risk factors that may be present in school, home, and community situations. Interpersonal risk factors associated with the value and quality of relationships are also addressed. Lastly, the YRRI helps identify intrapersonal risk factors that can contribute to subjective distress and dysphoria. The YRRI also surveys resilience factors, sometimes called protective factors or personal assets. Resilience factors are the strengths that contribute to healthy coping and endurance. They include self-directedness; proactiveness; goal setting; planfulness; persistence; affirming families; and supportive relationships with peers, adults, and significant others.

Readability and Human Interest Level

By applying the Flesch (1949) formulae and scales, the YRRI readability, or “reading ease,” was determined to be at the fourth grade level, and “human interest” exceeded the “very interesting” level.
Development and Psychometric Properties

Content Validity

Content validation results from the specification and the logical analysis of a given content domain (Lemke & Wiersma, 1976). Content validity involves both Item validity and Sampling validity (Gay & Airasian, 2000). "Item validity is concerned with whether the test items are relevant to the measurement of the intended content area. Sampling validity is concerned with how well the test samples the total content area being tested" (Gay & Airasian, 2000). The content of Risk Factor items was developed from findings in the social, behavioral, and medical science literature (Adamson & Thompson, 1998; Ballif-Spanvill, Clayton & Hendrix, 2003; Barnett & Fiorentino, 2000; Becker & McCloskey, 2002; Bennett & Fineran, 1998; Bushman & Anderson, 2001; Clingempel & Henggeler, 2003; Frost & Pakiz, 1990; Hasan & Power, 2004; Herrenkohl, Herrenkohl & Egolf, 2003; Johnson, 1995; Kelley, 1994; Kilpatrick & Williams, 1997; MacEwen, 1994; McCloskey, Figuredo & Koss, 1995; Newberger & DeVos, 1988; O'Keefe, 1994; Pakiz, Reinherz & Giaconia, 1997; Piotrkowski & Brannen, 2002; Porter, 1980; Rubenstein, Halton, Kasten, Rubin & Stechler, 1998; Silvern, Karyl, Waede, Hodges, 1995; Spaccarelli, Sandler & Rousa, 1994; Wallerstein, 1984; Werner, 1989). Thirty-six Risk Factor items were included in the YRRI. The development of Resilience Factor items was based on the research and discussions of resilience factors, protective factors, and personal strengths and assets reported in the behavioral and social science literature (APA, 2002; Aspy, Oman, Vesely, McLeroy, Rodine & Marshall, 2004; Beardslee, 1989; Bowen & Flora, 2002; Kersting, 2003; Knowlton, 2001; LeVant, 2003; Liem, James, O'Toole & Boudevyn, 1997; Masten, 2001; Neher & Short, 1998; Seligman & Csikszentmihalyi, 2000). There are 18 Resilience Factor items in the YRRI. Sampling validity was accomplished by surveying school, home, and community situations. Symptoms of depression, anxiety spectrum disorders, and emotional states, as well as dimensions of both intra- and inter-personal relationships, were also addressed in meeting sampling criteria.

Concurrent-Criterion Validity

Concurrent validity is the ability of a test to produce results in keeping with those of some criterion within the same time frame (Sellitz et al, 1976). In the case of the YRRI, an initial concurrent validity study was conducted in September and October of 2004. It was hypothesized that children and adolescents identified by their teachers, caseworkers, or counselors as at-risk would have significantly higher Risk Factor scores on the YRRI than the participating children and adolescents identified as non at-risk. Seventy-six individuals, ranging in age from 10 to 19 years, participated in this initial study. The difference between the scores of the two groups was assessed using a t test. Results indicated that the individuals identified as at-risk had significantly higher Risk Factor scores than the non at-risk group (t = 2.08, df = 74, p = .04). The hypothesis that the at-risk participants would obtain higher Risk Factor scores than the non at-risk group was accepted. The statistical results suggested that 96% of the variability in Risk Factor scores could be accounted for by the risk status of study participants, and 4% of the variability could be attributed to chance. These findings provided some early support for the YRRI’s use as a practical screening device for risk factors.

Resilience Factors were also addressed in the September-October 2004 study. It was hypothesized that the non at-risk participants would obtain significantly higher Resilience Factor scores than those participants identified as at-risk by their teachers, caseworkers, or counselors. The t test results, (t = 3.21, df = 74, p = .002) supported acceptance of the hypothesis. In other words, 99.8% of the variability in Resilience Factor scores could be attributed to level of resilience and only .2% accounted for by chance.

In general, these early results suggested higher Risk Factor scores and lower Resilience Factor scores for the at-risk group in the study. On the other hand, the non at-risk group had higher Resilience Factor scores and lower Risk Factor scores. A follow-up correlational study (Pearson r = -.45, p < .001) affirmed an inverse relationship between these constructs.

Replications of the Risk Factor study were conducted in November 2004 (t = 4.23, df = 91, p < .0001), in January 2005 (t = 4.82, df = 100, p = .0001), and in March 2005 (t = 4.77, df = 111, p = .0001). These concurrent validity studies provided additional confirming results. In these three more-recent studies, when the differences in Risk Factor scores of a sample of children and adolescents from non at-risk situations were tested against those children and adolescents independently identified as at-risk, the at-risk sample obtained significantly higher Risk Factor scores.

At-risk children and adolescents from a variety of settings were included in the January 2005 study. Table 1 presents a break down of the sample groups by setting and/or situation. The t test findings suggest significantly higher Risk Factor scores for the at-risk participants identified by their teachers, those being seen by the school counselors, and those beginning substance abuse treatment. Risk Factor scores were higher for the sample of children and adolescents in a domestic violence shelter completing the seventh week of an eight-week treatment program, although the difference did not reach the .05 level of significance. These findings suggest that the YRRI has strong potential for use in screening for at-risk children and adolescents.
Table 1: Differences in Risk Factor scores of at-risk participants compared to non at-risk participants

<table>
<thead>
<tr>
<th>At-risk participants</th>
<th>$t$</th>
<th>degrees of freedom df</th>
<th>probability $p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>At-risk identified by classroom teacher</td>
<td>2.74</td>
<td>75</td>
<td>$p = .008^*$</td>
</tr>
<tr>
<td>At-risk seen by school counselor</td>
<td>4.45</td>
<td>78</td>
<td>$p &lt; .0001^*$</td>
</tr>
<tr>
<td>At-risk completing domestic violence shelter program</td>
<td>1.74</td>
<td>77</td>
<td>$p = .08$</td>
</tr>
<tr>
<td>At-risk beginning substance abuse treatment</td>
<td>1.94</td>
<td>80</td>
<td>$p = .05^*$</td>
</tr>
</tbody>
</table>

*Statistically significant

The scores for Depression-related items (numbers 25, 26, 31, 32, 34, 40) for the at-risk sample were tested against the scores of the Depression-related items of the non at-risk sample. The at-risk sample had significantly higher scores on the Depression-related items ($t = 2.13$, $df = 100$, $p < .0001$). In a similar way, the differences between scores on Anxiety Spectrum items (numbers 8, 23, 43, 46, 50) were tested for the at-risk and non at-risk samples. Results showed that the at-risk sample scored significantly higher on the Anxiety-related items ($t = 4.02$, $df = 100$, $p < .0001$).

When the differences in Resilience Factor scores of a sample of children and adolescents from non at-risk situations were tested against the Resilience Factor scores of youth who were beginning court-ordered substance abuse treatment, the former obtained significantly higher Resilience Factor scores ($t = 2.10$, $df = 80$, $p = .039$). On the other hand, when the Resilience Factor scores of the at-risk children being seen by the school counselor were tested against the non at-risk sample, no significant differences in Resilience scores were found ($t = .43$, $df = 78$, $p = .66$). In addition, the Resilience Factor scores for those at-risk youth completing an intervention program at a domestic violence shelter were higher than the non at-risk participants in the study ($t = 1.81$, $df = 77$, $p = .07$). Results showed that for the samples of at-risk youth who were either seen by the school counselor, or were in treatment at a domestic violence shelter, Resilience Factor scores were not significantly different from the non at-risk sample. These preliminary findings may suggest that for these samples of at-risk youth, school counselor intervention and domestic violence shelter programs contributed to fostering resilience, personal assets, and strengths. These results particularly speak to the efficacy of both in-school and domestic violence shelter programs for at-risk students. These findings also speak to the YRRI’s potential use for At-Risk Program evaluation. Resilience Factor data are summarized in Table 2.

Table 2: Differences in Resilience Factor scores of at-risk participants compared to non at-risk participants

<table>
<thead>
<tr>
<th>At-risk participants</th>
<th>$t$</th>
<th>degrees of freedom df</th>
<th>probability $p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>At-risk identified by classroom teacher</td>
<td>3.24</td>
<td>74</td>
<td>$p = .002^*$</td>
</tr>
<tr>
<td>At-risk seen by school counselor</td>
<td>0.43</td>
<td>78</td>
<td>$p = .66$</td>
</tr>
<tr>
<td>At-risk completing domestic violence shelter program</td>
<td>1.81</td>
<td>77</td>
<td>$p = .07$</td>
</tr>
<tr>
<td>At-risk beginning substance abuse treatment</td>
<td>2.10</td>
<td>80</td>
<td>$p = .039^*$</td>
</tr>
</tbody>
</table>

*Statistically significant

Reliability

Reliability is the degree to which a test can consistently measure what it is supposed to measure (Gay & Airasian, 2000). Reliability studies were conducted in September-October 2004 ($n = 76$) using the split-half method; see Table 3. Spearman-Brown correlations computed for each scale were as follows: Risk scale ($r = .827$, $p < .001$) and Resilience scale ($r = .802$, $p < .001$). Further internal item consistency was assessed using Cronbach’s alpha (mean $\alpha = .72$), with a composite Spearman-Brown coefficient of .837 for the YRRI. These findings meet acceptable criteria for test reliability and internal consistency (Hood & Johnson, 2002).

Table 3: Split-half reliability and internal consistency

<table>
<thead>
<tr>
<th>Measure</th>
<th>Spearman-Brown $r$</th>
<th>Probability $p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth Risk and Resilience Inventory (YRRI)</td>
<td>.837**</td>
<td>$p &lt; .001$**</td>
</tr>
<tr>
<td>Risk Factor scale</td>
<td>.827**</td>
<td>$p &lt; .001$**</td>
</tr>
<tr>
<td>Resilience Factor scale</td>
<td>.802</td>
<td>$p &lt; .001$**</td>
</tr>
</tbody>
</table>

*Based on Cronbach mean $\alpha = .72$  **statistically significant

Standard Error of Measurement

The Standard Error of Measurement ($SEm$) is a measure of the variability of any given score based on the reliability of each test scale. The $SEm$s for both the Risk Factor scale and the Resilience Factor scale are presented in Table 4.

Table 4: Standard Error of Measurement ($SEm$)

<table>
<thead>
<tr>
<th>scale</th>
<th>$SEm$ raw score</th>
<th>mean raw score</th>
<th>$sd$ raw score</th>
<th>$SEm$ T score</th>
<th>mean T score</th>
<th>$sd$ T score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Factors</td>
<td>7.09</td>
<td>70.45</td>
<td>17.09</td>
<td>4.15</td>
<td>50</td>
<td>10</td>
</tr>
<tr>
<td>Resilience Factors</td>
<td>6.81</td>
<td>68.13</td>
<td>11.26</td>
<td>4.45</td>
<td>50</td>
<td>10</td>
</tr>
</tbody>
</table>

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Preliminary Norms

The scores of a sample (n = 76) of youth ranging in age from 10 to 19 years (mn = 14.33, sd = 2.71) were used to develop preliminary norms for the Risk and Resilience scales of the YRRI. The sample was drawn from a population of youth from urban, rural, and suburban settings who had been given the YRRI by a teacher, caseworker, counselor, and/or mental health worker. Scores were then normalized and standard scores (in this case, T scores) were developed.

Administration

Directions

Youth (ages 10–17) are asked to read each statement and then indicate how often the statement would describe them or their situations by circling 1 for Never, 2 for Seldom, 3 for Sometimes, 4 for Often, and 5 for Very Often. They are asked to read and respond to each item.

Items are presented in five groupings to facilitate self-scoring. Youth who are self-scoring may be asked to sum each of the five groupings and then transfer their subtotals to the summation box in Step 2. After obtaining their total yellow and green raw scores, youth may then see where these scores fall on the color-coded Risk and Strength (Resilience) bar histograms. It should be noted that the histograms were designed for general comparison purposes only. An additional self-reporting opportunity is provided for individuals who may elect, or be asked, to complete the My Journal section in Step 3 of the YRRI.

Scoring

The sum of the responses on the 36 Risk Factor items is the total Risk Factor raw score. The responses on 18 Resilience Factor items are summed in a similar manner to obtain the Resilience Factor total raw score. Total raw scores can be converted to T scores.

Interpretation

Using a normative approach, individual total Risk Factor raw scores can be compared to the norm group raw score totals in Table 5 in order to estimate an at-risk level. For example, a Risk Factor raw score of 79 would fall into the average to high-average range for risk factors, and a Risk Factor raw score of 97 would fall into the at-risk to high-risk range. In a similar way, by using Table 6, a total Resilience Factor raw score can be used to estimate the level of Resilience Factors present. Cut off points for both Risk Factor raw scores and Resilience Factor raw scores were determined using the one standard deviation method for clinical significances (Wise, 2004). Generally speaking, Resilience raw scores between 58 and 78 fall within the low-average to high-average range. Regardless of the at-risk level obtained, it is recommended that a critical item analysis be undertaken.

Table 5: Interpretation of Risk Factor scores

<table>
<thead>
<tr>
<th>raw score</th>
<th>T score**</th>
</tr>
</thead>
<tbody>
<tr>
<td>extreme risk</td>
<td>120</td>
</tr>
<tr>
<td>high risk</td>
<td>105</td>
</tr>
<tr>
<td>at-risk</td>
<td>87</td>
</tr>
<tr>
<td>average risk</td>
<td>70</td>
</tr>
<tr>
<td>low risk</td>
<td>60</td>
</tr>
<tr>
<td>no risk</td>
<td>36</td>
</tr>
</tbody>
</table>

* +/-7.09  ** +/-4.15

Table 6: Interpretation of Resilience Factor scores

<table>
<thead>
<tr>
<th>resilience raw score*</th>
<th>T score**</th>
</tr>
</thead>
<tbody>
<tr>
<td>very high</td>
<td>90</td>
</tr>
<tr>
<td>high</td>
<td>79</td>
</tr>
<tr>
<td>average</td>
<td>68</td>
</tr>
<tr>
<td>low</td>
<td>57</td>
</tr>
<tr>
<td>very low</td>
<td>46</td>
</tr>
</tbody>
</table>

* +/-6.81  ** +/-4.45

Critical items. Using an ipsative or individualized approach, the next step in interpretation is to look at the response patterns of the following critical items:

- Item 20: I have been forced to do things against my will.
- Item 22: I feel I have been violated.
- Item 28: I’m abused by someone close to me.
- Item 41: Awful things have happened to me.
- Item 52: I have been sexually abused.

Did the youth endorse any of these critical items? If so, explore the response further with the youth. For example, item 28 is “I’m abused by someone close to me.” You might ask about the nature of the abuse and the frequency and duration of the abuse. Another example is item 20: “I have been made to do things against my will.” Was the youth a victim of abuse; compromised on a date; forced to participate in hazing or bullying; or involved in an aberrant act because of fear of reprisal or additional bodily harm? Or was the youth merely told to go to his or her room to do homework instead of watching TV, or do some extra push-ups by an athletic coach?
Depression-related items. Next, check the response pattern for the Depression-related items for symptoms of depression: item 25...problems with sleep, item 26...sad and blue, item 31...bored, item 32...stay to myself, item 34...trouble concentrating, and item 40...things are stacked against me. See Table 7 for total Depression-related items raw-score and cut-off-point comparisons.

Anxiety Spectrum items. The response pattern for items that survey emotional states such as worry, fear, rejection, and distress can also be explored. They include items 8 and 23...afraid, item 46...suffering inside, item 43...nightmares, and item 50...worry. Compare total raw score and cut off for these items in Table 7.

| Table 7: Mean scores and cut-off scores for Depression-related and Anxiety Spectrum items. |
|-----------------------------------------------|-----------------------------------------------|
| Items                                         | at-risk                                      | cut-off point* | non at-risk                                      |
| Items                                         | mean  | std dev | score  | mean  | std dev |
| Depression-related                            |       |         |        |       |         |
| items                                         |       |         |        |       |         |
| 17.9                                         | 3.86  | 16.95   | 15.81  | 4.75  |
| Anxiety Spectrum                              | 11.23 | 3.05    | 9.73   | 8.45  | 3.23    |

* The Jacobson & Truax (1991) formula for determining the cut-off points of adjacent samples was used.

Victimization items. Review the response pattern to the following items to determine a severity level for individuals subjected to taunts, harassment, and bullying: item 1...teased, item 2...pushed around, item 4...made fun of, items 7 and 16...threatened, and item 10...picked on.

Situation items. Items specific to school, home, and community environments might also be reviewed. School situation items are items 1, 7, 11, 13, and 14. Home situation items include items 5, 35, and 47. Some Community situation items are items 16 and 17.

Resilience items. There are 18 Resilience items coded in green. Those items endorsed at the 4 for “Often” or 5 for “Very Often” level could be considered personal assets and strengths. Those items endorsed as 1 for “Never,” 2 for “Seldom,” or 3 for “Sometimes” are an indication that these protective factors may not yet be fully developed. Intervention strategies can then be initiated to address these needs.

False negatives. YRRI scores are based on honest and forthright item responses. Minimizing and denial can contribute to false negative scores. Individuals who want to make a good impression or who are responding in what they perceive as a socially acceptable manner may produce false negative scores. Fears of discovery or exposure as well as fear of further intimidation or reprisal could also contribute to false negative scores.

False positives. Increased or exaggerated response patterns may be associated with or contribute to false positive scores. Such scores could reflect subjective distress or represent a cry for help.

Both false positives and false negatives could be clinically significant if other at-risk indicators and signs are present, such as a significant drop in school grades (Schwartz & Gorman, 2003), uncooperativeness, increased irritability, acting out, self-isolation (Zinna, 1999), reduced or lowered motivation and concentration, decrease in personal hygiene (Guida, 2001), and regressive behaviors (Lundy & Grossman, 2005) that are sometime manifested in younger children and may include increased clinging, enuresis, and baby talk. On a cautionary note, while over interpretation should be avoided, the tendency to under interpret or minimize seems always a concern (Fox & Hardling, 2005). Burns et al. (2004) pointed out that of the 1.7 million children and adolescents investigated for maltreatment, just over 814,000 had a substantial need for mental health services but only 192,000 actually received them. Because the YRRI is meant to be a screening device, it should not be used as the sole measure to determine risk or resiliance. If abuse is suspected, additional clinical procedures may be indicated including a clinical/counseling interview and additional collateral information such as developmental history, school history, family and social history, and treatment history, if any.

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References


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