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THE RELATIONSHIP BETWEEN
PERCEIVED DISCRIMINATION AND HOPE
FOR THE FUTURE, GLOBAL SELF WORTH
AND ACADEMIC COMPETENCE: IN A
MULTI-RACIAL/ETHNIC, LOW INCOME
SAMPLE OF SCHOOL AGE CHILDREN

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By Grace E. Quattrocki

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The Relationship Between Perceived Discrimination and Hope for the Future, Global Self-Worth and Academic Competence: In a Multi-Racial/Ethnic Low Income Sample of School Age Childre

For the degree of Master of Public Health

Is approved by the final examining committee:

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**THE RELATIONSHIP BETWEEN PERCEIVED DISCRIMINATION AND HOPE FOR
THE FUTURE, GLOBAL SELF WORTH AND ACADEMIC COMPETENCE:
IN A MULTI-RACIAL/ETHNIC, LOW INCOME SAMPLE OF SCHOOL AGE
CHILDREN**

A Thesis

Submitted to the Faculty

of

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by

Grace E Quattrocki

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of

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ABSTRACT

Quattrocki, Grace. M.P.H., Purdue University, May, 2014. The Relationship Between Perceived Discrimination, Hope for the Future, Global Self Worth, and Academic Competence: In a Multi-Racial/Ethnic, Low Income Sample of School Age Children. Major Professor: Haslyn Hunte.

Objective: To examine the extent to which a change in perceived interpersonal discrimination was associated with a change in the levels of hope for the future, global self-worth and perceived academic competence among a multiracial sample of adolescents attending a four-week, summer positive youth development program. Method: We first estimated means with standard errors of continuous variables and percentages within categorical variables in our total sample, and between those returning to PALS and those who were new to PALS. We then examined the correlation between perceived interpersonal racial/ethnic discrimination and the three outcome variables at the beginning and end of the program. Finally, a multivariate Ordinary Least Squares (OLS) regression was conducted to assess the relationship between discrimination and hope for the future, global self-worth and perceived academic competence. Data was obtained from the 2013 Purdue Athletes Life Success program, a sample of 372 8-14 year old adolescents. Dependent variables included hope for the future, global self-worth, and perceived academic competence. Results: The students who were new to PALS and reported an increase in discrimination, experienced more negative changes in hope for the future over the course of the program ($\beta = -0.43$, $p < 0.05$) compared to the low stable group. In regards to global self-worth, an increase in discrimination was associated with a decrease in global self-worth over the course of the program ($\beta = -0.27$, $p < 0.05$) for those students who were new to PALS when compared to the students that consistently experienced low levels of discrimination

over both time points. Returning students who experienced high stable discrimination experience more negative changes in academic competence ($b = -0.25$ $p < 0.01$) as compared to the low stable group. As discrimination increased, hope for the future, global self-worth and perceived academic competence decreased. However, discrimination, at both time points, was not statistically correlated with hope for the future. Conclusions: These results suggest experiences of perceived discrimination may affect adolescents' levels of hope for the future, global self-worth, perceived academic performance.

INTRODUCTION

Over the past two decades, experiences of perceived discrimination have become a well-recognized risk factor for physical and mental health outcomes [1]. There is growing evidence that suggests that experiences of discrimination may be one important factor of daily stressors across various races and genders [4-11]. Research has established strong connections between subjective perceptions of discrimination and a broad array of health outcomes such as hypertension and more general troubles such as higher levels of sick days and physical disability [3]. Kessler and colleagues, for example, have suggested that perceived discrimination may be as stressful as major negative life events like the death of a loved one, divorce, and job loss [22]. Of particular interest to some researchers, is the relationship between discrimination, psychosocial health and overall well-being. Results from a number of studies have shown an association between experiences of discrimination and a range of negative psychosocial characteristics including low self-esteem and depressive symptoms [5].

However, despite the abundance of empirical studies of discrimination, very few studies have focused on adolescents. The adolescent years are a very formidable developmental period of self and group identify formation and also a period when adolescents begin to acquire lifelong emotional and physical skills necessary to function positively in society. Particular concern should be given to this age group due to the fact that children begin to develop an awareness of interpersonal discrimination as early as age five [6]. Recent evidence from Whitbeck's conducted study on 220 children living on three American Indian reservations located in the upper Midwest

found that a third to a half of the children reported ethnic discrimination and a quarter reported feeling disrespected in a place of business due to race or ethnicity [2]. Perceived discrimination may interfere with the ability of children to establish identities by undermining their self-worth [2]. As children become aware of their racial identities, they begin to process information associated with these identities [6]. Children develop a more complex understanding of discrimination, and by middle school, many begin to report exposure to perceived interpersonal discrimination [6]. Younger children who live in environments which lack necessary physical resources may react with feelings of helplessness, withdrawal and self-blame [2]. The physical, psychological, and social changes that take place rapidly during adolescence have ramifications for individuals' evolving sense of identity and make youth especially vulnerable to a variety of risk factors, including low self-esteem [12]. Given the research findings about adolescence and perceived interpersonal discrimination, the adolescent period may be especially daunting for minority groups as they face the task of developing a positive sense of self as members of a minority group while becoming increasingly aware that society is stratified by ethnicity [12].

Perceived discrimination has been linked to internalizing symptoms, including depression, low self-esteem, feelings of inadequacy as well as academic struggles and school dropout [2]. A rather small amount of prior research has examined experiences of discrimination and factors such as self-esteem among adolescents. Whitbeck investigated the internalizing and externalizing symptoms as potential mediators of the relationship between perceived discrimination and substance abuse on 5th through 8th graders in the upper Midwest [2]. Out of the limited number of studies existing that investigated experiences of perceived discrimination and factors affecting adolescents' psychosocial development, very few examined factors such as hope for the future, global self-worth and perceived academic competence all potentially related to self-esteem.

Snyder defines children's hope as "a cognitive set involving the beliefs in one's capabilities to produce workable routes to goals, as well as the self-related beliefs about initiating and sustaining movement toward those goals" [8]. Having belief in the future requires the internalizing of hope and optimism about possible outcomes. Research demonstrates that positive future expectations predict better social and emotional adjustment in school and a stronger internal locus of control [15]. How children learn to think about themselves in relation to the barriers they encounter is an important contributor to hope [2]. The general belief that one has control over one's life is associated with greater wellbeing [18]. When comparing higher levels of hope to lower levels of hope among adults and children, higher hope is consistently related to better outcomes in academics, athletics, physical health, psychological adjustment, and psychotherapy [10]. Hope for the future is correlated with achievements such as graduating high school, attending college, and becoming a productive member of society [8]. Positive or negative emotions in children are theorized to reflect, respectively, instances of successful or unsuccessful goal pursuits that are anticipated or actual. High-hope children, possibly through the encouragement of critical role models (e.g., caretakers, parents, teachers, or friends), learn how to find pathways to their goals and remain mentally energized for those goals [8]. High as compared to low hope persons generate more goals [10].

Hope for the future in relation to perceived discrimination among children, adolescents and adults has been studied before, but not by many [8] [20]. Findings affirm the potential of hope as a protective factor for immigrant adolescents and young adults. For adolescents of diverse ethnicities, higher levels of hope have been associated with scholastic achievement, social acceptance, feelings of self-worth, and overall psychological wellbeing. Low levels of hope, and feelings of hopelessness, have been associated with depression, school problems, and risk behaviors [20]. Research indicates that adolescents face discrimination in employment, interactions with police, public accommodations, and in school and peer contexts [6]. Similar to

adults, adolescent's experiences with perceived discrimination are associated with poorer mental and physical health, and delinquency [6].

One's sense of global self-worth is thought to be causally linked to adolescents' emotional stability and emotional adjustment [26]. Global self-worth and self-concept is thought to influence achievement through its effect on motivation [26]. Individuals with low self-concept have been shown to have less positive characteristics in the domains of cooperation, persistence, leadership, anxiety, expectations for future education, and peer interactions when compared to peers with high self-concept [26]. Global self-worth may have a critical role in mediating the information about aspects of self in children and adolescents [25]. In regards to global self-worth, it is not clear how qualitatively different nature and basis of global self-worth in young children are, compared with global self-worth in middle childhood. Harter contended that a child is able to verbalize a concept of global self-worth before the age of 8 [25]. There is general agreement that parents, peers, and teachers provide information and feedback that shape the formation of adolescents' self-concept [26].

Academic competence is defined as skills and capabilities needed to succeed in school, which can be indicated by actual or perceived academic achievement or performance [28]. Academic competence predicts a youth's continuing in schooling, career opportunities, potential income, and family stability [28]. Adolescents who enjoy academics and have confidence in their abilities typically show more persistence during academic tasks, exhibit better academic performance, and have higher educational aspirations [27]. Adolescents who have doubts about their capabilities or who do not value academics are at risk for poorer academic performance, including dropping out of high school [27]. Bullying peers, in association with other problem behaviors, undermines youth's academic competence [28]. Bissel-Havran found that students and their friends were more similar in academic competence when the friendships were rated as more supportive [27].

The goal of this study was to examine the extent to which a change in perceived interpersonal discrimination was associated with a change in the levels of hope for the future, global self-worth and perceived academic competence among a multiracial sample of adolescents attending a four week, summer positive youth development program (PYD). Positive Youth Development programs aim to promote bonding, foster resilience, promote social, cognitive and behavioral competence, as well as foster self-efficacy, and belief in the future [15]. PYD programs are structured to build assets such as self-esteem, competence, and prosocial behavior, rather than focusing on reducing deficits such as an antisocial behavior [9]. PYD programs have special potential to promote positive outcomes in low-income populations who tend to have limited material and social resources, limited access to physical activity, lower academic achievement, and greater incidence of health problems, overweight and obesity, and depression [9].

Based upon the findings of the existing research which examines the relationship between discrimination and various adverse outcomes related to overall health status and well-being, the goals of this manuscript were to 1) identify the association between hope for the future, global self-worth and perceived academic competence and perceived discrimination and 2) to determine whether a change in perceived discrimination is related to a change in hope for the future among middle school, and early high school (8-14 years old) participants. We hypothesized that 1) higher levels of perceived racial/ethnic discrimination were related to lower levels of hope, self-worth and perceived academic competence and 2) consistently high and increasing levels of perceived interpersonal racial/ethnic discrimination were associated with increasing levels of hope for the future, self-worth and perceived academic competence.

METHODS

Study Design and Sample

The Purdue Athletes Life Success Program (PALS) is a free four-week program for children ages 8-14 whose family incomes are at or below federal poverty guidelines. The mission of PALS is to provide positive growth and character development through a range of healthy lifestyle, and physical activities for the qualifying adolescents of Tippecanoe County. The program took place at Purdue University in West Lafayette, Indiana in part to increase perceived access to continued education. Barriers to participation are addressed by providing transportation and appropriate clothing and equipment. The curriculum included sports, health and fitness, swimming, nutrition, American Sign Language, financial literacy, dance, art, judo, careers, gang avoidance, service learning and select special events. The program empowers adolescents to stay in school, set life goals, and learn successful life skills. The 2013 PALS program was structured around four-character pillars: kindness, fairness, courage and caring. As a part of the evaluation of the camp, students were given a questionnaire to complete during the first (T1) and last week (T2) of the camp [13]. These questionnaires asked about the participants' social relationships with PALS staff members and other youth, how they feel about themselves, perceived discrimination and feelings of hope for their future, global self-worth and perceived academic competence. Campers completed the questionnaire during program time at one of the programs scheduled activity stations. Campers who were absent were able to complete the questionnaire the following day. Prior to the data collection, a trained researcher explained the purpose of the questionnaire and explained the participation was voluntary.

Demographic information was obtained from camp records. Each questionnaire took about 30-45 minutes to complete.

Measures

Dependent Variables

Hope For The Future: Hope for the future was measured using Snyder's Children's Hope Scale [8]. The scale included six questions that assessed how often the campers believed that they were: 1) doing pretty well; 2) can think of many ways to get the things in life that they view as important; 3) doing just as well as other kids their age; 4) able to find lots of ways to solve their problems; 5) able see their past actions would help them in the future; and 6) able to find ways to solve a problem even when they may want to quit [8]. Campers were able to respond by using a frequency scale with 1 as none of the time, 2 as a little of the time, 3 as some of the time, 4 as a lot of the time, 5 as most of the time and 6 as all of the time [8]. Repeated measure t-test analyses were conducted to determine if the observed change in the variables of interest were statistically significant in the overall sample, and among the returning campers and campers who were new to PALS separately.

Global Self Worth: Global self-worth measures the extent to which an individual 1) likes themselves as a person, 2) is happy with their life, and 3) is generally happy with who they are. Global self-worth constitutes a global judgment of ones worth as a person, rather than domain specific competence or adequacy (17). Previous research with physical activity based summer day camps for low-income youth demonstrates that social acceptance by peers, social support from program staff, and physical competences predict changes in physical self-worth and global self-worth [19]. Global self-worth was measured with a structured alternative format scale that asked participants to decide between two statements that which described them. Specifically,

participants were asked to choose between: (1) some kids are often unhappy with themselves but Other kids are pretty pleased with themselves, (2) some kids don't like the way they are leading their life but Other kids do like the way they are leading their life, (3) some kids are usually happy with themselves as a person but Other kids are often not happy with themselves, (4) some kids like the kind of person they are but Other kids often wish they were someone else, (5) some kids are very happy being the way they are but Other kids wish they were different, (6) some kids are not happy with the way they do a lot of things but Other kids think the way they do things is fine. Participants responded to each statement using a likert-like scale with 4 options with really true for me (4)" and "sort of true for me (1)" as the anchors. A scale was created as the sum of the responses with the highest score being 24 (Cronbach's $T1\alpha=0.77$; $T2\alpha=0.83$).

Perceived Academic Competence: Perceived academic competence is concerned with understanding the child's perception of his/her competence or ability within the realm of academic performance, and school related characteristics (17). Research shows that across the preschool to high school years, children's intrinsic motivation decreases and they feel increasingly alienated from learning (21). Perceived academic competence was measured using a structured alternative format scale that asked participants to decide between two statements that which better described them. Specifically, participants were asked to choose between six statements, for example: (1) some kids feel that they are very good at their school work but other kids worry about whether they can do the school work assigned to them. A scale was created as the sum of the responses with the highest score being 24 (Cronbach's $T1\alpha=0.77$; $T2\alpha=0.81$).

Independent Variable

Perceived Discrimination: Perceived Discrimination was measured using a modified version of the Whitbeck scale, a measure of perceived day-to-day interpersonal discrimination, which assesses the occurrence and frequency with which individuals encounter routine or unfair

treatment [22]. In this study, participants were asked how often in their lifetime (1) they were treated with less courtesy or respect than others, (2) they received poorer service than other, (3) they believed others acted as if they were not smart, (4) others acted as if they were afraid of them, (5) they felt threatened or harassed because of their race or ethnicity. The Whitbeck scale consists of ten total items. Responses were provided on a frequency scale with 1 as never, 2 as sometimes and 3 as always. A scale was created by summing across the five items, with larger values representing higher frequency of discrimination (Cronbach's $T1\alpha=0.84$; $T2\alpha=0.87$). We recoded the discrimination variables using a previously utilized coding scheme to characterize the change in discrimination over the two-time points [23]. The two five-item scales were divided into quartiles and then combined into one variable with the following categories: 1) no change from the first or second lowest quartiles in both points (low-stable); 2) movement from a higher to a lower quartile at the beginning to the end of the camp (decrease); 3) movement from a lower quartile to a higher quartile at the beginning to the end of the camp (increase); and, 4) no change from the third and fourth highest quartiles during the camp (high-stable). Using this coding scheme, the analytic sample (N=371) was classified as follows: low-stable (25.6%), decrease (24.8%), increase (23.5%), and high stable (26.2%). The high-stable group is comprised of the PALS campers who experienced persistently high level of interpersonal racial/ethnic discrimination, whereas the decreasing and increasing groups are intended to reflect the change (high to low and low to high) in interpersonal racial/ethnic discrimination over the four-week period. Based on the results from Hunte that utilized this coding methodology for the discrimination scale, we hypothesized that the decreasing, increasing and high-stable groups should experience a larger change in the outcomes of interest, especially the high-stable group, compared to the low-stable group [23].

Covariates

Based on previous studies, we included age in years (as a continuous variable), sex, and race (Black/African Americans, White, Multiracial, and Other) as covariates.

Analysis

The analytic aim of the paper was to determine whether and how much perceived discrimination was associated with hope for the future, perceived self-worth and perceived academic competence and whether changes in discrimination were also associated with a change in each of these variables. We first estimated means with standard errors of continuous variables and percentages within categorical variables in our total sample, and between those returning to PALS and those who were new to PALS (see Table 1). We then examined the correlation between perceived interpersonal racial/ethnic discrimination and the three outcome variables at the beginning and end of the program (see Table 2). A multivariate Ordinary Least Squares (OLS) regression was conducted to assess the relationship between discrimination and hope for the future, global self-worth and perceived academic competence (see Table 3). Informed by previous investigations, multiplicative interaction terms between the interpersonal racial/ethnic discrimination variable and race/ethnicity and whether or not the student were new to the 2013 PALS program were explored in the multivariable analyses. The “race/ethnicity”x“change in discrimination” interaction term was not statistically significant ($p > 0.05$). However, the “new to PALS”x“change in discrimination” interaction term was statistically significant ($p < 0.05$), the multivariable analyses were stratified by whether the students were new to the program or not and race/ethnicity was included as a covariate. All of the analyses were conducted using the STATA v12 software.

RESULTS

Sample Characteristics

Table 1 presents the distribution of the PALS participants. The average age of our participants was 10.06 years old. The number of males and females involved in the program was almost equal, with 48% female and 51% male adolescents. The number of adolescents returning to the program was slightly less than the number of new enrollees, with 179 returning and 193 new participants. The racial/ethnic demographic makeup of PALS 2013 included Hispanic (45%), White (28%), Multiracial (11%), African American (10%), and other ethnicities (4%). Although not statistically significant, there was a slight decrease in hope between the two times we measured hope throughout the camp. At the beginning of PALS the overall mean was 4.36 and 4.43 at the end of camp, for a decrease of 0.07 units ($p > 0.10$).

Although neither was statistically significant, a much larger change in hope was observed among campers who attended PALS before (0.13) when compared to the campers who were new to the program (0.02). There was a slight increase in global self-worth between the two times we measured self-worth during the camp. At the beginning of PALS the overall mean was 3.10 and 3.18 at the end of the camp, with an increase of 0.08 units ($p < 0.10$). When comparing the change in global self-worth between those returning to PALS (0.07) and those who were new to PALS (0.08), there wasn't much of a difference ($p < 0.10$). At the beginning of PALS the overall mean was 2.81, and at the end of the program the mean was the same, 2.81 ($p > 0.10$). Those who have attended PALS before reported a larger change in academic competence (0.04) than those who were new to the program (0.03) (p value > 0.10).

Table 1. Selected Characteristics of Participants in the Purdue Athletes Life Success Program, 2013 (N=372)

	Total Sample ¹	New To PALS (n=193) ²	Returning To PALS (n= 179)
Age	10.06 (0.10)	9.41 (0.13)	10.75 (0.13)
Sex			
Female	180 (48.39%)	96 (49.74%)	84 (46.93%)
Male	192 (51.61%)	97 (50.26%)	95 (53.07)
Race/Ethnicity			
AA	38 (10.22%)	24 (12.44%)	14 (7.82%)
Hispanic	168 (45.16%)	77 (39.90%)	91 (50.84%)
White	105 (28.23%)	59 (30.57%)	46 (25.70%)
Multiracial	44 (11.83%)	24 (12.44%)	20 (11.17%)
Other	17 (4.57%)	9 (4.66%)	8 (4.47%)
Hope, Time 1	4.36 (0.06)	4.31 (0.08)	4.57 (0.08)
Hope, Time 2	4.43 [0.06]	4.29 (0.08)	4.44 (0.08)
Hope_change	-0.07 [0.05] ^{ns}	-0.02(0.08)	-0.13 (0.08)
Worth, Time 1	3.10 [0.04]	3.08 (0.05)	3.13 (0.05)
Worth, Time 2	3.18 [0.04]	3.16 (0.05)	3.20 (0.05)
Worth_change	0.08 [0.03]**	0.08 (0.04)	0.07 (0.04)
Academic Comp, Time1	2.81 [0.04]	2.79 [0.05]	2.84 [0.06]
Academic Comp, Time 2	2.81 [0.04]	2.75 [0.05]	2.88[0.05]
Academic Comp_change	.002 [0.03] ^{ns}	-0.03[0.04]	0.04 [0.03]
Disc, Time 1	1.41 [0.02]	1.44 (0.03)	1.38 (0.03)
Disc2, Time 2	1.38 [0.02]	1.42 (0.03)	1.34 (0.03)
Disc change	-0.03 [0.02]~	-0.02 (0.03)*	-0.04 (0.02)

Notes: Time 1 refers to the first administration of the survey 4 days after beginning of PALS.

Time 2 refers to the second and final administration of the survey at the end of PALS. Hope refers to hope for the future. Worth refers to global self-worth. Academic Comp refers to academic competence. Disc refers to perceived interpersonal discrimination.

P-values based on the results from repeated-measures t-test analyses testing for the statistical significance of the difference between the mean values at Time 1 and Time 2. ns $p > 0.05$; ~ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$. With the exception of discrimination, all of the other t-tests were based on a one-sided test. ¹P-values reflect change within overall sample of PALS campers.

²P-values reflect change within each group, New to PALS and Returning to PALS, respectively.

Pearson Correlation

Table 2 presents the Pearson Correlations for perceived discrimination, hope for the future, perceived self-worth and perceived academic competence. With the exception of hope for the future, the two other variables were moderately correlated with perceived racial/ethnic discrimination between the two time points, with a range of 0.57 to 0.69. As discrimination increased, hope for the future, perceived self-worth and perceived academic competence decreased. However, discrimination, at both time points, was not statistically correlated with hope for the future. Similarly, discrimination at the beginning of the study was not statistically correlated with perceived academic competence at the beginning of the study. With respect to outcome variables, all were positively and significantly correlated with other at both time points.

Table 2. Pearson Correlations and Coefficient Alphas (α) of Hope for the Future, Perceived Self-Worth and Perceived Academic Competence and Perceived Racial/Ethnic Discrimination

Measures	1	2	3	4	5	6	7	8
1. Hope (1)	----							
2. Hope (2)	0.565***	----						
3. Self-Worth (1)	0.444***	0.443***	----					
4. Self-Worth (2)	0.394***	0.491***	0.692***	----				
5. Academic Competence (1)	0.385***	0.312***	0.516***	0.388***	----			
6. Academic Competence (2)	0.329***	0.313***	0.442***	0.473***	0.756***	----		
7. Racial/Ethnic Discrimination (1)	-0.084	-0.080	-0.294***	-0.321***	-0.091	-0.205***	----	
8. Racial/Ethnic Discrimination (1)	-0.062	-0.052	-0.242***	-0.360***	-0.110*	-0.233***	0.636***	----

Note: * $p < .05$, ** $p < .01$, *** $p < .001$, two tailed. (1) Refers to the first evaluation and (2) Refers to the second evaluation.

Multivariable Regression Analysis Stratified by New/Returning Campers

Table 3 depicts results from the multivariable regression analysis with the change in interpersonal discrimination predicting change in each hope for the future, perceived global self-worth, and perceived academic competence stratified by whether the students were new or returning to the 2013 PALS program, controlling for age, sex and race/ethnicity and the week 1 measures of the discrimination and the outcomes of interest. Interestingly, the change in discrimination variable was a statistically significant predictor for perceived global self-worth and perceived academic competence, but not as much for hope for the future, regardless of whether the students were new or a returning student to the PALS program. The students who were new to PALS and reported an increase in discrimination, experienced more negative changes in hope for the future over the course of the program ($\beta = -0.43$, $p < 0.05$) compared to the low stable group. Meaning, those students who reported increasing levels of discrimination over the period of the program were more likely to report a decrease in hope over the same period compared to the low-stable group.

In regards to perceived global self-worth, an increase in discrimination was associated with a decrease in perceived global self-worth over the course of the program ($\beta = -0.27$, $p < 0.05$) for those students who were new to PALS when compared to the students that consistently experienced low levels of discrimination over both time points. Meaning, those students who reported more discrimination over the course of the program were more likely to report a decrease in perceived global self-worth during the program in comparison to the low stable group. The students who had previously attended PALS and reported consistently high levels of perceived discrimination during the program, reported a statistically significant decrease in perceived global self-worth ($b = -0.28$, $p < 0.01$) when compared to the low stable group. Surprisingly, for those returning students that reported a decrease in discrimination, they also

reported a statistically significant decrease in perceived global self-worth ($b = -0.20$, $p < 0.05$) when compared to those who consistently experienced low levels of discrimination over both time points. For those students new to PALS 2013, an increase in discrimination was also associated in a decrease in perceived global self-worth ($b = -0.27$, $p < 0.05$).

With regards to perceived academic competence, those who are new to the program and are high stable, decreasing, or increasing, have more negative changes in academic competence than the low stable group. On the other hand, although all of the change in perceived discrimination coefficients among the students who were not new to PALS were negatively associated with perceived academic competence only the high stable group was statistically significant. Returning students who experienced high stable discrimination experience more negative changes in academic competence ($b = -0.25$, $p < 0.01$) as compared to the low stable group. The increasing and decreasing groups are no different than the low stable group.

Table 3: Results from Multivariable Linear Regression Predicting Change in Hope, Self-Worth, and Academic Comp in the Purdue Academic Life Success Program, 2013 Among New and Returning Program Participants

	Hope				Self-Worth				Academic Comp			
	New		Returners		New		Returners		New		Returners	
	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)	b	(SE)
Everyday												
Race/ethnic												
Discrimination												
Low Stable												
High stable	-0.21	(0.21)	0.03	(0.20)	-0.31*	(0.12)	-0.28**	(0.10)	-0.49***	(0.11)	-0.25**	(0.09)
Decrease	-0.28	(0.21)	0.08	(0.21)	-0.15	(0.12)	0.20*	(0.10)	-0.36**	(0.11)	-0.16	(0.09)
Increase	-0.43*	(0.20)	-0.11	(0.20)	-0.27*	(0.12)	-0.04	(0.10)	-0.50***	(0.11)	-0.01	(0.09)
Age	-0.01	(0.04)	-0.03	(0.04)	0.01	(0.02)	0.00	(0.02)	-0.03	(0.02)	0.02	(0.02)
Male	-0.12	(0.14)	-0.05	(0.15)	-0.13	(0.08)	-0.04	(0.07)	-0.13	(0.07)	-0.02	(0.07)
Race/ethnicity												
Hispanic												
Black/AA	0.30	(0.23)	-0.42	(0.28)	0.09	(0.13)	-0.22	(0.13)	-0.06	(0.12)	-0.10	(0.12)
White	0.08	(0.17)	-0.55**	(0.18)	0.13	(0.10)	-0.16	(0.08)	0.13	(0.09)	-0.18*	(0.08)
Multiracial	0.24	(0.23)	-0.11	(0.24)	0.10	(0.13)	0.05	(0.11)	-0.07	(0.12)	-0.03	(0.11)
Other	0.18	(0.34)	-0.17	(0.36)	-0.25	(0.19)	-0.04	(0.17)	-0.10	(0.18)	0.24	(0.16)
Hope ₁	-0.46***	(0.06)	-0.37***	(0.07)								
Worth ₁					-0.38***	(0.06)	-0.28***	(0.05)				
Academic ₁									-0.29***	(0.05)	-0.25***	(0.04)
Constant	2.25***	(0.57)	2.11***	(0.55)	1.36***	(0.34)	1.05***	(0.28)	1.47***	(0.30)	0.72**	(0.24)
Adj. R-squared	0.213		0.188		0.228		0.216		0.222		0.175	
f_value	6.168564		5.126266		6.644486		5.894027		6.437154		4.779497	
p_value	4.42e-08		1.58e-06		9.392e-09		1.30e-07		1.84e-08		4.90e-06	
N	192		179		192		179		192		179	

Note: Asterisks depicts p-value: * < 0.05, ** < 0.01, *** < 0.001. All models controlled for age, sex, race, and grade level. ^aLow levels of perceived interpersonal discrimination at the beginning and end of PALS 2013; no change. ^bHigh levels of perceived interpersonal discrimination at the beginning and end of PALS 2013; no change. ^cChange from high levels of interpersonal discrimination at the beginning and to low levels at the end of PALS 2013. ^dChange from low levels of interpersonal discrimination at the beginning and to high levels at the end of PALS 2013

DISCUSSION

Given that experiences of everyday perceived discrimination can have adverse effects on one's physical and mental health, the purpose of this study was to investigate the relationship between perceived discrimination, hope for the future, global self-worth, and perceived academic competence while controlling for age, sex, and race/ethnicity over a four-week positive youth development program. The findings indicated that everyday interpersonal discrimination was negatively associated with perceived self-worth, hope for the future, and perceived academic competence. Interestingly, in this study, the change in discrimination variable was a statistically significant predictor for global self-worth and perceived academic competence, but not for hope for the future, regardless of whether the participants were new or returning to the PALS program. The students who reported more discrimination over the period of the PALS program were more likely to report a decrease in hope over the same period. This could be due to the fact that discrimination has many adverse effects that cause internalizing symptoms. To our surprise, among the returning PALS participants, those that reported consistently high levels of discrimination or a decrease in discrimination reported a slight increase in hope for the future between the two data collection points when compared to the low stable participants. This increase in hope for the future, although not statistically significant, may be associated with factors such as the adolescent's interactions with positive role models throughout the course of the program, the team and trust building activities, and pillars (kindness, fairness, courage and caring) instilled in the program. Another possible explanation for the increase in hope for the future could be due to the fact that the adolescent has learned how to become more resilient.

In regards to perceived global self-worth, those who were new to the program and experience high or increasing discrimination have more negative changes in global self-worth as compared to the low stable group. The returning campers, who are high stable, decreasing, or increasing, have more negative changes in global self-worth than the low- stable group. One potential reason for this observation could be due to the fact that perceived interpersonal discrimination are related to internalizing symptoms, such as depression, fear, and social withdrawal that may cause an individual to doubt themselves and their worth.

In regards to perceived academic competence, those who were new to PALS, and high stable, decreasing, or increasing have more negative changes in academic competence than the low-stable group. The returning campers, who experience high-stable discrimination experience more negative changes in academic competence as compared to the low-stable group. The increasing and decreasing groups are no different than the low-stable group. Examples of perceived discrimination being associated with adverse academic outcomes are seen in other research as well. For example, Grollman et al. suggested that early experiences with discrimination are associated with health problems, poor academic performance, and delinquency [6]. Similarly, in a sample of 220 children, ages 9-16, Whitbeck et. al. reported that 54% of the children reported teachers being surprised when they did well academically [2]. Our findings are not the first to suggest that perceived discrimination has an impact on academic competence. Although there is research on this specific topic, we believe that this field is in need of more studies to examine the link between perceived interpersonal discrimination and global self-worth, academic competence, and hope for the future in adolescents.

Limitations

While extending our current understanding of the link between perceived interpersonal discrimination and self-perceptions and hope in children, this study is not without limitations. Due to the short duration of the PALS program our data collection points were taken within a month of one another. Although some changes were seen during the program, the exact timing to measure changes in any of the characteristics of interest is unclear. In theory, one may expect that with a longer duration, the positive youth development program would have the opportunity to better instill the character pillars, as well as present more team and trust building activities that may affect a larger change in the amount of perceived interpersonal discrimination, hope for the future, global self-worth and perceived academic competence. A second limitation may be due to the low literacy rate of some of the students, given that our sample population consisted of children ages 8-14. Although trained research assistants were readily available to answer questions and read items aloud to campers with reading difficulties, some students may not have been willing to ask for help.

Despite its limitations, the results of this study are noteworthy, in that it is the first known study to examine experiences of perceived day- to- day discrimination and hope for the future, global self-worth and perceived academic competence in youth and adolescents while controlling for age, sex, race/ethnicity and baseline measurements of discrimination and the three dependent variables in an underserved, multiracial/ethnic sample of adolescents.

IMPLICATIONS

The results have several implications for behavioral health clinicians, public health practitioners, and those who work with children and adolescents. Similar to other studies, these results suggest experiences of perceived discrimination may affect perceived global self-worth, perceived academic performance and hope for the future. Personal and social assets such as interpersonal skills and positive self-perceptions, contribute to young peoples' physical, intellectual, psychological, emotional and social development [19]. Participation in PYD programs provides vital opportunities to low-income youth who are disadvantaged in multiple arenas, notably academics and physical health [19]. PYD programs, such as PALS, work to promote bonding, foster resilience, promote social, cognitive, and behavioral competence, as well as foster self-efficacy, and belief in the future [15]. Educators and those working in the field of positive youth development should be aware of and consider addressing the potentially harmful effects of perceived interpersonal discrimination a risk factor for perceived global self-worth and perceived academic competence.

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