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Using Positive Psychology to Explain Shelter Use: A Study of Homeless Families in New York City

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Abstract
Moving homeless families into stable housing is an important policy priority, but little is known about how individual and household characteristics affect shelter use. This leaves homeless services providers and policy makers with few tools to make a priori decisions on which to base the targeting of services. Psychologists and economists have found that positive psychological capital leads to improvements in policy-relevant variables like academic achievement, income, and justice system recidivism; this is the first application of that framework to homelessness. This study measures three positive psychological traits – hope, resilience, and self-control – among 276 families who entered shelter in New York City, and uses survival analysis models to examine their relationships with the number of days subsequently spent in shelter and whether families who exited shelter returned. In addition, scores on these scales are compared to those of other populations. Two of the three traits are significantly associated with the duration of shelter use. On an 8-point hope scale, a one-point increase is associated with a reduction of 35 shelter days at $p<.05$. At the less stringent $p<.10$ threshold, a one-point increase on a 5-point resilience scale reduced shelter use by 32 days. Additionally, scores on the three scales were similar to those of non-homeless populations. These findings have implications for perceptions of homelessness and suggest solutions to address it. While the models did not accurately predict how long a family will stay in shelter or whether it will return after leaving, a growing body of research suggests that increasing hope and resilience through low-cost, low-burden interventions may reduce total shelter use. In addition, baseline comparisons to other populations suggest that homelessness is not associated with a deficiency of positive psychological attributes, which may be helpful in re-framing the discourse on factors associated with homelessness.

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USING POSITIVE PSYCHOLOGY TO EXPLAIN SHELTER USE: A STUDY OF HOMELESS FAMILIES IN NEW YORK CITY

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ABSTRACT

USING POSITIVE PSYCHOLOGY TO EXPLAIN SHELTER USE: A STUDY OF HOMELESS FAMILIES IN NEW YORK CITY

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Moving homeless families into stable housing is an important policy priority, but little is known about how individual and household characteristics affect shelter use. This leaves homeless services providers and policy makers with few tools to make a priori decisions on which to base the targeting of services. Psychologists and economists have found that positive psychological capital leads to improvements in policy-relevant variables like academic achievement, income, and justice system recidivism; this is the first application of that framework to homelessness. This study measures three positive psychological traits – hope, resilience, and self-control – among 276 families who entered shelter in New York City, and uses survival analysis models to examine their relationships with the number of days subsequently spent in shelter and whether families who exited shelter returned. In addition, scores on these scales are compared to those of other populations. Two of the three traits are significantly associated with the duration of shelter use. On an 8-point hope scale, a one-point increase is associated with a reduction of 35 shelter days at $p<.05$. At the less stringent $p<.10$ threshold, a one-point increase on a 5-point resilience scale reduced shelter use by 32 days. Additionally, scores on the three scales were similar to those of non-homeless populations. These findings have implications for perceptions of homelessness and suggest solutions to address it. While the models did not accurately predict how long a family will stay in shelter or whether it

will return after leaving, a growing body of research suggests that increasing hope and resilience through low-cost, low-burden interventions may reduce total shelter use. In addition, baseline comparisons to other populations suggest that homelessness is not associated with a deficiency of positive psychological attributes, which may be helpful in re-framing the discourse on factors associated with homelessness.

CONCEPTUAL FRAMEWORK

This study examines the extent to which positive psychological characteristics explain patterns of shelter use among homeless families. Positive psychological capital - traits like resilience, hope, and self-control - have been associated with positive outcomes like higher incomes and lower rates of justice system recidivism, but have not been tapped by homelessness researchers to examine trends in shelter use.

Approximately 1.5 million people spent at least one night in shelter in 2012, of whom 535,420 people were members of 167,854 homeless families (US Department of Housing and Urban Development, 2014a). Homelessness can have negative consequences for the development and mental and physical health of children and their families, as well as financial costs for the agencies that provide services (Bassuk, Perloff, & Dawson, 2001; Khadduri, Leopold, Sokol, & Spellman, 2010; D. Rog, Holupka, & Patton, 2007; D. J. Rog & Buckner, 2007). Moving homeless families into stable housing is therefore an important policy priority.

Doing so effectively and efficiently requires matching interventions to the correct population, but little is known about how individual and household characteristics affect length of time in shelter and the number of homelessness spells. Part of the blame may rest with the data being used. Longitudinal studies rely on either administrative datasets, which capture precise shelter information but few client characteristics, or primary data that contain greater breadth and depth of client characteristics but homelessness spell estimates based on retrospective self-report. Psychosocial characteristics included in these studies focus on psychopathology and other barriers to stable housing, to the exclusion of positive traits that may facilitate successful exits from homelessness.

Psychologists and economists have found that positive psychological traits lead to improvements in policy-relevant variables like academic achievement, income, and coping with stress. This study is the first to apply that framework to homelessness. The project measures levels of three traits – hope, resilience, and self-control – among a sample of families entering shelter, and tests their relationships with subsequent shelter use.

LITERATURE & SIGNIFICANCE

Homelessness

Homelessness has become a more common phenomenon in the United States over the last 20 – 30 years (O'Flaherty, 2009). Homelessness, in official counts and most research, refers to those who are sleeping in shelters or places not meant for human habitation, like streets and subway stations. The latest data suggest that approximately 580,000 people met this definition on a given night in 2014, and that 1.5 million people spent at least one night in shelter over the course of 2012(US Department of Housing and Urban Development, 2014a, 2014b). A growing share of this population, currently 37%, belong to a homeless family.

Ending family homelessness is an important policy objective, and interventions targeting this population are the focus of a growing body of research (Culhane, Metraux, & Byrne, 2011; Early & Olsen, 2002; Early, 2004; O'Flaherty, 2009; Y.-L. I. Wong et al., 1999; Y.-L. I. Wong, Culhane, & Kuhn, 1997). Much of this research suggests that the effectiveness and efficiency of these policies are dependent on proper targeting and appropriate supports, but there is scant research and little known about how individual and household-level characteristics affect a family's likelihood of leaving shelter and subsequently returning.

Longitudinal studies of homelessness spells can be divided into two methodological categories, based on whether they use administrative or primary data. Since 2005, the Department of Housing and Urban Development (HUD) has required grantee shelter providers to record all shelter entries and exits, allowing for greater precision in tracking shelter usage (US Department of Housing and Urban Development,

2014c). Because administrative databases are not built for research, however, they generally capture little beyond basic demographics and program-relevant information, and exclude characteristics that may contribute to homelessness, or exit from the condition.

Research using administrative records has divided family shelter users into three broad clusters based on the number and duration of homelessness episodes: transitional, episodic, and long-term shelter users. Transitional users comprise 60–80% of people in shelters; they use shelter once or twice for short periods of time. Episodic users have three or more distinct shelter stays over a period between two and three years, and constitute approximately 10% percent of shelter users. Finally, long-term homeless shelter users generally have a small number of stays but each lasts an average of 6-9 months (Culhane, Metraux, Park, Schretzman, & Valente, 2007). Black and Hispanic shelter users are more likely to be in the higher use groups, but age and gender do not appear to impact whether a family is a transitional, episodic, or chronic user of shelter. In some municipalities, prior receipt of Medicaid-funded inpatient services or TANF, employment, and use of foster care as a child were all associated with being an episodic or chronic shelter user.

Other studies based on administrative data have examined predictors of shelter exit and the probability of reentry among homeless families. The likelihood of a household exiting shelter decreases the longer the family is homeless and as the age of the head of household increases. African-American and Hispanic families were less likely to leave shelter than others, although the effect sizes of race and ethnicity on shelter use were small. Families in which the head of household is pregnant or reports

domestic violence as their reason for homelessness were more likely to exit than others. Having some informal support and a larger social network are associated with a greater likelihood of shelter exit. Among those who exit shelter, those with a job or those who receive cash assistance or a rental subsidy are much less likely to return to homelessness than others. Families that leave shelter within 30 days or have a young head of household are also at increased likelihood of shelter re-entry. (Allgood & Warren, 2003; Byrne, Treglia, Kuhn, Kane, & Culhane, 2015; Shinn et al., 1998; Y.-L. I. Wong et al., 1997).

Studies reliant on primary data possess greater depth and breadth of client characteristics but lack the same precision in tracking homelessness dynamics. They frequently conduct interviews in waves, and homelessness spell data are subject to, among other measurement problems, attrition, recall errors, and social desirability bias. Wong and Piliavin (Y. I. Wong & Piliavin, 1997) examined the shelter patterns of 66 homeless families in Alameda County, CA, incorporating enrollment in other social services and physical and mental health issues and substance abuse disorders. They found that diagnosis of alcoholism and higher amounts of cash benefits predicted more rapid shelter exit. Of the 62 families that exited shelter, they found that diagnosis of a mental disability or drug problem increased the likelihood of return to shelter, while receipt of a housing subsidy and prior receipt of social services decreased future shelter use. Shinn (Shinn, 1997) and Stojanovic and colleagues (Stojanovic, Weitzman, Shinn, Labay, & Williams, 1999) similarly use waves of interviews to examine predictors of return to shelter among a cohort of formerly homeless families in New York City. They, like Wong and Piliavin, found receipt of a housing subsidy to be the strongest negative predictor of future shelter use. Bassuk, Perloff, and Dawson (Bassuk et al., 2001), in a

study of families that used shelter in Worcester, MA, similarly found that rental subsidies reduced subsequent shelter use, but also saw that women with repeated shelter stays were more likely to have been the victim of childhood sexual abuse or recent intimate partner violence. Toohey and colleagues (Toohey, Shinn, & Weitzman, 2004), in their study of homeless families in New York City, found exits facilitated by increased social supports.

Weinreb, Rog, and Henderson (Weinreb, Rog, & Henderson, 2010) is the only study evaluating shelter use among homeless families that combines primary data with administrative records. They interviewed 253 families exiting shelter about prior and current employment, residential history, and physical and behavioral health information, and used administrative records to assess length of time in shelter. They, like Wong and Piliavin (Y. I. Wong & Piliavin, 1997) found a positive drug or alcohol screen increased the length of time spent in shelter. They also found increases in income associated with reduced length of time spent in shelter.

This literature collectively suggests factors that affect the likelihood of housing stability. Demographically, young minority families leave shelter quickly but return at higher than average rates. Screening positive for mental illness and substance abuse are also indicative of longer and repeat shelter stays. Greater financial and social supports, on the other hand, lead to exit and increased stability. While helpful for understanding shelter patterns, these factors do not account for enough of the variance in shelter use to make them, by themselves, useful for predicting shelter use and targeting interventions.

Part of the difficulty in explaining shelter patterns may by attributable to the data being used. Studies based in administrative data include little household-level data beyond basic demographics, and those using primary data focus almost exclusively on

negative traits and experiences, neglecting positive characteristics that may facilitate housing stability.

Psychological Capital

Positive psychology is the study of happiness, subjective well-being, and the optimal functioning advantageous in attaining those conditions. Positive psychology, as its own field, was pioneered by Martin Seligman among others in the late 1990s and early 2000s as the counter to psychological research focused on negative personality traits and mental disorders (Martin E.P. Seligman & Csikszentmihalyi, 2000; Martin E.P. Seligman, Steen, Park, & Peterson, 2005). Since World War II, Seligman and his colleagues argue, psychology has viewed the human mind through a disease model (Maddux, 2002) in an era characterized by empirical emphasis on suffering, vulnerability, and the consequences of environmental stressors like poverty and homelessness. Between 1950 and 2000, published articles emphasizing mental disorders outnumbered research on positive characteristics by a ratio of 2 to 1 (Biswas-Diener & Patterson, 2011).

Positive psychology is not simply the converse of psychopathology, examining the absence of mental illness or viewing strengths such as optimism as the opposite of a mental health disorder such as depression. Rather, it engages the study of beneficial characteristics beyond the presence or absence of detrimental ones (Alex Linley, Joseph, Harrington, & Wood, 2006; Lopez, Pedrotti, & Snyder, 2015). While positive psychology as a distinct field is relatively new, its premise - that traits advancing positive development are worthy of study – is as old as psychology itself. William James referred

to “healthy mindedness”(1902); Menninger (1959) discussed the virtues of hopeful thinking; Rogers (1961) referred to the full potential of people’s functions; and Maslow (1968) discussed self-actualization and the study of mental health (Alex Linley et al., 2006; Peterson, 2006). Research on resilience, hope, motivation, self-control, and optimism, for example, have appeared frequently in literature since the 1980s but without a unifying force drawing attention to their potential commonality. Much of the contribution of positive psychology as a field, Peterson notes, is the creation of an “umbrella term” uniting this previously disparate work and strengthening the theoretical and empirical foundation for its study (Peterson, 2006).

Positive psychologists are well-positioned to study the well-being and character strengths of people living in poverty, although little of their research has engaged this population (Biswas-Diener & Patterson, 2011; Todd & Worell, 2000; Tweed, Biswas-Diener, & Lehman, 2012). From a theoretical perspective, as Biswas-Diener argues, positive psychology is in part about reaching individual potential, and poverty acts as an obstacle to achieving this. Moreover, individuals in poverty are often defined solely by their economic situation and erroneously depicted as static, but they possess strengths like hope, motivation, and happiness that are of direct concern to positive psychology, and which may affect their economic mobility. Practically, positive psychological traits are correlated with better coping against adverse conditions and stressful life events, characteristics of high importance among those struggling with multiple barriers to economic stability.

For policymakers, the utility of these traits is dependent on their durability and the nature of their relationship with economic variables. Psychological characteristics are

generally conceptualized as both traits and states - individuals have some dispositional level of a psychological characteristic that is generally stable across time, and state levels that fluctuate with circumstances (Gailliot, Gitter, Baker, & Baumeister, 2012). The two are highly positively correlated; those with high trait levels have similarly high state levels. Mullianathan and others (Bernheim & Ray, 2013; Shah, Mullianathan, & Shafir, 2012) have written extensively on reductions in executive function resulting from poverty. As scarcity deepens and meeting basic demands become challenging, longer-term goals like finding a path out of a current negative situation or improving spending habits become increasingly difficult. Laboratory and observational studies have found that traits like optimism, hope, self-control, and motivation all suffer as a result of poverty.

The causal relationship is also true in reverse – levels of positive psychological characteristics are predictive of subsequent outcomes. Research since Isen (Isen, 1970) has helped to draw a causal line from positive characteristics to better physical and mental health, lower rates of substance abuse and justice system involvement, and higher academic achievement, among other outcomes. This study continues in that tradition, focusing on three constructs that all contribute to coping in positive achievement: hope, resilience, and self-control.

Hope

Research since the 1950s has demonstrated the importance of hope among adults. Hope is a cognitively based expectation of achieving future positive outcomes (Roesch, Duangado, Vaughn, Aldridge, & Villodas, 2010; C R Snyder et al., 1991; Snyder, C.R.,

Shorey, Hal S., Cheavens, Jennifer, Mann Pulvers, Kimberley, Adams III, Virgil H., Wiklund, 2002; Valle, Huebner, & Suldo, 2006). In contrast to early literature that saw hope as a unidimensional measure of one's belief that their goals can be achieved (Cantril, 1964; Frank, 1975; Menninger, 1959; C R Snyder, Rand, & Sigmon, 2002; C R Snyder, 2002) recent literature has adopted a multidimensional approach that sees hope as the result of "agency" and "pathways" thought processes (Roesch et al., 2010; C R Snyder et al., 1991, 2002; Valle et al., 2006).

Agency is a "goal-directed determination" and pathways is the "planning of ways to meet goals (Chang, 2003; C R Snyder et al., 1991, 2002)"; neither alone fully constitutes hopeful thinking. One may think of many paths through which to achieve a goal, but have little faith in one's self to achieve it, or vice versa, and will therefore lack confidence that their goal will be achieved. In contrast to optimism, which involved expectations of future outcomes without regard for personal control (Scheier, Carver, & Bridges, 1994), hopeful thinking is dependent on one's perception of their contribution to that outcome (Rand, Martin, & Shea, 2011). Hope is further divided into two distinct types: temporally-based "state" hope reflective of a particular moment in time or life, and dispositional or "trait" hope, which remains constant across time situations, and experiences (Rand et al., 2011).

Hope is especially important as a coping mechanism for vulnerable populations. Individuals who have suffered repeated setbacks must fight their current circumstances to maintain confidence that goals can be attained; those with higher levels of hope are better able to see the paths out of their current situation and see themselves as taking them, and are thus more likely to seek and find functional solutions. Individuals with higher levels

of hope are more likely to see stressors as challenges rather than threats, and are thus more likely to develop multiple and more highly functional strategies to address them. Hope leads someone whose strategy has failed to find another approach, an important asset for those facing multiple barriers.

Since the development of Snyder's hope theory, observational and laboratory research has provided empirical support for this conceptual framework across population types with varying life experiences and goals. Several studies involving members of ethnic minority groups facing multiple barriers – acculturation, language, prejudice, economic hardship – find variations in hope predictive of important outcomes; those with high levels of hope perform better academically (Adelabu, 2008), are better able to cope (Danoff-Burg, Prelow, & Swenson, 2004), and employ more problem-solving coping strategies (Tong, Fredrickson, & Chang, 2010) than their lower-hope counterparts. Higher hope also predicts increased self-esteem and better athletic achievement and health practices (Curry, Snyder, Cook, Ruby, & Rehm, 1997; Horton & Wallander, 2001; C R Snyder et al., 1991); academic achievement (Day, Hanson, Maltby, Proctor, & Wood, 2010). Among particularly vulnerable populations, hope predicts improved coping among women caring for chronically ill children (C R Snyder, Lopez, Shorey, Rand, & Feldman, 2003), abstinence from alcohol and drugs among those entering treatment and greater lengths of abstinence and higher quality of life for individuals with substance use disorders (Shumway, Bradshaw, Harris, & Baker, 2013).

Resilience

Research on resilience has become increasingly salient and pervasive as research has moved away from illness and deficit models and toward an understanding of individual strengths (Rutter, 1987; B.W. Smith, Tooley, Christopher, & Kay, 2010; Windle, Bennett, & Noyes, 2011). It is generally concerned with variations in response to adversity, and why some succeed in overcoming obstacles while others succumb to negative circumstances (Rutter, 1987). "Resilience" has taken on a number of definitions over the 30 years in which it has been the subject of intense research (Luthar & Cicchetti, 2000; B.W. Smith et al., 2010; Bruce W Smith et al., 2008), but recent conceptual work has narrowed the meaning in a way that allows for the understanding of its relationships with other psychological and constructs. Most recent literature sees "resilience" as the ability to recover, or "bounce back" from some adverse condition, a definition that puts the research definition in line with the word's original dictionary meaning (Bruce W Smith et al., 2008).

Measurement of resilience, assessed through an examination of either previous experiences overcoming adversity or characteristics like social support, family cohesion, values, and motivation that facilitate resilience, is especially relevant to understanding the positive characteristics of homeless families (Windle et al., 2011). Seccombe (2002) found that resilient low-income families are more likely to have clear expectations for the futures of their children and Cox and Davis (1999) found them to be more effective in solving problems and managing conflict. Other studies have found that resilient cardiac patients have better recovery times (Bruce W Smith et al., 2008) and responded better to cardiac rehabilitation programs seeking to reduce risk of cardiac events down the road (Chan, Lai, & Wong, 2006; Shepperd, Maroto, & Pbert, 1996). Pretsch and colleagues

(Pretsch, Flunger, & Schmitt, 2012) found that measures of resilience are associated with better health.

Self-Control

According to some researchers, lack of self-control is an important contributor to persistent poverty (Bernheim & Ray, 2013), and social policy makers and researchers are increasingly turning in its direction for answers. Self-control is an umbrella term bridging concepts like delay of gratification, willpower, and impulsivity (Moffitt et al., 2011), summarily defined as one's capacity to alter their own actions to comply with long-term individual goals and societal values, and sometimes referred to as a conscious, deliberate self-regulation (Ameriks, Caplin, Leahy, Tyler, & Tyler, 2010; Baumeister, Vohs, & Tice, 2007; de Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012; Tangney, Baumeister, & Boone, 2004). The concept has gained increased attention from economists and social scientists as studies of self-control have demonstrated insight into the nature and functions of self and has implications in human behavior(Baumeister et al., 2007). "Self-control" or some very similar term was recently a keyword in 3% of all peer-reviewed psychology articles in 2013 (Duckworth, 2014).

There is little longitudinal research on the impact of self-control (de Ridder et al., 2012; Malouf et al., 2014), but what does exist is compelling. While the most famous research on self-control says that kindergartners who successfully resist marshmallows have higher grades (Mischel & Baker, 1975), social scientists have adapted the construct to many other phenomena. Much of this research has focused on vulnerable, low-income populations. Health researchers have found increased self-control predictive of lower

rates of substance abuse and higher rates of medical treatment compliance; sociologists similarly found relationships between self-control and employment, criminality and justice system recidivism, and spending habits (Duckworth, 2014; Malouf et al., 2014; Moffitt et al., 2011; Romal & Kaplan, 1995).

Research Question and Hypotheses:

Based on the literature discussed above, there is conceptual evidence to suggest a relationship between positive psychological capital and shelter use. Specifically, this study asks:

- To what extent can hope, resilience, and self-control each explain the cumulative number of days spent in shelter during the follow-up period?
- Of families that exit shelter, to what extent do these characteristics explain which families return to shelter?

While no research has connected hope, resilience, or self-control directly to homelessness, psychologists and policy researchers have evaluated their relationship with correlated variables. All three traits are associated with improved coping in stressful circumstances – as a bout of homelessness could be described; similarly, Campbell-Sills and colleagues (Campbell-Sills, Cohan, & Stein, 2006) found resilience positively associated with task-oriented problem solving that might help one find stable housing. Higher levels of self-control are a strong predictor of employment seeking and income, which can facilitate shelter exit and reduces the likelihood that a family returns (Weinreb et al., 2010; Y. I. Wong & Piliavin, 1997; Y.-L. I. Wong et al., 1997). All three characteristics are associated with reductions in substance abuse disorders, which would also predict higher likelihood of housing stability (Mathis, Ferrari, Groh, & Jason, 2009;

Wingo et al., 2010; Wingo, Ressler, & Bradley, 2014). Higher levels of resilience and hope are also correlated with more social support, which Toohey and colleagues found facilitated shelter exit (Cohen & Hoberman, 1983; Horton & Wallander, 2001; Toohey et al., 2004).

Given these findings, this study hypothesizes that:

- Higher scores of hope, resilience, and self-control will be associated with fewer cumulative days in shelter;
- Higher scores of hope, resilience, and self-control will be associated with reductions in the likelihood that a family that has exited shelter will return.

Significance

Understanding the impact of positive psychological traits on shelter usage has two fundamental implications for homelessness policymakers and those involved in shelter operations and casework. The first is in the potential of these characteristics to identify households likely to spend the longest time in shelter and who have the greatest housing instability, important for the efficient allocation of interventions.

Homeless shelter providers and case managers currently lack tools to make a priori predictions of short-term and long-term shelter stayers, or shelter re-entry; models including these traits may enable them to target resources in a way that reduces overall shelter utilization, costs, and promotes housing stability. The integration of positive psychological capital into the traditional framework of homelessness may provide the necessary level of specificity lacking in current prediction algorithms.

The second benefit of understanding a connection between positive psychological traits and shelter use is in the potential to enhance traits associated with early and stable exits from shelter. Should findings suggest that any of the three constructs used in this

study be correlated with reduced shelter use or increased stability after exit, interventions boosting those characteristics may be warranted. As research has demonstrated the impact of these traits, there has been a proliferation of interventions seeking to affect them. A growing body of literature suggests that many of these interventions are effective and -- extremely important to budget-strapped social service agencies -- inexpensive (Martin E P Seligman, Steen, Park, & Peterson, 2005; B.W. Smith et al., 2010; Steinhardt & Dolbier, 2010; Windle et al., 2011).

RESEARCH DESIGN AND METHODS

Setting

This study examines families with children eligible for shelter through the City of New York's Department of Homeless Services (DHS). The DHS shelters approximately 59,000 individuals per night, and approximately 43,000 belong to 12,000 families with children (New York City Department of Homeless Services, 2015). A "family with children" is one in which (1) the family includes at least one person under 18, or (2) a member of the family is pregnant. Families with children tend to be single-parent female headed, and with an African-American or Hispanic head of household aged between 21 and 23 (Culhane, Metraux, Byrne, Stino, & Bainbridge, 2013; Culhane et al., 2007; Y.-L. I. Wong et al., 1997).

Families apply for shelter at the agency's central intake center, the Prevention and Temporary Housing (PATH) center in the Bronx. There they meet with a caseworker and complete an application that includes a housing history, and are offered a conditional stay (of approximately 10 days) until the application's review has been completed. DHS can find a family "eligible" if it deems the family has no housing alternatives or "ineligible" because either the family has another housing option or was uncooperative and did not provide enough information for the agency to conduct its investigation. A family may also leave shelter during this conditional stay, and they will be coded as having Made Own Arrangements, or "MOA." A family may reapply for shelter after being found ineligible or leaving on its own without any minimum waiting period. From

July 2010 through June 2011, the latest period for which data are available, 12,244 families were found eligible to stay in DHS's shelter system (Critical Activities Report).

New York City's Department of Homeless Services was selected as the study site for several reasons. First, the City's mandated right to shelter ensures an uninterrupted flow of entrants into the shelter system, and study enrollment will not be halted because the shelter system has reached capacity. Second, DHS maintains a highly accurate administrative database – the Client Assistance and Rehousing Enterprise System (CARES), which ensures that participants cannot attrite from the study, unless they seek shelter outside of New York City or from a private shelter outside of the city's reporting system. Third, the steady volume of entrants reduces the amount of time needed to enroll study participants. This reduces the study's costs and timeframe, and reduces the chance that some policy or economic change will occur in the middle of the enrollment period that would affect only a portion of the participants.

Sample Size and Recruitment Procedures

There are no studies examining the effect of positive psychological characteristics on the behavior of homeless families, but studies looking at these variables separately provide useful information for calculating power. Malouf (Malouf et al., 2014) and Duckworth (Duckworth, 2014) and their respective colleagues found small to medium effects of self-control on academic performance and laboratory tasks. A study of social adjustment among the homeless found that health, age, and social adjustment had effect sizes on homelessness ranging between .05 and .4 (Gordon, Rosenheck, Zweig, & Harpaz-Rotem, 2012). A power analysis using the lower bound (.05) in Gordon's

analysis with an alpha of .05 and a probability of finding an effect of .8 suggested that a sample of 261 participants would be adequate to detect an effect. The study enrolled 276 families.

Those eligible for the study are the self-designated head of household of a family applying for shelter at PATH whose application is found eligible for shelter. Study recruitment and surveying were conducted among families applying for shelter between June 18 and September 20, 2013. Families were at PATH for a total of approximately six hours to visit the agency's social workers, legal, and medical staff, with some time spent waiting between most appointments. Recruitment was conducted by two University of Pennsylvania research assistants among clients waiting to be interviewed by an intake caseworker.

Prospective subjects were given information based on a script. They were told that this was a study about the psychological characteristics of families in shelter, that the interview would last for approximately 20 minutes, and that neither their decision to participate nor their answers would affect their application for shelter. Those expressing interest in participating were escorted to a semi-private area away from other staff and clients, where the research assistant would provide and explain the informed consent requirements and obtain the participant's signature in order to proceed. Because clients can submit multiple applications during the study enrollment period, research assistants asked clients, as part of their recruitment, whether they had already participated in the survey, with only those answering "no" being allowed to proceed. Twenty-seven percent of those approached agreed to be interviewed, and were surveyed immediately upon providing consent. Data are only available for individuals who consented to be part of

the study. Workers at PATH were not told who had consented to participate in the study. Eligibility for shelter was determined by DHS after the interview had taken place, and was conveyed to the research team via a data match.

Exclusion criteria are: (1) any head of household unable to provide informed consent because of a failure to understand the Informed Consent form; (2) any head of household already surveyed.

The survey was performed orally to remove literacy as a barrier to entry, although subjects could look at a paper copy of the survey for reference. Survey responses were entered directly into Qualtrics, an online survey tool for which the University of Pennsylvania has a license, by the research assistant using a laptop provided by the study. No client information was stored on a local computer as part of the recruitment and survey process.

There was no compensation for participation.

Data Storage

Once all questionnaires were entered into Qualtrics, all data were exported to a password-protected file on a password protected computer. Each client was assigned a unique study ID. To match survey data with administrative records, the study identifier and personal identifiers to be used for matching – name, date of birth, and social security number – were sent to DHS via a password-protected CD. DHS returned shelter records and the unique ID on a CD, but did not include personal identifiers in the returned file.

Completed consent forms were kept in a locked safe in a locked office at PATH during study enrollment. Since the completion of enrollment, consent forms have been maintained in a locked safe in a locked office at the University of Pennsylvania.

IRB Approval

The project has been reviewed and approved by Institutional Review Boards at the University of Pennsylvania and New York City's Department of Homeless Services. Additionally, a Memorandum of Understanding signed by the University of Pennsylvania's Office of Research Support Services and the Department of Homeless Services allowed access to the PATH and facilitated the sharing of data.

Human Subjects

Obtaining Informed Consent

Researchers presented potential study participants with an informed consent form prior to presenting them with the questionnaires. The consent form included a phone number for the project's co-investigator so the participant could ask any questions that the Research Assistant was unable to answer.

Risks and Benefits

There were minimal risks for study participants. There was no intervention or change in services for study participants, and personally identifiable information being collected on the questionnaire was already collected in the administrative data system.

While it was unlikely that study participants would benefit directly, the information gleaned from this study may improve the services available to all shelter residents in the future. Given the potential for improved and more targeted services to all future shelter residents, the benefit appears to outweigh the study's minimal risks.

Data and Measures

Data for this study come from two sources: a survey administered to families applying for shelter, and the CARES database. The survey, developed for this study, includes previously validated measures of three positive psychological constructs as well as questions about other demographic characteristics. Other background information recorded through the survey included the receipt of counseling for mental illness or substance abuse in the last year, current and recent employment information, and the number of places the family had lived in the previous year. CARES is a comprehensive database maintained by the Department of Homeless Services that tracks and records all shelter entries and exits, eligibility determinations, and demographic information.

Dependent Variables: Shelter

Shelter use is operationalized by:

- The number of cumulative days spent in shelter over the follow-up period
- Of families that exit shelter, the likelihood of reapplying for shelter

Cumulative days in shelter hereafter referred to as "length of stay" is calculated by subtracting shelter entry dates from shelter exit dates, and summing across a family's

shelter stays. There is no agency-mandated maximum length of a shelter spell, so while the shelter system requires a family to take steps to find permanent housing, a family may stay until it decides to leave. A family found eligible for shelter may leave at its own discretion, and upon leaving can reapply for shelter at any time. A distinct shelter stay begins with the submission of an application to shelter – referred to as a Temporary Housing Application (THA), and the end of a shelter stay is marked by an Exit date in CARES. A household's maximum possible length of stay for this study varied based on date of enrollment, and ranged from 441 to 538 days.

Independent Variables: Positive Psychological Capital

The individual-level capital of three positive psychological constructs – hope, resilience, and self-control – are the independent variables of interest in this analysis. Hope is measured using the Trait Hope Scale (C R Snyder et al., 1991). The scale has been used across a diverse group of populations with demonstrated reliability and validity (Babyak, Snyder, & Yoshinobu, 1993; C R Snyder et al., 1991; C.R. Snyder, Feldman, Taylor, Schroeder, & Adams, 2000; Snyder, C.R., Shorey, Hal S., Cheavens, Jennifer, Mann Pulvers, Kimberley, Adams III, Virgil H., Wiklund, 2002). The scale consists of twelve items and two subscales. Four items are part of an agency subscale, four are included in a pathways subscale, and four are distracters not included in computation of the score. Items are scored between 1 and 4, with the higher number indicating greater hopefulness; items scores are added and divided by 8 for the final scale score.

Resilience is measured using the Brief Resilience Scale, developed by Bruce Smith and colleagues in 2008 (Bruce W Smith et al., 2008). The scale has exhibited

strong internal reliability (.81 - .9) and concurrent, discriminant, and predictive validity across studies and populations (Bruce W Smith et al., 2008; Windle et al., 2011). The Brief Resilience Scale consists of 6 items measured on a 5-point scale with higher scores indicating greater resilience; scores from each item are added and divided by 6 for a final scale score.

Self-control is measured using The Brief Self-control Scale, using 13-items rated on a 5 point scale ranging from 1 (Not at all like me) to 5 (Very much like me); score items are added and divided by 13 to obtain the final scale score. It has demonstrated acceptable reliability (Cronbach's alphas between .83 and .85) and validity across populations (Malouf et al., 2014; Tangney et al., 2004).

Control Variables: Client background variables

Client demographic data are captured through the survey and DHS administrative records. Self-reported data provided through the survey include the number of places a family has lived in the past year, date of birth for the head of household, and whether the head of household has participated in counseling for any substance abuse or mental illness over the past year. CARES supplies date of birth, gender, race, and ethnicity for the head of household, and the number of adults and children in the family. Age and family composition used in analyses was calculated at the date of enrollment. CARES contains four race codes – white, black or African-American, Asian, and Native Hawaiian or other Pacific Islander; these categories were recoded as white, black, or "other" for the purposes of simplicity in the analysis. Ethnicity is defined by whether or

not the head of household identifies as Hispanic or Latino. Gender is coded as male or female.

Analysis

Survival analysis, a set of statistical methods well-suited to examining the timing, occurrence, and duration of events, is employed to examine shelter use by families subsequent to being surveyed.

Tobit models are used to estimate total number of days spent in shelter during the follow-up period. Tobit models estimate linear relationships between variables when the dependent variable is censored; coefficients are interpreted similarly to those in OLS regression, except that tobit regressions model the relationship with the uncensored length of stay, rather than the observed outcome (Allison, 2010; Mcdonald & Moffitt, 1980). To account for the fact that clients have different exposure times based on when they applied for shelter, the number of days in shelter is right-censored based on the potential length of stay of a family that enrolled in the study on the last day of recruitment: 441 days; there is no lower limit. There is a separate model for each trait as well as one model that includes all three as separately estimated parameters. All models include the age, ethnicity, and race of the head of household, the number of adults and children in the family, the number of residences in which the family lived in the year prior to study enrollment, and dummy variables for whether the head of household received counseling for substance abuse or mental illness in the year prior to study enrollment. As an example, the impact of resilience score on length of stay is modeled as:

$$LOS = \alpha + \beta_1 Resilience + B_2 Age + \beta_3 Female + \beta_4 Black + \beta_5 Other + \beta_6 Hispanic + \beta_7 Numberof Adults + \beta_8 Numberof Children + \beta_9 Numberof Residences + \beta_{10} S.A. Counseling + \beta_{11} M.I. Counseling$$

Cox proportional hazard models are used to assess the impact of psychological traits on the hazard rates of shelter re-entry among families that exit. Because Cox models do not require an assumption of the probability distribution, they are more robust and therefore more frequently used than similar procedures (Allison, 2010; Fox, 2002; Hosmer, Lemeshow, & May, 2008). Similar to the above tobit model, there is a separate model for each trait as well as one that includes all three as separately estimated parameters; the same control variables are included. As an example, the impact of resilience score on probability of shelter re-entry is modeled as:

$$h(t) = \lambda(t)\, exp(\beta_1 Resilience + B_2 Age + \beta_3 Female + \beta_4 Black + \beta_5 Other + \beta_6 Hispanic + \beta_7 \#Adults + \beta_8 \#Children + \beta_9 \#Residences + \beta_{10} S.A. Counseling + \beta_{11} M.I. Counseling)$$

where $h(t)$ is the hazard rate of re-entry, and $\lambda(t)$ – the baseline hazard of an individual with values of 0 on all covariates - is unspecified.

Stata version 13 is used for all data matching and analyses.

RESULTS

Of the 276 sampled heads of household, 251 (91%) were women. Most were non-Hispanic (64%) and African-American (74%). The average age was 31.7 years old, and the average family consisted of 1.2 adults and two children. A minority had received treatment for a mental illness (23%) or substance abuse disorder (5%) within the last year.

Table 1: Baseline Demographic Characteristics		
	#	%
Female Head of Household	251	90.9%
Race		
White	60	21.7%
Black	203	73.6%
Other	13	4.7%
Ethnicity		
Hispanic	100	36.2%
Behavioral Health Conditions		
Received counseling for mental illness	62	22.5%
Received counseling for substance abuse	13	4.7%
	Mean	SD
Age	31.72	8.6
# of Adults in Household	1.2	0.49
# of Children in Household	1.98	1.3
# Places Lived in the Last Year	2.09	1.66

The reliability of the three scales was measured using Cronbach's alpha. Hope and self-control each had a reliability of .79; resilience had an alpha of .69. The average resilience score was 3.49 out of 5; the average hope score was 6.71 out of 8, and the average self-control score was 4.06 on a 5-point scale.

Table 2: Positive Psychological Trait Measurements			
	Mean	SD	α
Brief Resilience Scale (1-5 scale)	3.49	0.75	0.69
Trait Hope Scale (1-8 scale)	6.71	0.97	0.79
Brief Self-control Scale (1-5 scale)	4.06	0.66	0.79

Shelter Usage

Of the 276 families found eligible for shelter, the number of nights spent in shelter during the follow-up period ranged from 3 to 537, and averaged 311 nights; this includes nights from all stays in shelter during the follow-up. The majority (214, 77.5%) have a recorded shelter exit; of them, 68 (31.8%) returned to shelter, an average of 87.3 days after their initial exit.

Determinants of Length of Stay

The effect of each psychological characteristic was evaluated through a separate tobit model as well as a model that combined all three traits. Hope ($p<.05$) had a significant negative impact on the number of days spent in shelter in the separate models, with a one-point increase associated with a 35-day reduction in shelter use. The impact of resilience on shelter use was of similar magnitude, 32 days for each point increase on the Brief Resilience Scale, but only significant at the less stringent $p < .10$ threshold. Across the three models, additional children and having received counseling for substance abuse are associated with significant increases in shelter use, while mental health treatment is

Table 3: Tobit Model Estimates

	Model 1			Model 2			Model 3			Model 4		
	Coefficient		t-score	Coefficient		t-score	Coefficient		t-score	Coefficient		t-score
Intercept	370.93		2.83	297.75		2.60	298.41		2.5	449.33		3.13
Age	0.93	*	-0.06	-0.28		-0.15	-0.02		-0.01	0.06		0.03
Race - Other	23.59		0.34	26.07		0.38	28.86		0.42	21.53		0.31
Race – Black	9.12		0.27	13.65		0.40	17.67		0.52	15.49		0.46
Female Head of House	71.21		1.49	66.04		1.38	74.49		1.56	67.61		1.42
Number of Adults	33.27		1.19	38.57		1.37	34.52		1.23	36.86		1.32
Number of Children	28.95	***	2.64	30.28	***	2.75	31.13	***	2.92	31.89	***	2.83
Number Places Lived	-0.95		-0.11	-2.70		-0.31	-1.20		-0.14	-2.10		-0.24
Mental Health Counseling	-60.23	*	-1.71	-60.21	*	-1.68	-58.77	*	-1.64	-73.73	**	-2.02
Substance Abuse Counseling	132.98	*	1.92	152.03	**	2.16	132.61	*	1.91	141.83	**	2.02
Hope	-34.59	**	-2							-24.98		-1.34
Resilience				-32.33	*	-1.68				-19.27		-0.94
Self-Control							-33.39		1.52	-18.34		-0.79

* p<.10; **p<.05; ***p<.01

associated with a reduction in length of stay. In the model with all three traits, the magnitude of the effect of each of the three psychological constructs decreases and the statistical significance of hope disappears. A test of the joint significance of the hope, resilience, and self-control measures was not statistically significant. The direction, magnitude, and significance of having received Substance Abuse and Mental Health counseling, as well as the number of children, remained the same.

Recidivism

Models five, six, and seven test the relationship between hope, resilience, and self-control, respectively, on the likelihood of a family's return to shelter after an exit; model eight includes all three. None of the psychological traits are significant, alone or in the combined model. The age of the head of household is the only variable with a significant impact on recidivism, which it has in all three models; increasing age is associated with a reduction in the hazard rate of returning to shelter.

Table 4: Cox Proportional Hazard Models

	Model 5		Model 6		Model 7		Model 8	
	Hazard Ratio	z-score	Hazard Ratio	z-score	Hazard Ratio	z-score	Hazard Ratio	z-score
Age	0.95 ***	-3.09	0.95 ***	-3.12	0.95 ***	-2.90	0.95 ***	-2.90
Race - Other	0.54	-1.00	0.53	-1.01	0.54	-0.98	0.54	-0.98
Race - Black	0.96	-0.17	0.97	-0.10	1.05	0.17	1.06	0.20
Female Head of House	1.05	0.12	1.05	0.11	1.06	0.15	1.07	0.16
Number of Adults	1.04	0.18	1.06	0.25	1.07	0.31	1.07	0.30
Number of Children	1.06	0.64	1.06	0.66	1.09	1.00	1.10	1.01
Number Places Lived	1.07	1.19	1.07	1.08	1.07	1.02	1.07	1.00
Mental Health Counseling	1.15	0.49	1.12	0.40	1.00	0.02	1.02	0.05
Substance Abuse Counseling	1.19	0.35	1.25	0.44	1.17	0.30	1.17	0.29
Hope	0.96	-0.34					1.03	0.18
Resilience			0.92	-0.52			1.00	-0.01
Self-Control					0.75 *	-1.68	0.74	-1.60

* p<.10; **p<.05; ***p<.01

DISCUSSION

This study is the first to examine the relationship between positive psychological capital and homelessness, and uniquely contributes to the literature in two ways. First, the longitudinal nature of the study allows for examination of the relationship between positive psychological capital and shelter use dynamics. While prior work has examined the connection between shelter patterns and demographic factors, housing and work history, and psychosocial characteristics that may hinder economic and housing stability, this is the first to account for individual-level strengths. Second, it provides a baseline understanding of the psychological strengths of homeless families relative to other populations.

Consistent with previous studies examining the impact of positive psychological traits on social policy outcomes, two of the three tested constructs – hope, and to a lesser extent, resilience - were significantly negatively associated with the number of days spent in shelter during the follow-up period. These relationships are meaningful to the extent to which they either predict shelter use for the targeting of services or that positive psychological characteristics associated with shelter use can be enhanced to facilitate exit from shelter. To the first point, this study does not provide evidence that hope, resilience, or self-control predict shelter use: the tobit models each predict less than one percent of the variance in length of stay.

There is, however, preliminary evidence that low-burden, low-cost interventions can improve levels of positive psychological capital, specifically hope and resilience (Cheavens, Feldman, Gum, Scott, & Snyder, 2006; Martin E P Seligman et al., 2005; Sin

& Lyubomirsky, 2009). Luthans, Avey, and Patera (2008) found that a short web-based intervention improved hope through a randomized controlled trial, and Cheavens and colleagues (2006) used a quasi-experimental evaluation to find that hope was improved through eight 2-hour sessions focusing on building hope and assessing strengths. Green, Oades, and Grant assessed long-term impacts of a 10-week cognitive-behavioral coaching group program, and found through a randomized controlled trial that the intervention improved hope, as well as goal striving and well-being, for 30 weeks after the intervention ended (Green, Oades, & Grant, 2006).

There is less evidence for the responsiveness of resilience to intervention, although what has been published is encouraging. Only two studies have evaluated the impact of an intervention on a scale measuring resilience (Southwick, Pietrzak, White, & Friedman, 2011; Steinhardt & Dolbier, 2010; Windle et al., 2011). Connor and Davidson, in their study validating a new scale, found that a targeted training improved resilience among adults suffering from PTSD (Connor & Davidson, 2003). Steinhardt and Dolbier, using a randomized controlled trial, found that four 2-hour weekly sessions of a resilience-focused intervention significantly improved resilience compared to a control group (Steinhardt & Dolbier, 2010). Additional studies have found positive impacts of intervention on characteristics, like hardiness and social support, correlated with resilience (Southwick et al., 2011).

Beyond assessing the relationship between hope, resilience, self-control, and shelter use, this study examines the psychological characteristics of homeless families in the context of other demographic and socioeconomic groups for which these scales have been administered. Most articles do not publish summary statistics for the scales,

including only their relationships with other variables of interest, but those that do provide context for understanding the psychological strengths of this study sample. Scores from the three scales administered in this study were compared to those in other studies that published summary statistics for the same scales. Hope scores were compared to those of newly admitted college freshmen (Snyder, C.R., Shorey, Hal S., Cheavens, Jennifer, Mann Pulvers, Kimberley, Adams III, Virgil H., Wiklund, 2002) and undergraduate athletes and non-athletes (Curry et al., 1997); scores on the Brief Resilience Scale were compared to undergraduates and cardiac rehabilitation patients (Bruce W Smith et al., 2008); and Brief Self-Control scores were compared to undergraduate college students (Tangney et al., 2004). There were no statistically significant differences between the scores of homeless heads of household and those of other populations for which there is available data.

Limitations

As the first quantitative assessment of the psychological strengths of homeless families and their impacts on shelter use dynamics, its findings come with significant limitations. Because the study takes place in New York City, a unique policy setting regarding homelessness, it may be difficult to generalize to other localities. New York has the largest homeless population in the United States, double the next highest locality and, unlike almost all other municipalities, it guarantees a right to shelter and no maximum length of stay. New York's average length of a shelter stay is over 400 days, more than ten times the national average (City of New York, 2014; The U.S. Department of Housing and Urban Development, 2015). The findings may also be sensitive to the

time period in which the study takes place, and the policy regimes or circumstances of another period may yield different results.

The study is also limited in its ability to assess the psychological strengths of homeless families beyond the three measures used here. Other measures of hope, resilience, and self-control may yield different assessments of these characteristics, in both absolute terms and compared to other populations. More broadly, this study does not represent how these families would fare on scales measuring other psychological constructs. While prior research has indicated moderate and high correlations between positive psychological traits, there is no evidence that those relationships would reliably remain true for this population or that other constructs would demonstrate the same relationships with shelter use as hope, resilience, and self-control (Luthans, Avolio, Avey , B, & Norman, 2007).

Future Research

The limitations outlined above and the preliminary nature of this study suggest the need for additional research. As a first assessment of the strengths of homeless families, more research with larger samples in other settings examining these and other positive psychological attributes is necessary to substantiate these preliminary findings. It also contributed little to the accuracy of predictions of the length of time that a family spends in shelter or the likelihood that they will return after exiting, and the need for additional development of predictive models, with and without the incorporation of positive psychology, persists.

More research is also needed to assess the impact of interventions seeking to boost positive psychological characteristics. While there is evidence for the malleability of these traits generally, there is little evaluating any single treatment or impacts on any one trait. The five studies assessing interventions that address hope and resilience are encouraging, but more is needed to corroborate their findings and establish best practices. In addition, there is no research assessing the impact of these changes on social and economic phenomena, like homelessness, of importance to policymakers. This work would guide researchers and policymakers seeking new methods, like the enhancement of positive psychological characteristics, to improve social policy outcomes.

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