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Perceived Efficacy and Control for Neighborhood Change: The Cross-Cutting Role of Collective Efficacy

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Abstract

Background—The premise of community advocacy is to empower residents by increasing their capacity to address and change neighborhood and structural factors that contribute to adverse health outcomes. An underlying assumption is that community residents will advocate for public policy and other changes. However, limited empirical evidence exists on community residents'

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perceived ability to advocate for neighborhood change. In this study, we characterized perceived neighborhood control and efficacy for neighborhood change and evaluated independent associations between efficacy and control beliefs and sociodemographic factors, community involvement, and perceptions of social environment.

Methods—Cross-sectional data from 488 African American adults were analyzed to describe efficacy and control beliefs and to characterize bivariate associations between these beliefs and sociodemographic factors, social environment, community involvement variables. Variables with significant relationships ($p < .10$) were included in a multivariate logistic regression model to identify factors having significant independent associations with efficacy and control beliefs.

Results—Overall, beliefs about neighborhood control and confidence were varied, yet approximately half of residents (49% and 55%, respectively) reported having a little control over things that happen in their neighborhood and a little confidence in their ability to change things where they live. The likelihood of reporting confidence to make neighborhood improvements increased with greater collective efficacy (OR=1.78, 95% CI=1.19-1.31, $p=0.002$). In addition, participants who were involved in a community organization were more likely to report confidence to improve their neighborhood (OR=2.03, 95% CI=1.21-3.42, $p=0.01$).

Conclusion—Efforts are needed to improve residents' ability to become positive agents of change in their community. Creating a research infrastructure within academic community partnerships that focus on strengthening advocacy and public policy may improve resident's efficacy and ability to seek and encourage neighborhood change.

Keywords

neighborhood; collective efficacy; African Americans; perception; social environment

Introduction

Active community advocacy is necessary to make improvements to the built environment that are necessary for residents to perform health promotion and disease prevention behaviors that are recommended by public health organizations and health care providers [1]. Advocacy for neighborhood changes typically involves mobilizing community residents in a collaborative, iterative process that increases their awareness and empowers them to take control of their health by promoting community changes and policies that support health promotion and disease prevention behaviors [2]. In doing so, community advocacy has the greatest potential to address important distal factors such as poverty, socioeconomic status, public policy, and institutional contextual factors, which are the fundamental causes of disparities in health outcomes [3]. Studies have identified useful social environmental strategies (e.g., forming coalitions, community engagement, community participation, and creating partnerships with organizations) [4, 5] for mobilizing communities for advocacy. The literature regarding these efforts, however, does not take into account the readiness to mobilize and initiate activities, and ultimately advocate for change among individual community residents [6].

Community readiness is a multidimensional construct consisting of psychosocial characteristics such as community attachment, initiative, efficacy, and leadership [7], as well

as hope and collective efficacy [8]. Hope for neighborhood change encourages individuals to take action [9], while collective efficacy reflects individual beliefs about the extent to which the groups in which they live are able to develop and implement actions that are needed to achieve desired outcomes [10,11]. An underlying premise of collective efficacy is that individuals believe that they can control and influence things that happen where they live. Collective efficacy predicts residents' level of participation in neighborhood efforts particularly in low-income neighborhoods [12]. Prior studies have shown that the neighborhoods in which many African Americans live are unfavorable to health promotion and disease prevention behaviors (e.g., diet and physical activity);[13-15] efficacy and control beliefs about neighborhood change may be important to community residents' willingness and ability to advocate for public policies that support healthy behaviors and thus healthy communities. When community members are actively engaged in neighborhood improvement efforts, their ability to execute a behavior (e.g., take action) is greater because they feel a sense of empowerment, and thus perceive that their community is ready to implement neighborhood policy changes [7,16]. Furthermore, it is perceptions of community readiness, neighborhood capacity for change (i.e. leadership and connectedness), and neighborhood social and physical environment that determine the extent to which residents become involved in neighborhood efforts [8].

While studies have shown that resident perceptions are important for citizen participation and the active role of leaders depends on the skills they perceive they possess to organize residents and achieve neighborhood changes [8], empirical data are limited on the degree of confidence that community residents have to change their neighborhood and their level of control over things that happen where they live. Therefore, the objective of this research was to characterize perceived efficacy and control beliefs about neighborhood change in a community-based sample of African Americans who were residents in an urban area. Our study was guided by a social determinants of health and racial disparities (17, 21), which posits that variables such as social cohesion and perceptions of the physical environment in which individuals reside are critical determinants of outcomes. Social factors, in turn, are associated with socioeconomic characteristics such as income, marital status, and education. We evaluated the relationship between perceived efficacy and control beliefs for community change and sociodemographic factors to identify variables having significant independent associations with these beliefs. We predicted that greater neighborhood satisfaction, community involvement, and collective efficacy would be associated positively with perceptions of neighborhood control and confidence to make neighborhood improvements. Developing a better understanding of perceived efficacy for neighborhood change is important for identifying individuals who may be the most ready to advocate for public policy changes following interventions and programs that are developed through academic-community partnerships.

Methods

Study Population

This research was conducted as part of an academic-community partnership; detailed information about study participants and interventions have been reported previously [18,

19]. A total of 530 individuals were recruited to participate in the study. For the present analysis, eligible participants were African Americans adults (18-75) who were residents in the Philadelphia, PA metropolitan area; residency was determined by self-report using zip code. Individuals could not have a personal history of cancer or have had a heart attack, stroke, or heart disease to be eligible for participation. We also excluded individuals who were enrolled in a weight loss program. Participants were recruited into the study from September 2009 to August 2012. The final sample for the present study was 488 (92% of the total study population) who had complete data on control and efficacy beliefs. This study was approved by the Institutional Review Boards at the University of Pennsylvania and the Medical University of South Carolina. Verbal informed consent was obtained for completion of the baseline telephone interview from all participants included in the study.

Procedures

Participants were recruited into the study through self-referrals from community-based resources [20]; following self-referral, a screening interview was completed to determine eligibility; eligible individuals completed a 30-minute structured baseline telephone interview. The baseline telephone interview obtained information on sociodemographic characteristics, health care resources, community involvement and collective efficacy, and perceived efficacy and control for neighborhood change. The baseline was conducted by research assistants at the University of Pennsylvania after obtaining verbal informed consent. At the end of the baseline, participants were invited to attend a lifestyle behavioral intervention that targeted diet and physical activity [19]. Those who accepted the invitation to participate in the intervention were randomized to one of two risk education interventions: integrated or disease-specific risk education. Information about the content and delivery of the risk education interventions has been described elsewhere [19]. Behavioral outcomes were evaluated at 1-, 6- and 12-months following these interventions. Since our interest in this report was on perceived efficacy and control for neighborhood change at baseline, we only included participants who had baseline data on these variables.

Measures—The measures described below were examined in this study based upon variables that are important social determinants of racial disparities and health outcomes [17, 21].

Sociodemographic factors: Gender, age (mean), marital status (married, non-married), education level, (high school or high school) employment status (employed, unemployed), and income (<\$20,000, >\$20,000) were obtained by self-report during the baseline telephone interview. We created dichotomous variables for these characteristics based on the distribution of responses (see Table 1).

Community involvement: We asked participants to report the number of community organizations to which they belonged using a validated open-ended item from the Health Information Trends National Survey (HINTS) [22]. We were interested in knowing if participants were involved in community organizations because community involvement is a valuable component of the participatory research process and social networks, which are defined in part through participation in community organizations, and are important to

health and behaviors [23]. We recoded responses to this variable as none versus one or more to indicate the presence or absence of participation in community organizations.

Social environment: Social environment was measured in terms of how individuals perceive the cohesiveness and physical resources of the neighborhoods in which they live using the collective efficacy scale (CES) and the neighborhood satisfaction of the Neighborhood Environment Walkability Scale (NEWS). The CES measures perceptions of the extent to which neighborhood residents are cohesive and connected to each other using eight Likert style scale items. The CES has been used extensively to measure social capital in racially diverse samples [11, 24]. The CES had good internal consistency in our sample (Cronbach's alpha=0.79). Sample items from CES included: 1) this is a close-knit neighborhood; 2) people generally don't get along; and 3) neighbors do something if kids hang out. The NEWS is a 17-item Likert-style scale that measures how satisfied individuals are with city services, safety, access to food resources and shopping, and traffic and noise levels [25]. The NEWS had good internal consistency in our sample (Cronbach's alpha=0.87). Examples of items from the NEWS scale include: 1) It is easy to walk to a transit stop (bus, train) from my home, 2) The distance between intersections in my neighborhood is usually short, and 3) The sidewalks in my neighborhood are well maintained.

Perceived neighborhood control: We measured how much control individuals believe they have over things that happen in their neighborhood with one Likert-style item that asked them to indicate how much control they have over things that happen in their neighborhood (1=not at all, 2=a little, 3=a lot). This item was adapted from validated measures of beliefs about cancer control [22]. We re-coded the responses to this variable as control or no control.

Perceived efficacy for neighborhood change: Perceived efficacy for neighborhood change was measured using a Likert-style item that asked participants: "how confident are you that you can improve your neighborhood" (1=not at all, 2=a little, 3=a lot). This item was adapted from an item that was validated as part of a national survey of cancer-related beliefs (e.g., HINTS). We used this item in our previous research to measure self-efficacy, or confidence, to perform cancer screening in a national sample of adults [25]. We re-coded the responses to this variable as confident or not confident.

Data Analysis

First, we generated descriptive statistics to characterize participants in terms of sociodemographic factors, social environment, community involvement, and perceived efficacy and control beliefs. We then used chi square tests of association and T-tests, respectively, to evaluate the bivariate relationship between efficacy and control beliefs and dichotomous and continuous sociodemographic factors, social environment, community involvement variables. Last, we generated a multivariate logistic regression model to identify factors having significant independent associations with efficacy and control beliefs. Separate models were generated for each of these beliefs; variables that had a $p < 0.10$ association with efficacy and control beliefs in the bivariate analysis were included in the

regression model for that belief variable. These variables were entered into the multivariate logistic regression models simultaneously.

Results

Table 1 shows the characteristics of the study sample and descriptive data on efficacy and control beliefs. Fifty-nine percent of participants were female, 88% were not married, and 51% were high school graduates or had less education. Fifty-two percent of participants had an annual household income that was less than \$20,000 and 79% had health insurance. The mean (SD) age of participants was 48.2 (10.7). Beliefs about neighborhood control and confidence were varied. About one-third of participants reported that they had no control over things that happen in their neighborhood, 49% reported a little control, and 15% reported a lot of control. In contrast, 16% of participants reported no confidence in their ability to change things where they live, 55% reported a little confidence, and 30% reported a lot of confidence. We re-coded beliefs about control and confidence into dichotomous variables to identify individuals who were most likely to report at least a little control and confidence (a little/a lot) versus those who reported no control and confidence (not at all) in subsequent analyses.

Tables 2 and 3 show the results of the bivariate analysis of perceived control and confidence. With the exception of age, none of the sociodemographic factors were associated significantly with perceived confidence. Participants who were confident in their ability to improve their neighborhood were significantly older in age (Mean [SD]=48.9 [10.5]) compared to those who were not confident (Mean [SD]=44.8 [11.3]) [$t=-3.11$, $p=0.002$]. In addition, participants who belonged to at least one community organization were significantly more likely to report confidence for neighborhood change compared to those without any community involvement. Both collective efficacy and neighborhood satisfaction were associated significantly with perceived efficacy for neighborhood change; participants who were confident in their ability to improve their neighborhood had greater levels of collective efficacy and neighborhood satisfaction compared to those who were not confident (see Table 3).

Collective efficacy and neighborhood satisfaction had similar associations with perceptions of neighborhood control. Participants who reported control over the things that happen where they live had significantly greater levels of collective efficacy and neighborhood satisfaction compared to those who reported no control. In addition, participants who were involved in at least one community organization were significantly more likely to report control over their neighborhood compared to those who were not involved in any community organizations. Lastly, participants who had greater sociodemographic resources (e.g., were employed, more education) were significantly more likely to report control over things that happen in their neighborhood compared to those with fewer resources.

Table 4 shows the results of the multivariate model of perceived efficacy and control. Participants who had at least some college education were 1.72 times more likely to report control over things in their neighborhood compared to those with fewer years of formal education (95% CI=1.11-2.65, $p=0.02$). The likelihood of reporting neighborhood control

was also increased with greater levels of collective efficacy (Odds Ratio=1.57, 95% CI=1.23-2.01, $p=0.02$). Greater levels of collective efficacy were also associated with an increased likelihood of being confident to make neighborhood improvements (OR=1.78, 95% CI=1.19-1.31, $p=0.002$). In addition, participants who were involved in community organizations had a 2.03 increased likelihood of being confident to make neighborhood improvements compared to those who were not involved in community organizations (95% CI=1.21-3.42, $p=0.01$).

Discussion

This study characterized perceived confidence to make neighborhood improvements and perceptions of control over things that happen in one's neighborhood in a community-based sample of African Americans residents in an urban area. This study presents novel empirical data on beliefs about neighborhood efficacy and control; we found a high degree of variability in these beliefs. About one-third of residents reported no control over the things that happen where they live and 16% reported no confidence in their ability to change things in their neighborhood. Approximately, half of participants reported a little confidence (55%) and control (49%) over neighborhood change and activity. Only 15% of participants reported a lot of control over things that happen in their neighborhood and 30% reported a lot of confidence to change things where they live. This could be due to a lack of collective or neighborhood awareness about the social and political procedures that are involved in developing, implementing, and evaluating public policies or limited capacity to engage in activities to improve or control things that happen in one's neighborhood.

Self-efficacy is often targeted as a part of health behavior interventions; a primary goal of these approaches is to improve an individual's perception of their confidence to make health behavior changes [26]. But, community level changes are necessary for these behavioral changes to be sustained. Residents are in the best position to advocate for these changes as constituents of elected officials and government groups. We did not measure participation in advocacy efforts, but the modest levels of perceived control and confidence suggest that participants in this study may not be prepared to engage in efforts to improve or control things in the neighborhoods in which they live. Our findings suggest that greater efforts may be needed to enhance perceived neighborhood confidence to improve living conditions and control things that happen in the neighborhood.

Perceived neighborhood control and confidence are important aspects of community empowerment, [27, 28] but it is unclear how much confidence and control are needed for individuals to take active steps to advocate for changes in their neighborhood. At a minimum, individuals have to be involved in community organizations and activities; the extent of residents' participation in community organizations such as neighborhood decision-making and perception of control over sociopolitical and neighborhood policy has been linked to beliefs about the local leadership's competence and policy control [29]. Other work has shown that for minority groups, political knowledge is gained through group mobilization [30]. In this study, 65% of participants belonged to at least one community organization; community involvement was associated significantly with an increased likelihood of being confident in one's ability to improve their neighborhood. This finding

suggests that ongoing individual-level community involvement reinforces perceived neighborhood confidence. A study by Itzhaky & York [31] supports this finding by showing that residents' involvement in organizational activities correlates with both personal and community control. Individuals that participate in social and civic activities perceive greater control when they are involved in the decision making process especially as a representative of the community [31, 32]. When individuals are engaged in activities that focus on improving aspects of the neighborhood environment, they feel more confident and empowered [31]. Having a greater sense of community in urban environments, according to Chavis & Wanderman [33], influences community involvement and drives perceptions of one's environment, interpersonal relationships, and perceived neighborhood control and empowerment.

Our study adds to the literature on citizen participation and community readiness by identifying factors that may act as barriers or facilitators to residents' involvement in advocacy efforts. In this study, collective efficacy and participation in community organizations were associated significantly with perceived confidence. Research shows that residents become actively engaged in advocacy efforts when they perceive their neighborhood has the capacity or infrastructure to support and mobilize residents and residents perceive change is possible and are willing to get involved in collective action [8, 12]. That said, creating coalitions to address neighborhood problems through advocacy is influenced by collective beliefs such as perceived control and confidence to control what will occur in neighborhoods and the extent of residents' participation in neighborhood activities depends on their psychological investment [8]. Studies have shown that collective efficacy partially mediates the relationship between sense of community (e.g., perceived connectedness with neighbors) and neighborhood norms for action [8]. We found that collective efficacy had significant associations with both perceived confidence and control over one's neighborhood. For instance, greater levels of collective efficacy were associated with an increased likelihood of participants perceiving they could improve their neighborhood and control things that happen where they live. Thus, individuals who have a greater sense of community engage in neighborhood action [34] based upon their perceived confidence to improve neighborhood factors and control neighborhood problems [8]. We also found that education and collective efficacy were associated significantly with control beliefs. These results support findings that perceptions of collective readiness encourage collective action [12]. Furthermore, they highlight the cross-cutting role of collective efficacy and the importance of one's beliefs about their level of control over their external events and environments and their perceived confidence to improve the neighborhoods in which they live. In contrast to our hypothesis and the results of the bivariate analyses, neighborhood satisfaction did not have a significant independent association with either neighborhood efficacy or control in the multivariate model. The lack of an association between neighborhood satisfaction and efficacy and control beliefs in the multivariate analyses may be due shared variance with collective efficacy, which suggests collective efficacy may be a stronger correlate of these beliefs than satisfaction with the physical environment in which one lives. Nevertheless, aspects of the built environment may still be important to perceptions of neighborhood confidence and control. The design of neighborhoods has been shown to affect social capital, particularly how socially engaged

residents are in the community, whether they know their neighbors, engage politically, and trust one another [35]. Participants with greater collective efficacy may have felt more connected to their community and trusted in the tangible and intangible resources it provided to them including a sense of well-being. This may mean that communities that are socially cohesive provide underserved and vulnerable groups greater interdependence, which builds individual perceptions of neighborhood control and confidence.

Our study identified factors that are associated with beliefs that individuals have about how much control they have over where they live and their confidence to make neighborhood improvements. This is important because efficacy and control beliefs may influence the extent to which residents are willing and able to advocate for neighborhood changes that are needed to support healthy behaviors. Regardless, there are some limitations that should be noted. First, we measured neighborhood efficacy and control in a modest community-based sample that was recruited from one geographic area. It is likely that these beliefs differ among residents in other geographic areas; thus, additional research is needed to characterize these beliefs among residents in other geographic areas. Second, we recruited participants through self-referrals from community resources. Our decision to use these recruitment strategies was because we wanted a sample of community residents. Furthermore, our previous research has shown that these methods are effective at enrolling a sample of African Americans that is demographically representative of our target population [28]. An additional limitation is that we measured community involvement based on participation in community-based organizations. Additional research is needed to evaluate the association between efficacy and control beliefs and other dimensions of community involvement. Lastly, although the items we used to measure control and efficacy beliefs had acceptable face validity, these items have not yet been validated using psychometric methods and participants were not given a specific reference point for reporting beliefs about their neighborhood. Additional research is needed to determine the convergent and discriminant validity of the items we used to measure control and efficacy beliefs.

A central purpose of community-based participatory research (CBPR) is to increase the relevancy of health behavior and lifestyle interventions through a better understanding of the needs, priorities, and resources in a community and to translate this information into interventions and actions that benefit the community [36]. Thus, CBPR approaches are increasingly being used to address individual, social, and community level factors that contribute to racial and ethnic disparities in health outcomes [37, 38]. As part of these efforts, academic investigators and community-based organizations work collaboratively to identify the health priorities and concerns of community residents, develop, implement, and evaluate interventions that are ultimately implemented in neighborhoods [18, 19, 39]. The findings from this study enhance our understanding of perceptions that foster or inhibit community members being actively engaged in advocating for public policy changes that are necessary to improve the built environment to promote healthy lifestyles. Although the majority of participants reported some level of community involvement, few were confident in their ability to control or improve their neighborhood. Observing moderate levels of efficacy and control among residents in this study suggests a need to place greater emphasis on preparing community residents to advocate for public and policy changes that are necessary to promote physical activity and healthy eating. This can be achieved by focusing

on community capacity building by providing advocacy trainings as part of the interventions that are developed through academic-community partnerships; developing an advocacy agenda, developing a strategic plan, and creating community-driven policies that empower residents. Since academic community partnerships foster the development, implementation, and sustainability of meaningful neighborhood change, it is critical that these efforts focus on translating research findings into action that will improve residents' ability to become positive agents of change in their community.

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Table 1**Sample Characteristics (n=488)**

Variable	Level	n (%)
<i>Sociodemographic Characteristics</i>		
Gender	Male	201 (41%)
	Female	287 (59%)
Marital status ^a	Married	58 (12%)
	Not married	429 (88%)
Education level	Some college	237 (49%)
	High school	251 (51%)
Employment status ^a	Employed	163 (34%)
	Not employed	321 (66%)
Income level	> \$20,000	218 (48%)
	< \$20,000	235 (52%)
Age	Mean (SD)	48.8 (10.7)
Health insurance ^a	Yes	383 (79%)
	No	103 (21%)
<i>Social Environment</i>		
Community organization ^a	One or more	316 (65%)
	None	170 (35%)
Collective efficacy	Mean (SD)	3.3 (0.63)
Neighborhood satisfaction	Mean (SD)	3.6 (0.70)
<i>Efficacy and Control Beliefs</i>		
Control	Not at all	177 (36%)
	A little	238 (49%)
	A lot	73 (15%)
Efficacy ^a	Not at all	77 (16%)
	A little	266 (55%)
	A lot	144 (30%)

^aTotal n will vary due to missing data.

Table 2
Bivariate Analysis of Neighborhood Efficacy and Control Beliefs

Variable	Level	Perceived Efficacy		Perceived Control	
		% Confident	Chi Square	% Control	Chi Square
<i>Sociodemographic Characteristics</i>					
Gender	Male	86%	0.91	62%	0.61
	Female	83%		65%	
Marital status	Married	88%	0.70	66%	0.10
	Not married	84%		63%	
Education level	Some college	85%	0.13	72%	14.14**
	High school	84%		56%	
Employment status	Employed	83%	0.39	71%	6.34**
	Not employed	85%		60%	
Income level	> \$20,000	86%	0.52	72%	9.25**
	< \$20,000	83%		58%	
Health insurance	Yes	84%	0.01	66%	0.28
	No	85%		63%	
Community organization	One or more	88%	13.31**	68%	7.75**
	None	76%		55%	

**
p<.10

Table 3
Bivariate Analysis of Neighborhood Efficacy and Control Beliefs with Social Environment

Variable	Perceived Efficacy Mean (SD)		Perceived Control Mean (SD)	
	Confident	Not confident	Control	No Control
Collective efficacy	3.3 (0.61)	2.9 (0.62)	3.4 (0.62)	3.0 (0.59)
	$t=-5.90^{***}$		$t=-5.99^{***}$	
Neighborhood satisfaction	3.7 (0.68)	3.3 (0.75)	3.7 (0.67)	3.5 (0.73)
	$t=-3.90^{***}$		$t=-3.29^{**}$	

**
 p<.05;

 p<.001

Table 4
Multivariate Regression Model of Neighborhood Efficacy and Control Beliefs

Variable	Level	OR	95% CI	p-value
<i>Perceived Control</i>				
Education level	Some college	1.72	1.11, 2.65	0.02 **
	High school	1.0		
Employment status	Employed	1.38	0.84, 2.26	0.20
	Not employed	1.0		
Income level	> \$20,000	1.30	0.82, 2.06	0.26
	< \$20,000	1.0		
Age	***	1.16	0.93, 1.03	0.18
Community organization	One or more	1.29	0.84, 1.98	0.25
	None	1.0		
Collective efficacy	***	1.57	1.23, 2.01	0.0003 ***
Neighborhood satisfaction	***	1.14	0.90, 1.44	0.27
<i>Perceived Efficacy</i>				
Age	***	1.22	0.94, 1.57	0.13
Community organization	One or more	2.03	1.21, 3.42	0.01 **
	None			
Collective efficacy	***	1.78	1.19, 1.31	0.002 ***
Neighborhood satisfaction	***	1.23	0.92, 1.63	0.15

**
p<.05;

p<.001