

Assessing Future Expectations of Low-Income Minority Young Men: Survival-Threats and Positive Expectations

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Abstract Future expectations, a subset of overall orientation, represent youths' most realistic appraisals of future outcomes, and has been demonstrated to be associated with a range of health risk behaviors and wellbeing. The current study extends previous measurement efforts to operationalize and measure future expectations by estimating a multidimensional model of future expectations encompassing both positive and survival-based expectations, and using longitudinal data to test the consistency of these constructs over time. The current work uses data from six waves of the Chicago Youth Development Study ($n = 338$), a sample of African American and Latino young men from low income neighborhoods in an urban center, to test a hypothesized multidimensional structure of future expectations across adolescence. Test retest confirmatory factor analyses from six waves of data covering the mean age range of 12–19 years reveal good model fit for the hypothesized multidimensional model of future expectations at each wave. Strong measurement invariance based on race/ethnicity is established for the multidimensional model. Implications for a latent construct approach

to future expectations with low-income racial/ethnic minority young men are discussed.

Keywords Future expectations · Psychometrics · Measurement equivalence · Adolescence · African American · Latino · Poverty · Males

Introduction

Threats to personal safety and survival constitute a significant public health concern for minority men (Redelings et al. 2010; Bassett 2015). Young minority men's expectation of survival-based threats are detrimental to their well-being and predict later life negative health, occupational, and educational outcomes and socioeconomic status (Duke et al. 2011; Nguyen et al. 2012). At the same time, positive expectations show promise as a protective factor for adolescents growing up in contexts of adversity (Wyman et al. 1993; Dubow et al. 2001). Therefore, the future expectations of young minority men may both hinder and promote future well-being. As such, it is imperative to define and test measures that accurately capture both dimensions of these expectations and their associations with important health outcomes.

Adolescence is a period of identity development and consolidation. During this time adolescents develop a sense of future orientation, or conceptualization of self in the future. Future orientation is demonstrated to be associated with a range of health risk behaviors and outcomes. Future expectations are one dimension of future orientation that is hypothesized to represent the most realistic beliefs youth hold in relation to their future possibility (Sipsma et al. 2012). A latent variable approach allows for a multidimensional operationalization of future expectation that taps

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into multiple salient components of the construct. Specifically, the inclusion of future safety and survival-related expectations is an especially important dimension to consider for adolescents who experience multiple forms of disadvantage. Minority young men residing in urban low-income neighborhoods report significantly greater expectation of threats to safety, including basic survival, compared to more affluent, White peers (Duke et al. 2009). Including these types of future expectations in addition to positive expectations that tap into multiple domains of life (e.g. interpersonal, happiness), may further understanding of how dimensions of this construct differentially impact risk behaviors and well-being outcomes.

Positive future expectations may serve as a resource to promote resiliency amongst adolescents growing up in contexts of adversity and to adaptively cope with adverse life experiences and obtain positive outcomes (Garmezy 1985, 1991; Rutter 1987; Masten 1989, 2011). Earlier studies have linked positive future expectations with increased resiliency in samples of youth growing up in poverty (Werner and Smith 1992). Wyman et al. (1993) investigated the correlates of positive future expectations with aspects of children's social and emotional adjustment among a sample of young urban adolescents who had experienced stressful life events. Cross-sectional analyses revealed significant associations between positive future expectations and affect regulation, self-esteem, perceived competence, and social-emotional and academic functioning. In longitudinal follow-up, positive future expectations positively predicted greater social-emotional functioning and higher internal locus of control 2–3 years later (Wyman et al. 1993). Further, a protective effect was observed, suggesting that young adolescents exposed to multiple forms of stress who also possessed a positive view of the future may interpret and react to stressful events differently than those without such an outlook. These findings underscore the potential of positive future expectations as a protective factor for youth growing up in environments where they are exposed to chronic stressors.

Extant literature demonstrates there may be differential effect of future expectations on risk behavior. In a study drawn from the National Longitudinal Survey of Youth, a latent class approach to modeling future expectations and sexual risk behavior found that classes of future expectations were uniquely associated with elevated risk. Group membership within the class reporting expectation of drinking and arrest in the next year were consistently at higher odds of engagement in sexual risk behavior (e.g. unsafe sex, number of sexual partners and age of first child) compared to the class with low delinquency expectations and high school engagement expectations (Sipsma et al. 2015). Other work has shown an association between low positive future expectations and substance use, as well as a

relationship between fear of early death and involvement in delinquent behaviors. It is possible that risk behaviors are differentially affected by separate aspects of future expectations.

In terms of substance use, self-medication theory, or experiential avoidance (Khantzian 1985, 1997), may underpin the relationship between increased alcohol use and decreased positive future expectations. A qualitative study of alcohol use among African American and Latino low-income youth found that adverse childhood events were linked with motivations to drink. Moreover, youth described a sense of hopelessness about the future and alcohol consumption as a means of coping with negative feelings (Rothman et al. 2010). Another study of cumulative stress and alcohol use among a diverse sample of urban young adults found that stressors from childhood through adolescence increased the odds of alcohol use. Alcohol use, in turn, instigated an increased sense of future hopelessness which in turn lead to increased use of alcohol and eventual dependency (Lloyd and Turner 2008).

In contrast, the relationship between future expectations, specifically those related to early death or safety-related fears, and delinquency may be explained by the theory of future discounting. For minority young men growing up in poverty, belief in early death or an increased sense of fatalism common. In ethnographic work, Hoffman (2004) found that African American and Latino young men growing up in Los Angeles and Boston expected to be shot, assaulted, or killed and their involvement in delinquency was related to managing these fear expectations. Future discounting has been used as an explanatory theory of youth violence; low future life expectancy leads to future discounting, leading to increased violence, which in turn reinforces low future life expectancy. This “feedback loop” is articulated especially in relation to living conditions characterized by structural disadvantage (Wilson and Daly 1997; Schechter and Francis 2010), resulting in a mutually-reinforcing, or cyclic, relationship between future expectations and delinquency.

Broadly, future orientation is an individual's orientation, or perspective towards, the future, however, there is no standard way of conceptualizing or measuring this construct. The conceptualization and measurement of future orientation has been divided into two distinct literatures: self-theory and personality psychology approaches. Self-theorists define future orientation in terms of “possible selves,” or self-relevant cognitions of enduring goals, aspirations, hopes, fears, and threats that function as a framework and guide for individual identity development (Markus and Nurius 1986). On the other hand, personality research conceptualizes future orientation as “time perspective,” a stable personality characteristic assessed by a typology of an individual's intrinsic orientation towards

time (Zimbardo and Boyd 1999). In this sense, time perspective differs from a possible selves approach to future orientation in that personality traits are considered intrinsic to the individual, whereas possible selves are developed through social cognitive processes that emerge through ongoing interactions between the individual and their social and physical environments (Prince 2013).

Measurement of possible selves varies widely by approach and across studies. Typically, measurement has relied on open-ended responses to prompts such as “Next year I expect to be...” or “Next year I want to avoid being...” Youth were instructed to write down expected selves, hoped for selves, feared selves, or any combination therein. In some studies youth were also instructed to describe strategies for attaining or avoiding specified expected, hoped for, or feared selves (Oyserman et al. 2004). Responses are generally categorized by content (e.g. academic aspirations, interpersonal relationships, or career expectations) and valence (positive vs. negative). Measurement focused on individually-specific content (e.g. “I expect to graduate from high school” or “I expect to drop out of school”) alongside the presence (or lack of) behavioral strategies to achieve hoped-for, expected or feared selves (e.g. “I will attend class and do my homework”). Possible selves are theorized to possess motivational and self-regulatory functions with three distinct components: valence of the contents of one’s possible selves; elaboration, including strategies for attaining positive or aspired-to future selves; and discrepancy between current and future selves. These aspects of possible selves are associated with a range of adolescent behaviors including substance use, depression, and school engagement/achievement outcomes (Aloise-Young et al. 2001; Oyserman et al. 2006).

The personality approach, in contrast, conceptualizes time perspective as a stable personality trait, where individuals display an intrinsic orientation towards time. For example, “present-oriented” individuals are hypothesized to be more responsive to experiences that lead to immediate gratification or pleasure whereas “future-oriented” individuals are more likely to engage in future planning and delayed gratification in favor of a longer-term goal (e.g. school completion). Among personality research, the most widely used measure of time perspective is the Zimbardo Time Perspective Inventory (ZTPI) (Zimbardo and Boyd 1999). Repeated exploratory and confirmatory factor analyses over a 5 year period on college age samples resulted in five factorially-distinct subscales (past-negative, past-positive, present-hedonistic, present-fatalistic and future) tapping into a typology of time perspectives, each with demonstrated acceptable psychometric properties (Zimbardo and Boyd 1999; Boyd and Zimbardo 2005).

A strength of the ZPTI is its multidimensional approach to conceptualizing and measuring future orientation. It is one of the few measures of future orientation that is currently used in research with adolescents. For example, in a cross-sectional study of time perspective and substance use among middle-school aged youth, present time perspective (hedonism and fatalism) was positively associated with substance use whereas future time perspective was inversely associated with substance use (Wills et al. 2001). While there are many strengths of this measure, one limitation is that it does not examine negative future views (Worrell and Mello 2007). This is particularly important for youth from at-risk communities who are more likely to experience hardship and internalize a bleak outlook toward the future. Further attention to measurement of both positive and negative future outlooks within the developmental period of adolescence could strengthen the conceptual and predictive validity of the approach.

Another approach to the measurement of future expectations was developed by Wyman et al. (1992, 1993). These authors used data from the Rochester Child Resilience Study (RCRS) to link future expectations to psychosocial health and functioning in elementary school children from inner-city schools. Work et al. (1990) tested the psychometric properties the Future expectations scale on a diverse sub-sample of children from the RCRS whose parent reported four or more stressful life events. Although the measure included both positive and negative future expectations, the authors scored the measure as unidimensional by combining the positive and negative items into a single Future Expectations score.

The Future Expectations Questionnaire used in the RCRS was adapted and expanded for use in the Chicago Youth Development Study (CYDS), a prospective longitudinal study of African American and Latino young men (Tolan 1990). The expanded questionnaire differs from Wyman et al. (1992, 1993) in several key ways, specifically in the inclusion of two items tapping into expected threats to future safety. Although the expanded measure contains both positive and negative future expectation items, previous studies using the measure treated the construct as unidimensional. To our knowledge, no psychometric work has been conducted on the measure regarding possible multidimensionality of the construct nor on whether the measure assessed future orientation of youth throughout development or by racial/ethnic background.

The current study takes a latent construct approach to future expectations to test the multidimensionality of two theorized factors of future expectations: positive future expectations and expected threats to future safety among African American and Latino young men. The sample provides a unique opportunity to examine the structure of future expectations during adolescence and the transition to

young adulthood in a population that experiences increased risks while often being under-represented in longitudinal studies (Gorman-Smith et al. 2000). Due to the pernicious effect of entrenched racism in the United States, African American and Latino young men experience convergent and cumulative risks that disproportionately relegate them to poverty and significantly limit their life possibilities (Ginwright and Cammarota 2002). Minority young men are significantly more likely to believe they will not live to old age compared to White, middle-income youth (Borowsky et al. 2009). Therefore, it is imperative to test a multidimensional model of future expectations among this population that accounts for both expected threats to safety and positive future expectations. We extend previous research to examine future expectations as a multidimensional latent construct using a community-based sample of African American and Latino adolescents growing up in low-income neighborhoods. The study also leverages longitudinal data to measure psychometric properties and consistency of the multidimensional future expectations constructs over time. Accordingly the three aims of this study are: (1) to test the hypothesized multidimensional nature of positive expectations and expected threats to safety as distinct constructs; (2) to test the reliability of the hypothesized two factor model of future expectations across six time points from early adolescence to young adulthood; and (3) to establish measurement equivalence between African American and Latino young men.

Method

Participants

Data come from the Chicago Youth Development Study, a longitudinal investigation of risk for school failure, anti-social behavior and violence among Latino and African American inner city young men. Beginning in 1991, the Chicago Youth Development Study collected eleven waves of data spanning early adolescence to young adulthood. Study participants were African American (53.7 %) or Latino (42.7 %) young men living in economically distressed inner-city neighborhoods in Chicago at the onset of the study. At the study onset, 62 % of study participants lived in single-parent homes, nearly half (47.6 %) of the families had a total income below \$10,000 per year, and nearly three-quarters (73.5 %) had incomes below \$20,000 (Gorman-Smith and Tolan 1998; Gorman-Smith et al. 2000). After wave 1, retention remained over 90 % at each succeeding wave. The current study is based on data from waves 1 through 6. Sample size by wave as follows: wave 1 N = 338, wave 2 N = 286, wave 3 N = 248, wave 4 N = 254, wave 5 N = 259 and wave 6 N = 228. At wave

1, participants ranged in age from 10 to 15 years with a mean age of 12.33. Subsequent waves were collected when participants were, on average 13, 14, 15, 18 and 19 years of age.

Procedure

Participants were originally recruited from 5th to 7th grade classrooms representing seventeen Chicago public schools. After obtaining parental/guardian consent, participants were screened for risk of aggression and other externalizing behavior using the Teacher Report Form and the parental/guardian report of the Child Behavior Checklist. Participants were then purposefully sampled so that half the sample ranked in the 90th percentile or higher for report of aggressive behavior. The remaining half were randomly selected from participants who ranked below the 90th percentile (Gorman-Smith et al. 1996, 2000; Henry et al. 2001). Previous research has addressed participant attrition. Gorman-Smith et al. (2000) conducted over twenty comparisons between non-continuing and continuing participants and found no significant differences on a range of measures of delinquency and anti-social behavior, with the exception of teacher report of aggression at wave 1, with continuing participants having slightly lower ratings of aggression. The difference accounted for 2 % of the variance in teacher aggression ratings and therefore little bias in attrition on these characteristics is presumed. For the purposes of this study, we conducted comparisons between non-continuing and continuing participants and found no significant differences on wave 1 future expectations among those who were and were not missing data at later waves.

Measures

Items were taken from the Future Expectations Questionnaire (Tolan 1990), which was based on the Children's Future Expectations scale (Wyman et al. 1993). The measure was administered at each wave of the study. The new measure was based on Wyman's and included two new items ("I will be alive and well" and "I will be safe and out of danger") and small word changes.

Youth were prompted: "Think about the future; where and how you'll be in 5 years. Thinking about 5 years from now, how well do you think each of these things fit you...When I think about the future..." This prompt was followed by seven positively worded items (e.g. "I will have a happy life") and two negatively worded items ("I will be able to stay safe and out of danger" and "I will be alive and well"). Responses were rated a 5-point Likert-type scale (1 = *not at all likely* 2 = *Maybe likely but probably not*, 3 = *Could go either way*, 4 = *Very likely*,

not absolute, 5 = definitely will). Table 1 contains frequencies, means, and standard deviations of the items for each wave.

Data Analyses

We begin with a preliminary analysis of the psychometric properties of the future expectation measure. Common approaches to determine instrument reliability include internal consistency and test–retest. The test–retest method involves multiple administrations of the same instrument to the same group of people to assess consistency and reliability. One strength of this approach is the use of the same group of participants, which theoretically eliminates potential confounding due to heterogeneous sampling (Hendrickson et al. 1993). To determine construct item reliability, inter-item correlations and Cronbach's α were tested using SPSS 15.0.

Test–retest confirmatory factor analysis were conducted to test the theorized multidimensionality of the future expectations construct over time. In this approach, theory guides the a priori specification of a model including both the number of factors and their correspondence with specific indicators (individual items). Confirmatory factor analyses were conducted on wave 1 of the data, and then re-tested for consistency at waves 2–6. Full information maximum likelihood (FIML) estimation was used to account for missing data (Kline 2011) in Mplus. FIML has been demonstrated to appropriately handle data that is missing at random (Enders 2010). We hypothesized a two factor model consisting of “Positive Future Expectations” and “Threats to Future Safety”. Due to the nature of the response categories, data were treated as ordered categorical in the confirmatory factor models. Non-normality was addressed using the weighted least squares likelihood (WLSMV) estimator in Mplus. Two indicators “I will be alive and well” and “I will be safe and out of danger,” were set to load onto the first hypothesized factor “Expected Threats to Future Safety.” The remaining six items, including “I am sure that I can handle work or school,” “I think I will have friends and people that care about me,” “I will have a happy life,” “My life will be interesting,” and “My parents will be proud of me,” were set-up to load onto the second hypothesized factor “Positive Future Expectations.” Items were not allowed to cross-load.

When the two-factor model is specified, a correlation between the two factors was estimated. The between-factor correlation is one measure of discriminant validity, or the degree to which each factors is distinct although related to the other. Moderate correlations between the two factors may indicate distinct factors whereas high correlations would indicate a single, common factor and weaken the study hypothesis of multidimensionality (Kline 2011).

Multidimensionality of the measure can be tested by specifying a one-factor model, whereby all eight indicators were set-up to load onto a single, one-dimensional latent construct. If the overall model fit indices for the two-factor solution fit the data better than the one-dimensional model, support for the theorized model would be evidenced. In addition to overall model fit, factor loadings for each item on its theorized factor must be assessed. Strong, statistically significant loadings (of 0.40 or higher) of the item on the factor indicate good factor structure.

We used a variety of test statistics to assess model fit. Chi square statistics tested the overall fit of the hypothesized (or specified) model against the covariance matrix assuming no relationships between variables. A non-significant Chi square is desired; however, as this statistic is sensitive to sample size, and a significant value does not necessarily mean that the overall model fit is poor (Hu and Bentler 1999). In order to assess the sufficiency of model fit we used multiple fit statistics. The Tucker–Lewis Fit Index (TLI) is a relative fit index that tests the specified model against the base-line model. This fit statistic is positively valued so that higher values indicate better model fit and a value of >0.95 is generally considered acceptable (Hu and Bentler 1999). The comparative fit index (CFI) is an incremental fit index that measures the relative improvement of the specified model against the base-line model. Like the TLI, the CFI is considered to be a good fit when >0.95 (Hu and Bentler 1999). The root mean square error of approximation (RMSEA) is scaled from 0 to 1 with higher scores equated “worse” model fit. The RMSEA measures the discrepancy between the true population model and the hypothesized model and is considered to indicate good fit when <0.05 . However, the RMSEA is sensitive to both sample size and complexity; as these two factors increase, so do degrees of freedom in the model which may result in smaller RMSEA. Thus, simple models, where fewer parameters are specified may have higher (or “worse”) RMSEA scores. Overall strong model fit, as determined the above indices, would support the hypothesized two factor model. Additionally, the theoretical basis for confirmatory factor analyses in general must be taken into consideration in terms of model evaluation (Schermele-Engel et al. 2003; Weston and Gore 2006).

Finally, once confirmatory models at each wave were established as well-fitting, invariance testing was conducted on wave 2 of the data to examine measurement equivalence between African American and Latino youth participants. Cross-cultural subgroup invariance is important to establish to ensure accurate interpretation of research findings across diverse populations, with implications for translation to clinical practice. With regards to ethnic group, in particular, there is evidence that measures developed for or using one ethnic group do not always

Table 1 Descriptive statistics and response rates of the future expectations scale waves 1–6

Item	Response category (N and valid percent)					Mean (SD)
	Not at all	May be likely but probably not	Could go either way	Very likely, not absolute	Definitely will	
Wave 1 (N = 338)						
I will be able to stay safe and out of danger	17 (5 %)	56 (16.6 %)	91 (26.9 %)	116 (34.4 %)	58 (17.2 %)	3.42 (1.11)
I will be alive and well	5 (1.5 %)	44 (13 %)	80 (23.7 %)	120 (35.5 %)	89 (26.3 %)	3.72 (1.04)
I am sure that I can handle work or school	1 (0.3 %)	36 (10.7 %)	53 (15.7 %)	138 (40.8 %)	110 (32.5 %)	3.94 (0.97)
I think I will have friends and people that care about me	2 (0.6 %)	17 (5 %)	25 (7.4 %)	127 (37.6 %)	167 (49.4 %)	4.30 (0.86)
I will have a happy life	1 (0.3 %)	15 (4.4 %)	52 (15.4 %)	143 (42.3 %)	127 (37.6 %)	4.12 (0.85)
My life will be interesting	1 (0.3 %)	27 (8 %)	52 (15.4 %)	140 (41.4 %)	118 (34.9 %)	4.03 (0.92)
My parents will be proud of me	0 (0 %)	12 (3.6 %)	31 (9.2 %)	103 (30.5 %)	192 (56.8 %)	4.41 (0.80)
Wave 2 (N = 286)						
I will be able to stay safe and out of danger	11 (3.8 %)	54 (18.9 %)	74 (25.9 %)	99 (34.6 %)	48 (16.8 %)	3.42 (1.09)
I will be alive and well	3 (1 %)	29 (10.1 %)	91 (31.8 %)	91 (31.8 %)	72 (25.2 %)	3.70 (0.99)
I am sure that I can handle work or school	5 (1.7 %)	25 (8.7 %)	37 (12.9 %)	131 (45.8 %)	88 (30.8 %)	4.00 (0.97)
I think I will have friends and people that care about me	1 (0.3 %)	12 (4.2 %)	21 (7.3 %)	119 (41.6 %)	133 (46.5 %)	4.30 (0.81)
I will have a happy life	1 (0.3 %)	17 (5.9 %)	52 (18.2 %)	117 (40.9 %)	99 (34.6 %)	4.04 (0.89)
My life will be interesting	0 (0 %)	14 (4.9 %)	41 (14.3 %)	124 (43.4 %)	107 (37.4 %)	4.13 (0.84)
My parents will be proud of me	0 (0 %)	9 (3.1 %)	19 (6.6 %)	97 (33.9 %)	161 (56.3 %)	4.43 (0.75)
Wave 3 (N = 248)						
I will be able to stay safe and out of danger	10 (4 %)	30 (12.1 %)	90 (36.3 %)	92 (37.1 %)	26 (10.5 %)	3.38 (0.97)
I will be alive and well	5 (2 %)	32 (12.9 %)	83 (33.5 %)	78 (31.5 %)	50 (20.2 %)	3.55 (1.02)
I am sure that I can handle work or school	2 (0.8 %)	17 (6.9 %)	35 (14.1 %)	125 (50.4 %)	69 (27.8 %)	4.01 (0.88)
I think I will have friends and people that care about me	1 (0.4 %)	13 (5.2 %)	26 (10.5 %)	93 (37.5 %)	115 (46.4 %)	4.24 (0.87)
I will have a happy life	1 (0.4 %)	9 (3.6 %)	52 (21 %)	98 (39.5 %)	88 (35.5 %)	4.06 (0.86)
My life will be interesting	2 (0.8 %)	10 (4 %)	38 (15.3 %)	105 (42.3 %)	93 (37.5 %)	4.12 (0.87)
My parents will be proud of me	2 (0.8 %)	5 (2 %)	30 (12.1 %)	81 (32.7 %)	130 (52.4 %)	4.34 (0.83)
Wave 4 (N = 254)						
I will be able to stay safe and out of danger	12 (4.7 %)	20 (7.9 %)	90 (35.4 %)	80 (31.5 %)	52 (20.5 %)	3.55 (1.05)
I will be alive and well	7 (2.8 %)	23 (9.1 %)	87 (34.3 %)	85 (33.5 %)	52 (20.5 %)	3.61 (1.00)
I am sure that I can handle work or school	2 (0.8 %)	18 (7.1 %)	37 (14.6 %)	115 (45.3 %)	82 (32.3 %)	4.01 (0.91)
I think I will have friends and people that care about me	2 (0.8 %)	8 (3.1 %)	20 (7.9 %)	89 (35 %)	135 (53.1 %)	4.37 (0.82)
I will have a happy life	2 (0.8 %)	14 (5.5 %)	51 (20.1 %)	93 (36.6 %)	94 (37 %)	4.04 (0.93)
My life will be interesting	1 (0.4 %)	9 (3.5 %)	40 (15.7 %)	96 (37.8 %)	108 (42.5 %)	4.19 (0.85)
My parents will be proud of me	1 (0.4 %)	10 (3.9 %)	34 (13.4 %)	71 (28 %)	138 (54.3 %)	4.32 (0.88)
Wave 5 (N = 259)						
I will be able to stay safe and out of danger	3 (1.2 %)	17 (6.6 %)	79 (30.5 %)	96 (37.1 %)	64 (24.7 %)	3.78 (0.93)

Table 1 continued

Item	Response category (N and valid percent)					Mean (SD)
	Not at all	May be likely but probably not	Could go either way	Very likely, not absolute	Definitely will	
I will be alive and well	0 (0 %)	13 (5 %)	75 (29 %)	103 (39.8 %)	68 (26.3 %)	3.87 (0.86)
I am sure that I can handle work or school	5 (1.9 %)	4 (1.5 %)	34 (13.1 %)	123 (47.5 %)	93 (35.9 %)	4.14 (0.84)
I think I will have friends and people that care about me	2 (0.8 %)	5 (1.9 %)	17 (6.6 %)	95 (36.7 %)	140 (54.1 %)	4.41 (0.76)
I will have a happy life	1 (0.4 %)	6 (2.3 %)	45 (17.4 %)	102 (39.4 %)	105 (40.5 %)	4.17 (0.82)
My life will be interesting	2 (0.8 %)	3 (1.2 %)	27 (14.3 %)	97 (37.5 %)	120 (46.3 %)	4.27 (0.81)
My parents will be proud of me	2 (0.8 %)	7 (2.7 %)	26 (10 %)	92 (35.5 %)	132 (51 %)	4.33 (0.82)
Wave 6 (N = 228)						
I will be able to stay safe and out of danger	4 (1.8 %)	9 (3.9 %)	38 (16.7 %)	97 (42.5 %)	80 (35.1 %)	4.05 (0.91)
I will be alive and well	1 (0.4 %)	5 (2.2 %)	42 (18.4 %)	83 (36.4 %)	97 (42.5 %)	4.18 (0.84)
I am sure that I can handle work or school	2 (0.9 %)	1 (0.4 %)	10 (4.4 %)	90 (39.5 %)	125 (54.8 %)	4.47 (0.69)
I think I will have friends and people that care about me	4 (1.8 %)	2 (0.9 %)	10 (4.4 %)	48 (21.2 %)	164 (71.9 %)	4.61 (0.77)
I will have a happy life	1 (0.4 %)	3 (1.3 %)	18 (7.9 %)	67 (29.4 %)	139 (61 %)	4.49 (0.74)
My life will be interesting	1 (0.4 %)	2 (0.9 %)	14 (6.1 %)	66 (28.9 %)	145 (63.6 %)	4.54 (0.69)
My parents will be proud of me	1 (0.4 %)	3 (1.3 %)	12 (5.3 %)	46 (20.2 %)	166 (72.8 %)	4.64 (0.69)

perform the same way for other groups (Harachi et al. 2006; Mano et al. 2009). The first goal was to establish functional invariance, also referred to as configural invariance, to establish the factor loadings, fit indices and inter-correlations between latent constructs are operating similarly for each subgroup (Vandenberg and Lance 2000).

Weak factorial invariance is considered to be the baseline minimum of construct invariance when examining covariance relations (Little et al. 2007). To determine weak factorial invariance, the freely estimated model assumed configural invariance, meaning that no parameters were constrained by ethnic group. In this first step, a fully unconstrained multi-group confirmatory factor analysis is run whereby all model parameters were allowed to be estimated in the two groups without any equality constraints, thus allowing for factor loadings, model fit indices, and inter-correlations between latent factors for each group (in this case African American and Latino participants) to differ. Next, the constrained model is run whereby factor loadings were constrained to equal to test for statistical differences in the magnitude of parameters, to establish metric invariance. If there are no significant difference in the parameters of the model between groups configural invariance is established (Harachi et al. 2006). Finally, the thresholds of the items in the model are constrained to equal across groups to test scalar invariance, or whether

there are significant differences in the mean levels of each item by racial group.

Results

Table 1 contains the frequencies, means and standard deviations for each item in the Future Expectations Questionnaire at each wave. Means were high across waves (range 3.42–4.41). Response scales differed slightly by each wave. At the waves 1 and 2, no participant endorsed a “1” (“Not likely at all”) for the item “My parents will be proud of me.” In addition, at wave 2, no participant endorsed a “1” for the item “My life will be interesting.” Response distribution improved through each wave (see Table 1).

Internal Consistency

Table 2 contains inter-item correlations at wave 1; as expected all items are significantly positively associated with $r_s = 0.14\text{--}0.42$. Cronbach’s α for all future expectations items at wave 1 was 0.73 indicating satisfactory internal consistency. Cronbach’s α range for waves 2 through 6 ranged from 0.81 to 0.89 indicating strong internal consistency.

Table 2 Wave 1 correlations amongst future expectations scale items

Scale item	1. Safe and out of danger	2. Alive and well	3. Handle school or work	4. Friends and people that care	5. Happy life	6. Interesting life	7. Parents proud
1. I will be able to stay safe and out of danger	1						
2. I will be alive and well	0.40***	1					
3. I am sure that I can handle work or school	0.22***	0.25***	1				
4. I think I will have friends and people that care about me	0.15**	0.15**	0.21***	1			
5. I will have a happy life	0.29*	0.36**	0.27**	0.23***	1		
6. My life will be interesting	0.26***	0.25***	0.25***	0.16**	0.45***	1	
7. My parents will be proud of me	0.23**	0.34***	0.28***	0.28***	0.38**	0.42***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Confirmatory Factor Analysis

We first fitted a single-factor model using wave 1 data where all the items were set to load onto a single latent variable to test a one dimensional model. The model fit was adequate ($\chi^2 = 56.06$ (14), $p < 0.000$, CFI = 0.96, TLI = 0.93, RMSEA = 0.09) and individual standardized item loadings varied 0.45–0.72. Next, a two-factor model was specified where the positive items were set to load on the “Positive Future Expectations” factor and the two negative items on the “Threats to Safety” factor. The two factors were allowed to inter-correlate. One item (“I am sure I can handle the problems that might come up”) was theorized to load onto the second factor “Positive Future Expectations.” However, this item cross-loaded onto the first factor “Threats to Safety” at subsequent waves and was dropped from all subsequent analyses.

Next, we estimated a multidimensional model, again using wave 1 data, where each item was only allowed to load on its theorized factor. In the measurement model for wave 1, all factor loadings were acceptable, ranging from 0.46 to 0.74 (for standardized and unstandardized factor loadings, see Table 3) and all loaded significantly ($p < 0.000$) on the appropriate theorized construct. Fit indices indicated that the model fit the data well. The χ^2 was non-significant (25.37 (13), $p = 0.21$) indicating good model fit of the hypothesized two-factor model. The comparative fit index was (CFI) = 0.99, the Tucker–Lewis fit index (TLI) = 0.98, and the RMSEA = 0.05, indicating overall strong model fit (Hu and Bentler 1999). Between-factor correlation was 0.73 indicating significant overlap between factors but also adequate discriminant validity as a little more than 50 % of the variability is non-overlapping (Kline 2011) (see Fig. 1). When the two-dimensional model was compared against the one dimensional measurement model fit indices (Chi square statistic, CFI, TLI, and RMSEA) indicated that the two dimensional model fit

the data best. Model fit indices from the one dimensional measurement model were as follows: $\chi^2 = 56.06$ (14) $p < 0.000$, RMSEA = 0.09, CFI = 0.96, TLI = 0.93.

In order to confirm the factor structure, the two-factor measurement model was then replicated at waves 2 through 6. Standardized factors loading, unstandardized loadings, standard errors and model fit indicators for each wave are shown in Table 3. For waves 2–6, factor loadings were high and significant ($p < 0.000$) and ranged from 0.56 to 1.00. The two factor model was tested against the one dimensional model across all waves of data. Model fit indices for the two factor model were consistently better fitting of the data than the one factor model (2 factor model Chi square range across waves = 18.87–52.78) across all waves. The overall range for the fit indices across waves were as follows: comparative fit index (CFI) = 0.97–0.10, the Tucker–Lewis fit index (TLI) = 0.95–0.98, and the RMSEA = 0.04–0.01. Overall, model fit indices indicate good fit between the model and the observed data across time, however, inter-factor correlations at waves 4 and 6 were high (0.80 at both waves). No post hoc modifications were indicated from the analysis.

Test–Retest Reliability

Next, we estimated a model where positive and negative future expectations were modeled at waves 1–6, in order to model continuity in construct across development. Covariances were modeled between positive future expectations and threats to safety at each wave, and between like factors (i.e., positive future expectations at all waves) across waves. Covariances across adjacent waves were always significant, but threats to safety at wave 1 did not correlate with threats at wave 3, and threats to safety at wave 5 did not correlate with threats at wave 6. Overall, the positive future expectations latent construct demonstrated stronger correlational patterns across the six waves (see Table 4).

Table 3 Standardized factor solutions by confirmatory factor analysis for the two-factor future expectations models waves 1–6

Scale items		Standardized factor loadings					
		Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
Factor 1: threats to safety							
I will be able to stay safe and out of danger		0.61	0.76	0.80	0.82	0.87	0.85
I will be alive and well		0.74	0.85	0.83	0.86	0.84	0.89
Factor 2: positive expectations							
I am sure I can handle work or school		0.50	0.56	0.60	0.60	0.57	0.73
I will have friends and people that care about me		0.46	0.66	0.62	0.76	0.67	0.79
I will have a happy life		0.74	0.79	0.83	0.87	0.90	1.00
My life will be interesting		0.67	0.79	0.90	0.79	0.85	0.83
My parents will be proud of me		0.73	0.75	0.73	0.85	0.85	0.87
Model descriptors							
χ^2, df, p value	25.37 (13), $p = 0.21$	28.93 (13), $p = 0.01$	18.87 (13), $p = 0.13$	78.40 (13), $p = 0.000$	39.75 (13), $p = 0.000$	52.78 (13), $p = 0.000$	
CFI	0.99	0.99	0.99	0.97	0.99	0.98	
TLI	0.98	0.98	0.99	0.95	0.98	0.98	
RMSEA (90 % CI)	0.05 (0.02–0.84)	0.07 (0.03–0.10)	0.04 (0.00–0.08)	0.14 (0.11–0.17)	0.09 (0.06–0.12)	0.12 (0.08–0.15)	
Inter-factor correlation	0.73	0.68	0.69	0.80	0.72	0.87	

Fig. 1 Wave 1 two factor solution future expectations measurement model obtained with the observed data. Chi square = 25.37, *df* = 13, *p* = 0.21

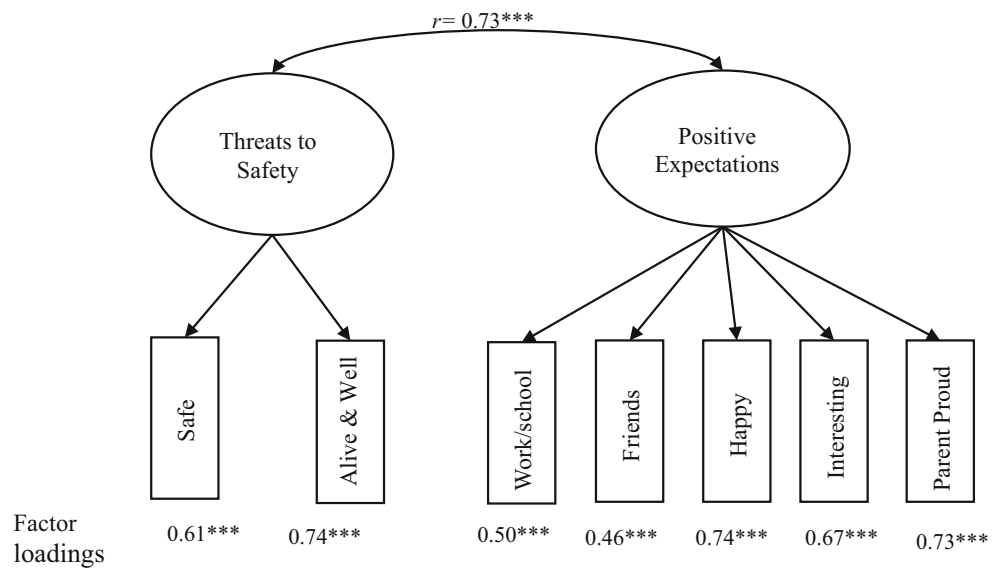


Table 4 Correlations between latent factors positive expectations and expected threats to future safety waves 1–6

Latent factor	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. W1 positive expectations	1											
2. W1 threats to safety	0.71***	1										
3. W2 positive expectations	0.31***	0.19*	1									
4. W2 threats to safety	0.34***	0.36***	0.68***	1								
5. W3 positive expectations	0.42***	0.21*	0.41***	0.26***	1							
6. W3 threats to safety	0.20**	0.17	0.26**	0.17*	0.69***	1						
7. W4 positive expectations	0.17*	0.13	0.38***	0.11	0.55***	0.48***	1					
8. W4 threats to safety	0.14	0.35***	0.15	0.19*	0.37***	0.55***	0.80***	1				
9. W5 positive expectations	0.21**	0.10	0.30***	0.13	0.32***	0.15*	0.33***	0.12	1			
10. W5 threats to safety	0.15	0.21*	0.28***	0.16*	0.23**	0.32***	0.29***	0.22**	0.72***	1		
11. W6 positive expectations	0.24**	0.14	0.26**	0.08	0.15*	0.15*	0.31***	0.17*	0.28***	0.28**	1	
12. W6 threats to safety	0.14	0.10	0.25**	0.14	0.19	0.21**	0.31***	0.33***	0.10	0.32***	0.86***	1

* *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001

Measurement Equivalence Testing Across Ethnic Groups

Invariance testing was conducted to determine that the two-factor structure of the Future Expectation Measure fit the data equally well for African American and Latino participants. Invariance testing was conducted at wave 2 of the study. Although there were no significant differences in attrition between participants based on future expectations, there were approximately one hundred participants who never returned after wave 1. Wave 2 of the study thus

represents the majority of the sample that continued to participate in additional waves of data collection. Fit indices for the configural model indicated good fit: $\chi^2 = 108.87$ (52) *p* < 0.000, RMSEA = 0.088, CFI = 0.96, TLI = 0.95. We found no significant differences in the magnitude, or latent factor means, of the two dimensional model by group membership which established measurement invariance. Model fit indices for the fully constrained model indicated good model fit: $\chi^2 = 124.98$ (80), *p* = 0.001, RMSEA = 0.06, CFI = 0.97, TLI = 0.97.

Finally, there was no significant detriment of model fit when conducting the Chi square DIFFTEST in Mplus using the Satorra Bentler Chi square correction for WLSMV ($\chi^2 = 27.65$ (28), $p = 0.48$), thus indicating strong model invariance by race.

Discussion

We investigated the psychometric properties of the Future Expectations Questionnaire using longitudinal data from racial minority young men living in high risk neighborhoods. Conceptual and measurement work in this area is varied; with few studies taking a multidimensional approach or considering the stability of these constructs over time. However, research with at-risk adolescent groups indicate that both positive expectations and threats to safety are important for youth health and well-being outcomes. This study establishes support for the multidimensional nature of future expectations from early adolescence through young adulthood. Across six time points (mean ages 12–19 years), test–retest confirmatory factor analyses support a two factor structure of “Positive Future Expectations” and “Threats to Safety.” These findings suggest that “positive” and “negative” future expectations are not simply opposite ends of the spectrum of a single construct, rather, there are conceptually distinct beliefs at play that may, in turn, differentially effect risk behavior and health outcomes for young people.

Of particular importance are that findings support the factor reflecting young men’s expectations to encounter threats to personal safety and survival within a relatively short time frame of 5 years. The importance of this dimension of future expectations links up with research on truncated life expectancy showing that one in seven youth believe they have a 50/50 change of living to age 35 (Borowsky et al. 2009). Further, belief in premature death is more prevalent in males, racial and ethnic minorities, urban-dwelling youth, and youth who receive public assistance (Duke et al. 2009). Thus, tapping into young men’s expectation to face threats to their safety and lives is a critical dimension of future expectations to capture.

The added dimension of expected threats to safety is relevant to this group of young men who may face greater exposure to neighborhood and community violence. For example, one study of African American eighth grade students found that the combination of exposure to community violence and daily hassles, including experiencing racism, was significantly associated with both internalizing and externalizing behaviors (Li et al. 2007). Chronic exposure to external threats and hassles may in turn affect appraisals of the future. It is also possible that at-risk youth may experience both positive future expectations alongside

high threats to safety; these two dimensions need not be mutually exclusive. It is possible that these components of future expectations may influence health risk behaviors in different ways, future research should attend to examining differential impact of these factors on youth risk behavior.

Next, attention to between-group differences in psychometric testing is an important contribution of this research. Scholars argue for more purposeful attention especially to racial or ethnic group differences in measurement work with adolescents (Harachi, et al. 2006; Mano et al. 2009). The idea that measures are “tapping in” to the same underlying construct for diverse adolescent groups is an untested assumption; recent research examines how significant group memberships such as race or ethnicity may affect measurement equivalence (e.g. Rosay et al. 2000). In this study, strong measurement invariance was established for the two-factor model of future expectations; no significant differences in the structure or magnitude of this model were detected. Thus, positive future expectations and expected threats to future safety is representative of the underlying structure of future expectations for both African American and Latino young men in this sample. Taken together, these findings hold promise for future research attending to the impact of differential aspects of future expectations on safety and well-being outcomes for racial/ethnic minority young men residing in urban centers.

Despite the promising implications of this research, limitations remain. Future studies should examine the degree of overlap between the Future Expectations Questionnaire and other related measures. First, studies should continue to examine other domains of specific future expectations, including academic, interpersonal, and career. Second, as gender plays a significant role in shaping how a young person views his or her future possibilities, examination of the Future Expectations Measure will need to be expanded to include girls and women. For instance, gender differences have been found in adolescent future orientation with girls reporting more future fears in the interpersonal domain (e.g. getting divorced, being alone, not having children) than their male counterparts (Anthis et al. 2004; Knox et al. 2000). Other research has reported increased hopelessness, higher expectations of early death, and lower positive expectations among males (Bolland 2003; Mello and Swanson 2007; Duke et al. 2009). Third, testing the two-factor structure of the measurement model on other racial/ethnic groups is warranted as previous studies have found differences future orientation by racial or ethnic group membership (Kao 2000; Yowell 2002). Fourth, in later waves, the multidimensionality of future expectations as currently measured weakens. At waves 4 and 6, the inter-factor correlation is high (0.80). This may indicate a one dimensional future expectations construct in

later adolescence, or, it may reflect the need to include other indicators of future expectations as young men approach emerging adulthood. It is possible that other life domains pertaining to future expectations may be more salient during this developmental period. Finally, as currently measured, only two indicators reflect the “Safety Threats” domain of future expectations. Measurement of the construct could be bolstered through the addition of more indicators.

In conclusion, adolescent future orientation, including expectations, is a promising area of research connected to goal-setting, motivation, and behavioral decision making across a range of important indicators of well-being. This research advances understanding of the structure of future expectations longitudinally, and supports a multidimensional approach to future expectations. The findings suggest that both positive expectations and expected threats to safety and survival are salient for low-income racial minority young men. It is possible that these dimensions of future expectations may influence behavior and subsequent health and wellness outcomes for youth in different ways. For example, do youth with robust positive future expectations exhibit greater resiliency? Do youth with heightened expected threats to future safety exhibit greater likelihood of engaging in risky behaviors? Furthermore, does a multidimensional approach to assessing future expectations strengthen the predictive power of the construct in determining important indicators of adolescent well-being? As a potentially mutable resource with the ability to impact a wide range of adolescent behaviors and enhance healthy development, future orientation is especially promising as a component of prevention or intervention efforts with marginalized youth. Understanding the differential impacts of these dimensions of future expectations in relation to risk behavior could be especially beneficial for youth who exhibit negative, or blunted, future expectations, as they may benefit the most from interventions designed to bolster this aspect of identity.

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