



Factor structure of the Youth Coping In Traumatic Times (YCITT) scale

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ABSTRACT

The objective of the present study is to determine if a brief measure of coping strategies administered to children and adolescents after a mass traumatic event – Youth Coping In Traumatic Times (YCITT) – has a factor structure similar to that of a lengthier, widely used scale, the *How I Coped Under Pressure Scale* (HICUPS). The YCITT was developed for the New York City – Board of Education WTC Study, conducted 6 months after 9/11. Confirmatory Factor Analyses (CFA) and Exploratory Factor Analysis (EFA) were performed in two randomly selected sub-samples of youth in grades 6–12 (sub-sample 1, $n=2249$; sub-sample 2, $n=2315$). In sub-sample 1, CFA indicated acceptable fit of a four-factor solution based on the HICUPS (distraction, active coping, support seeking and avoidance) and EFA yielded a nearly identical solution. In sub-sample 2, CFA indicated that the fit of the HICUPS-based factor solution and the solution derived from the EFA in sub-sample 1 were very similar, with both indicating acceptable model fit. In conclusion, the brief YCITT has a factor structure, which is similar to that of the HICUPS. When used in large-scale assessments of future mass traumatic events, the measure can provide relevant information about youth coping strategies across four key coping domains.

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1. Introduction

A traumatic experience can have a substantial impact on the development of psychiatric disorders in children, and using appropriate coping strategies is essential for effectively dealing with painful and distressing emotions. Symptoms resulting from a large-scale traumatic event can frequently extend from childhood into adolescence, and even adulthood (Hubbard et al., 1995). Therefore, it is important to also assess coping behaviours after a disaster, as they are likely to be associated with psychiatric outcomes (Silver et al., 2002). Furthermore, understanding the mechanisms underlying coping can help discern, which interventions are most likely to reduce psychological distress in children (Sandler et al., 1997).

Although research focussed on coping is abundant, making comparisons across studies is problematic as definitions and models of coping are by no means uniform (Skinner et al., 2003). The most common definition cited in research is that of Lazarus and Folkman (1984 p.141), who characterise coping as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the

resources of the person.” The majority of coping measures have failed to replicate common dimensions in diverse contexts and with different populations. For example, Skinner et al. (2003) present in their review of the literature (including studies across all ages) approximately 400 ways of categorising coping strategies, and roughly 100 categorical systems, none of which were identical. Coping dimensions are frequently derived empirically using exploratory factor analysis (EFA), which is often performed without encompassing an explicit theoretical foundation, generating factors that are lacking in interpretability (Connor-Smith et al., 2000). For example, a commonly used scale, such as the *A-COPE* (Patterson and McCubbin, 1987), has generated an assortment of different dimensions. These have consisted of three (Dusek and Danko, 1994) and six factors (Feldman et al., 1995), in addition to the original 12 factors (Patterson and McCubbin, 1987), with very little overlap (Compas et al., 2001). Similarly, the *Kidcope* (Spirito et al., 1995), which is one of the few existing brief coping measures developed for children, has produced a diverse selection of factor structures that have not been replicated (e.g., Spirito, 1996; Vernberg et al., 1996; Cheng and Chan, 2003).

By contrast, the HICUPS (How I Coped Under Pressure Scale; Program for Prevention Research, 1999) applies a theory-based approach, and has been more consistent in generating the same set of factors across studies (Ayers et al., 1996; Walker et al., 1997; Connor-

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Table 1
NYC public school students (grades 6–12) 6 months after September 11th: socio-demographic characteristics of the two sub-samples ($n = 4,564$).

	Sub-sample 1 (N = 2249)		Sub-sample 2 (N = 2315)	
	Unweighted sample size	Weighted percentage (SE)	Unweighted sample size	Weighted percentage (SE)
<i>Grade</i>				
6	367	18.5 (4.8)	368	18.1 (4.7)
7	302	14.1 (3.9)	307	14.1 (3.9)
8	272	12.3 (3.8)	290	12.9 (3.8)
9	339	14.0 (3.8)	361	14.6 (4.0)
10	293	12.8 (3.7)	308	12.7 (3.6)
11	345	15.7 (4.1)	349	14.9 (4.0)
12	331	12.7 (3.5)	332	12.8 (3.6)
<i>Gender</i>				
Male	1074	47.2 (4.1)	1125	47.0 (3.9)
Female	1175	52.8 (4.1)	1190	53.0 (3.9)
<i>Race/ethnicity</i>				
White	453	15.6 (3.9)	488	17.1 (4.3)
Black	517	27.2 (5.5)	527	27.4 (5.4)
Hispanic	750	39.5 (5.2)	772	38.2 (5.5)
Asian	437	13.0 (3.8)	440	13.1 (4.0)
Mixed/other	92	4.7 (1.5)	88	4.2 (1.0)

Smith et al., 2000). The HICUPS was developed through a detailed analysis of semi-structured interviews of children's coping behaviours. Eleven coping categories were generated, which were then used to develop a measure that produced four overall coping factors: active coping, distraction, avoidance, and support seeking. confirmatory factor analysis (CFA) was used to further verify the underlying structure of these data, indicating that the four-factor solution generated a superior fit compared to two-dimensional models. The four-factor model has been empirically validated in several samples of children (e.g., Sandler et al., 1994; Ayers et al., 1996) and has been commended in major coping literature reviews (Compas et al., 2001; Skinner et al., 2003).

It is also important to note that most instruments designed to measure coping strategies are lengthy, proving informative in laboratory settings but impractical for large-scale investigations

Table 2
YCITT factor structures.

HICUPS based structure (CFA)	Empirically derived structure (EFA)
Distraction Meditate, practice yoga, deep breathing, or aerobic sports Draw, paint, or write stories, poems, or compose music Watch TV, or read more than before*	Factor 1 Meditate, practice yoga, deep breathing, or aerobic sports Draw, paint, or write stories, poems, or compose music Do volunteer work* (Pray**)
Active Tell myself: 'Things will be better' Learn as much as possible about the terrorists Do volunteer work* Pray	Factor 2 Tell myself: 'Things will be better' Learn as much as possible about the terrorists Watch TV, or read more than before* Pray**
Support Seeking Talked to a relative or friend Talked to a professional	Factor 3 Talked to a relative or friend Talked to a professional
Avoidance Cry, scream, yell, or get angry Get into fights Skip school Avoid people Drink, smoke, stay out late	Factor 4 Cry, scream, yell, or get angry Get into fights Skip school Avoid people Drink, smoke, stay out late

*Items under different factors for Confirmatory/Exploratory.

**Item loading on two factors.

The item "keep to my regular routine at home and school" was not included in the analyses.

post-disaster, where assessment of coping is frequently only one component among many. In this context, the HICUPS can be considered a valuable measure, worthy of being employed as a basis for assessing a new, briefer, situation-specific, coping measure for youth.

1.1. The present study

This study is about a situation-specific brief measure of coping in children and adolescents, named YCITT: Youth Coping In Traumatic Times, which was used to assess the coping strategies employed by New York City (NYC) public school youth interviewed 6 months after the September 11 attacks (Hoven et al., 2002). Previous analyses of the data indicated that 28.6% of NYC public school students had one or more probable anxiety/depressive disorders (Hoven et al., 2005), indicating very high levels of distress.

The YCITT was based on a number of existing coping measures and concepts, including the HICUPS (Ayers et al., 1996), the ideas of Lazarus and Folkman (1984), and scales such as the Children's Social Coping Inventory (Mellor-Crummey, 1989) and the Child Stress Inventory (Wertlieb et al., 1987). The scale was part of a lengthy questionnaire assessing a wide range of factors presented by a number of scales, as brevity in assessment was critical. Our goal in this article is to examine if the structure of the responses to a brief youth coping measure (YCITT) is similar to that resulting from the administration of a lengthier, theoretically driven, and empirically tested (Sandler et al., 1994; Ayers et al., 1996) questionnaire, the HICUPS, which was also designed to measure situation-specific coping.

2. Methods

2.1. Study design and participants

The coping questions used in the present article were developed as a part of the New York City – Board of Education WTC Study (NYC-BOE-WTC Study) for children and adolescents in grades 4–12, aged 9 to 21 years (Hoven et al., 2005). The questionnaire used in the study was a self-report measure including, in addition to coping strategies, questions about psychiatric symptoms, September 11-related exposure, demographics and mental health service use. The total study sample consisted of 8236 children and adolescents in New York City public schools. To obtain sufficient representation of those highly exposed to the attacks, schools in specific areas of the city (e.g., the Ground-Zero area) were over-sampled (for details see Hoven et al., 2005). The study was approved by all appropriate

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