



# Enhancing Athletic Identity and Perceived Physical Ability Through Organized Running Events: Implications for Health Behavior

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## Abstract

Insufficient exercise and obesity remain significant public health concerns. Identity theory and self-efficacy theory provide frameworks for understanding health behavior, suggesting that athletic identity and perceived physical ability influence exercise participation. Community running events offer practical opportunities for identity development and efficacy enhancement, yet their psychological and behavioral impacts remain underexplored. This study examined changes in athletic identity and perceived physical ability associated with participation in a trail running event and explored relationships among these constructs and self-reported health behaviors. Participants in a trail race completed surveys assessing athletic identity, perceived physical ability, and health behaviors pre-event and post-event. Significant increases were observed for athletic identity and perceived physical ability, but not for health behaviors. Athletic identity was found to predict self-reported health behaviors. These findings suggest that participatory sports events such as running races function as interventions for strengthening psychological constructs associated with sustained physical activity engagement. Considering public and non-profit investment in community running events, results provide insights into using these events as important public health tools.

**Key Words:** Exercise, Fitness, Sports, Recreation, Public Health

## Introduction

Identity theory and self-efficacy theory are two commonly used frameworks for understanding health behavior. Identity theory explains behavior as aligned with self-concept. Self-identification as an “athlete” is a measurable component of identity that is associated with positive health behaviors, particularly exercise. Similarly, perceived physical efficacy is also a predictor of exercise behavior.

Confidence in one’s ability to engage in physical activity is a critical factor in enabling and sustaining participation.

While much research examines associations between identity, self-efficacy, and health behavior, less attention has been given to the practical application of these theories in real-world contexts. Organized running races are popular ways in which communities encourage citizens to engage in healthy behaviors, and are celebrated as public health events. These events provide opportunities for participants to experience success in physical challenges, and to perceive themselves as athletes. The current study examines the extent to which running events may help to enhance participants’ athletic identity and perceived athletic ability, as well as relationships with self-reported health behaviors. Results may help identify lasting health benefits associated with organized participatory sports events.

## Literature Review

Despite the well-documented benefits of exercise, insufficient physical activity levels and obesity remain major health problems among adults in the United States. More than 40% of adults are classified as obese [1]. Inadequate physical activity is a key risk factor for obesity, yet nearly three-fourths of Americans fail to meet sufficient physical activity guidelines [2]. Furthermore, one-quarter to one-third of adults report being sedentary [3, 4].

## Athletic Identity

Identity Theory is an intrapersonal approach to understanding health and exercise behavior, suggesting that people tend to engage in behaviors consistent with their self-identities [5, 6]. Within the domain of physical activity, exercise- and sport-related identities play a central role in shaping behavior. Exercise identity reflects the extent to which individuals define themselves as exercisers and has been shown to predict exercise participation [7, 8].

Athletic identity represents a specific dimension of self-identity in which individuals identify with the role of “athlete” [9]. Like exercise identity, athletic identity is positively associated with exercise and physical activity levels. Perceived competence has been identified as a key sub-component of athletic identity and is particularly related to moderate-to-vigorous physical activity [7]. However, declines in perceived competence and athletic identity across adulthood highlight the need for physical activity contexts that sustain identity alignment over time [10].

### Perceived Athletic Ability

Given the importance of perceived competence within athletic identity, self-efficacy theory provides an additional framework for understanding exercise behavior. Self-efficacy theory posits that individuals are more likely to engage in activities that they believe they can do and will avoid ones that they believe are beyond their abilities [11]. Self-efficacy has been widely applied to health behaviors and is consistently associated with higher physical activity levels and lower perceived barriers [12, 13].

Perceived physical efficacy encompasses multiple aspects of exercise behavior, including knowledge, environmental comfort, and physical capability. This constraint appears to be more salient among women, who are less likely than men to perceive exercise environments as inclusive and welcoming, and who report lower perceived physical ability [14, 10].

Perceived ability and physical literacy represent important mechanisms for enhancing physical activity efficacy [15]. Physical literacy refers to the ability, confidence, and motivation to engage in physical activity across the lifespan and includes elements of physical competence and confidence [16]. Physical literacy predicts physical activity participation [17] yet declines in physical literacy across the population pose a continued threat to public health [18]. Experience with physical activity is also a critical component of motivation and adherence [19].

While athletic identity and perceived efficacy are known predictors of exercise behavior, research is needed to connect these constructs to practical, community-based interventions. Specifically, identifying events or programs that enhance athletic identity, and perceived ability may help promote sustained health behavior change. The current study examines athletic identity and perceived physical ability before and after participation in a long-distance trail running event, as well as their relationships with self-reported health behaviors.

### Running events as potential for identity and efficacy enhancement

Community running events present a potential strategy for promoting sustained exercise behavior. These events are popular and accessible, with approximately 170,000 run/walk race events encompassing over 20 million participants being held throughout the United States in 2024 [20]. Running and walking are among the most popular physical activities among adults who are active, with approximately 50 million Americans participating [21]. Beyond their immediate physical activity benefits, running events may shape how individuals perceive themselves and their physical capabilities, particularly through the development of athletic identity and enhanced physical efficacy.

For adults who choose to participate in organized, competitive activities like running races, athletic identity may remain an important aspect of self-identity. These events offer potential for identification with an activity-based group, such as “runner” or “athlete” [22]. In contrast to self-directed exercise, races offer sports-related occasions containing athletic elements such as race bibs, medals, and finish lines that may serve to reinforce participants’ perceptions of themselves as athletes within those events. Referring to participants as “athletes” is common terminology for organized sports events such as races, even at recreational levels [23]. Such cues may serve to reinforce a sense of belonging in athletic events and athletic identity alignment.

In addition to providing experiences that affirm active identity, running race events may also have the potential to build efficacy related to physical capabilities. Race participants reported higher self-esteem and self-efficacy during weeks in which they participated in an organized race than during weeks in which they had not [24]. Women in particular reported higher self-efficacy after completing a marathon [25]. Races create “positive cycles” where participants experience achievements that in turn, reinforce confidence in physical capabilities and willingness to undertake physical challenges [26]. Such reinforcement, particularly through event-provided symbols such as finish medals and public recognition, may help maintain or increase positive perceptions of physical ability.

The current study examines changes in athletic identity and perceived physical ability before and after participation in a trail running event and evaluates the relationships between these constructs and self-reported health behaviors. Findings have implications for the use of community sport events as mechanisms for long-term health behavior change through identity and efficacy enhancement.

## Material and Methods

### Procedure

Human subjects research approval was obtained from the relevant institutional review board prior to data collection. A web-based survey was administered to participants registered for the *Catsmacker Trail Run*, an annual event that has been held in Arkansas State Parks and National Forest Service jurisdictions since 2000. The event offers two distance options (12 and 20 miles) and is regarded as both an entry-level recreational race and a competitive event, depending on participant perspective.

Participants completed a pre-test questionnaire included in race communications prior to the event. A post-test survey was distributed through event follow-up communications after race completion.

### Instrument

Demographic variables included gender and age. Participants also reported their running experience and motivations for participation. Three outcome measures were assessed: the Athletic Identity Questionnaire [27], the Perceived Physical Ability subscale of the Physical Self-Efficacy Scale [28], and a researcher-developed scale assessing positive health behaviors.

The Athletic Identity Questionnaire (AIQ) measures the extent to which it is important for one to identify as a participant in sports, exercise or physical activity, and is useful in public health research [27]. Given variability in how trail race participants classify their activity [29], the AIQ was selected for its broad conceptualization of athletic identity across exercise and sport contexts. The 21-item scale is rated on a 5-point Likert scale (1 = not at all descriptive of me to 5 = very descriptive of me), with higher scores indicating stronger athletic identity. Internal consistency ranges from .68 to .89.

The Perceived Physical Ability (PPA) subscale of the Physical Self-Efficacy Scale [28] was used to measure participants’ self-assessment of their physical capabilities as they related to a physical competition such as a running race. This subscale was chosen in lieu of the entire instrument, as the other subscale primarily measured confidence in physical appearance rather than ability. The PPA subscale measured 10 items related to participants’ self-reported confidence in physical abilities with a possible range of 10 to 50, with higher scores indicating greater perceived physical ability. As a subscale, it demonstrated appropriate internal consistency ( $\alpha = .84$ ) and test-retest reliability, ( $r = .69, p < .001$ ).

Positive health behaviors were assessed using nine adapted items from the Behavioral Risk Factor Surveillance System [30, 31]. Items measured importance and engagement in behaviors related to physical activity, nutrition, sleep, and stress on a 5-point Likert scale. Higher scores indicated stronger endorsement of health-promoting behaviors.

**Results**

**Demographics and Outcome Variables**

Forty-eight out of 144 event participants completed the pre-test and 52 completed the post-test, resulting in response rates of 33.3% and

36.1%, respectively. Thirty (62.5%) of the pre-test participants were male, and 18 (37.5%) were female. Twenty-six (50%) of the post-test participants were male, and twenty-six (50%) were female. Gender and age distributions for the pre-test and post-test are outlined in Table 1.

Variable	Pre-Test (N=48)	Post-Test (N=52)
<b>Gender</b>		
Male	30 (62.5%)	26 (50%)
Female	18 (37.5%)	26 (50%)
<b>Age</b>		
34 and younger	6 (12.5%)	4 (7.7%)
35-44	11 (22.9%)	15 (28.8%)
45-54	18 (37.5%)	17 (32.7%)
55 and older	13 (27.1%)	16 (30.8%)

Table 1: Demographic Characteristics of Pre-Test and Post-Test Participants

Measures of central tendency and variability were calculated for three test variables in the post-test, including athletic identity, health behavior, and perceived physical ability. These were compared

between age groups and gender in the post-test. There was no gender-related or age-related differences in these three outcome variables (Table 2).

		N	M	SD	Test	p
<b>Athletic Identity</b>						
	Male	18	79.94	9.76	F(1, 40) = 0.10	.76
	Female	24	78.96	10.61		
<b>Perceived Physical Ability</b>						
	Male	20	35.25	5.67	F(1, 42) = 0.16	.69
	Female	24	35.96	5.97		
<b>Health Behavior</b>						
	Male	20	37.45	4.74	F(1, 42) = 2.17	.11
	Female	23	39.65	4.03		
<b>Athletic Identity</b>						
	> 34	3	79.00	9.54	F(3, 38) = 0.02	.99
	35-44	11	80.00	8.97		
	45-54	15	79.27	11.62		
	< 55	13	79.08	10.56		
<b>Perceived Physical Ability</b>						
	> 34	3	38.33	4.16	F(3, 40) = 1.83	.16
	35-44	11	37.18	3.22		
	45-54	15	36.67	6.74		
	< 55	15	32.93	5.92		
<b>Health Behavior</b>						
	> 34	3	36.67	3.79	F(3,39) = 0.28	.84
	35-44	12	38.75	5.29		
	45-54	14	38.36	3.48		
	< 55	14	39.21	5.00		

Table 2: Differences in Post-Test Outcome Variables by Gender and Age Group

**Athletic Identity, Perceived Physical Ability, and Health Behavior Pre-event and Post-event**

Means for athletic identity, perceived physical ability, and health behavior were compared between pre-test and post-test respondents. Independent samples t-tests revealed significant differences in means for both physical activity efficacy and athletic identity between pre-test and post-test respondents (see Table 3).

**Athletic Identity and Perceived Physical Ability as Predictors of Positive Health Behavior**

Athletic identity was examined as a predictor of positive health

behavior, as well as perceived physical ability. Athletic identity significantly predicted health behavior,  $F(1, 39) = 6.76, p = .013$ , accounting for 15% of the variance ( $R^2 = .15$ ). Higher levels of positive health behavior were associated with higher levels of athletic identity. Athletic identity also significantly predicted perceived physical ability,  $F(1, 39) = 39.05, p < .001$ . Greater perceived physical ability was associated with higher levels of athletic identity, accounting for 15% of the variance ( $R^2 = .15$ ).

		N	M	SD	Test	p
Athletic Identity	Pre-Test	45	74.91	7.29	t(85) = -2.37	.02
	Post-Test	42	79.38	10.15		
Perceived Physical Ability	Pre-Test	46	27.37	4.94	t(88) = -7.30	<.001
	Post-Test	44	35.64	5.78		
Health Behavior	Pre-Test	44	38.68	5.12	t(85) = .052	.479
	Post-Test	43	38.63	4.46		

Table 3: Pre-Test and Post-Test Differences in Outcome Variable Means

A multiple linear regression analysis was conducted to examine whether athletic identity and perceived physical ability predicted health behavior. Preliminary analyses indicated that the assumptions of linearity, normality of residuals, homoscedasticity, and absence of multicollinearity were adequately met. The overall regression model

was statistically significant,  $F(2, 37) = 3.26$ ,  $p = .050$ , accounting for 15% of the variance ( $R^2 = .15$ ). Athletic identity emerged as a significant positive predictor of health behavior, ( $\beta = .44$ ,  $p = .048$ ), whereas physical activity efficacy did not ( $p = .723$ ).

Predictor	B	SE	B	t	p
(Constant)	26.02	5.34		4.87	<.001
Athletic Identity	.189	.09	.44	2.05	.048
PA Efficacy	-.062	.17	-.08	-.357	.72

Table 4: Multiple Linear Regression Predicting Positive Health Behavior

## Discussion

The purpose of this study was to examine changes in athletic identity, perceived physical ability, and health behavior associated with participation in a trail running race, as well as to explore the relationships among these constructs following the event. Findings indicate that participation was associated with increases in athletic identity and perceived physical ability, and that athletic identity significantly predicted positive health behavior. These results suggest that organized running events may play a meaningful role in shaping physical self-identity with implications for public health.

### Demographic Differences in Outcome Variables

No age- or gender-related differences were observed in post-event athletic identity, perceived physical ability, or health behavior. The absence of differences may reflect a self-selected sample with shared interests and experience in endurance activity.

### Changes in Athletic Identity and Perceived Physical Ability

Race participants who completed the post-test reported higher levels of athletic identity and perceived physical ability compared to race participants who completed the pre-test. These findings suggest that the event may have strengthened self-identification as an athlete. This result is consistent with past research finding that athletic identity is fluid and can be influenced by the quality or outcome of experiences [32]. Findings also suggest that participating in a sports event may have enhanced participants' confidence in their physical capabilities, building on Anderson et al.'s [7] idea that targeting physical competence through successful experiences might be a way to address sustained behavioral change. These results are consistent with Perrier et al. [33], which identify self-efficacy alongside athletic identity as potential targets for sports events interventions. Participatory sports events may be seen as important to maintaining athletic identity among participants, and participants can use events as ways to build successful experiences with physical activity.

While increases in athletic identity and perceived physical ability were observed from pre-test to post-test, a similar increase in positive health behavior was not found. This finding may indicate that identity or efficacy constructs may be more easily adjusted than actual behavior. While sports events may have an immediate effect on such constructs, actual behavior intent or change may take more

sustained time and effort. This finding may also be due to the sample having already stable health behaviors that support participation in trail races.

### Athletic Identity and Health Behavior

Athletic identity was found to be a predictor of positive health behavior in both the simple and multiple regression analyses. Individuals who more strongly identified as athletes reported higher engagement in health-promoting behaviors. These findings are like previous studies linking athletic identity to health behavior [34, 27]. In the current study, a participatory sports event can be seen as an intermediate event that links identity with health behaviors. In this context, identifying as an "athletic" person may increase motivation to maintain behaviors that support overall health, such as regular physical activity.

Athletic identity also predicted perceived physical ability, indicating a relationship between how individuals see themselves as athletes and how competent they feel physically. However, when both athletic identity and perceived physical ability were included in a multiple regression model predicting health behavior, only athletic identity was found to be a significant predictor. These results suggest that while athletic identity and perceived physical competency are related, athletic identity remains more of an overarching construct related to lifestyle behaviors. This interpretation might be especially important when considering how physically diverse populations might continue to pursue health behaviors from a self-identity perspective, regardless of a wide range of physical ability levels, including disability.

### Conclusions, Limitations, and Future Research

This study demonstrates that organized running events can help strengthen the extent to which people see themselves as athletes and boost their confidence in their physical abilities, both of which are associated with positive health behavior. These findings suggest that community-based sports events may help people maintain healthy behaviors over time by changing how they think about themselves. Considering that such events are largely publicly administered and celebrated as outward-facing celebrations of cities and communities, demonstrating ways in which these events may positively affect public health is important to their continued support.

## Practical Implications

Event organizers should recognize their role in shaping participants' self-perceptions and physical ability confidence. Rather than focusing exclusively on competitive outcomes, events can strategically emphasize athletic identity development through inclusive language, recognition systems, and participatory frameworks. Referring to all participants as "athletes," regardless of performance level, may reinforce self-identification that extends beyond the event itself. Similarly, providing tangible symbols of accomplishment such as finisher medals, personalized certificates, or public recognition, can validate participants' athletic identities and build confidence in physical capabilities.

These findings also have implications for public health programming. Community stakeholders and funding agencies may find value in supporting organized sports events not merely as one-time recreational activities, but as structured interventions that promote psychological constructs associated with sustained health behavior. The observed increases in athletic identity and perceived physical ability following event participation suggest that such events warrant consideration alongside traditional health promotion strategies.

## Broadening Participation and Identity

An important extension of this work involves examining what constitutes meaningful participation in sports events. While this study focused on competitive participants, athletic identity may also develop through non-competitive involvement such as volunteering, course marshaling, or event organization. By expanding participation pathways, events could engage populations who face barriers to competitive participation such as disability or injury while still fostering connections to athletic communities and active identities. Future research should examine whether non-competitive event involvement similarly enhances athletic identity and health-related self-perceptions, potentially broadening the public health impact of community sports events.

## Study Limitations and Future Research

Several methodological limitations should be acknowledged. First, the use of independent samples for pre-test and post-test assessments limits our ability to draw conclusions about individual-level changes. While group-level differences suggest event-related effects, a repeated-measures design would strengthen inferences by tracking identity and efficacy changes within individuals over time.

Another limitation of the current study involves using independent samples rather than matched pre-test and post-test respondents, resulting in results that might not be able to be inferred at the individual level. Future research might consider a matched design that could assess identity and perceived physical ability changes among individuals. Another limitation of the current study design involves data collection at one time immediately after the event. Longitudinal approaches might examine the effect of increased athletic identity and perceived physical ability at various points after the conclusion of the event to determine how these changes might be sustained over time.

Finally, while running and trail events are popular and common among community events, only one event was measured in the current study, resulting in limited applicability for other types of sports events. Future research might examine multiple and different types of events to help clarify the conditions under which sport participation most effectively promotes health-related outcomes.

Community sports events represent accessible, commonplace opportunities for promoting health behavior change through enhancement of athletic identity and physical self-efficacy. By recognizing and intentionally cultivating these mechanisms, event organizers, public health professionals, and community stakeholders can maximize the lasting health impact of participatory sports

programming. As evidence accumulates regarding how organized events shape participants' self-perceptions and behavioral patterns, such events should be increasingly valued not merely as recreational opportunities, but as strategic public health interventions with potential for population-level impact on physical activity engagement and health outcomes.

**Competing Interest:** The authors declare that they have no known financial or personal relationships that could have appeared to influence the work reported in this paper.

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