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Motivation to Run Boston: Comparing Motives Among Marathoners Using Motivations of Marathoners Scales

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Abstract

Marathon running has become one of the fastest growing endurance competitions, with over half a million U.S. participants completing the 26.2-mile race each year. As the popularity of marathons continues to rise among non-professional competitors, more attention is being placed on what motivates individuals to train and compete in a full marathon. Furthermore, very little is known about the motivational differences between the varying levels of performers among the non-professional population, such as the motives that influence runners who train to qualify for and compete in the Boston Marathon. The purpose of this study was to examine the different motives reported among Boston Marathon qualifiers (BQ), those trying to Boston qualify (TBQ), and non-Boston qualifiers (NBQ) in understanding what motives separate the varying levels of performances, as measured by the Motivations of Marathoners Scales (MOMS). This study utilized a quantitative approach, using a basic demographics questionnaire addressing participant background and running history, as well as the MOMS instrument to investigate key motives. Results revealed that all marathoners involved in the study were motivated primarily by achievement and physical motives. Although, key differences in motivation were revealed in achievement and social motives among the BQ and TBQ marathoners when compared to the NBQ population. Understanding the relationship between motives and running performance may help motivate marathoners aspiring to run faster times, such as those who desire to qualify for the Boston Marathon.

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Introduction

Marathon running has become one of the fastest growing endurance competitions worldwide, with over half a million U.S. participants completing the 26.2-mile race every year since the turn of the 21st century [1]. According to the 2016 Running USA Annual Marathon Report, approximately 507,600 people were reported by official race organizers to have completed the 26.2-mile distance throughout the United States, which included more than 1,100 organized marathon races nationwide [2]. There was a high of 550,600 participants completing the marathon distance in 2014 [2]. According to, founder of the The 100 Day Marathon Plan, almost 1% of the American population has completed a marathon, with more than a thousand marathon events taking place every year [1]. These statistics support the notion that distance running events, particularly half, full, and ultra-marathon distances, are becoming an increasingly popular trend in the United States. Much of the increase in participation in marathon events has been attributed to the heightened interest in competing in "big stage" marathons, with the Boston Marathon receiving the most interest due to the recent attention from the 2013 bombing casualties along with the rich historical and competitive prestige associated with qualifying for and competing in the marathon event (BAA, n.d.a.). The purpose of this study was to explore the differences in motives between higher and lower performing marathoners, with a special interest in understanding the differences between Boston Marathon qualifiers (BQ), those trying to Boston qualify (TBQ), and non-Boston qualifiers (NBQ).

Motivational factors involved in distance running has been explored in past research, yet there is little evidence supporting the exploration of motives in higher versus lower achieving non-professional marathoners. Likewise, there is no evidence supporting the exploration of motives among non-professional marathoners pursuing "big stage" marathon events, such as the Boston Marathon. Understanding how motivation in endurance sports influences an individual's desire to compete in marathon races is of great interest to many endurance sports enthusiasts, including coaches and competitors alike [3]. Furthermore, identifying specific motivational factors that result in a heightened desire to compete may be the key to understanding why some runners excel more than others in the marathon distance [4]. This study addresses the differences in motives between the BQ, TBQ, and NBQ populations, using a motivation assessment questionnaire designed to address motives common among marathoners, known as the Motivations of Marathoners Scales (MOMS) instrument [5].

Using the MOMS instrument allows researchers to explore specific categories of motivation commonly identified in marathoners [4,6]. The instrument, originally developed by, includes four second-order motives that can be broken down into nine first-order motives [5]. The second-order motives are the four primary variables addressed in most studies using the MOMS instrument, which include physical health motives (PH), social motives (SO), achievement motives (AC), and psychological motives (PS) [5]. However, since the original instrument designed by Masters and colleagues (1993) was conducted over 20 years ago, a need for an updated version had come into question by several researchers who were utilizing the instrument to assess current-day running participants. In response to this request, researchers using a more recent pool of marathon participants produced a recently updated version of the survey, thus supporting its current-day application [7].

Zach and colleagues (2015) conducted a follow-up study to assess the validity of the MOMS instrument through confirmatory and exploratory factor analyses, which resulted in the addition of two more first-order motivational variables. The study also found that two of the questions in the survey had very low correlations with any of the intended motivational categories, and revealed no level of significance, resulting in the researchers dropping these two questions [7]. The additions resulted in eleven first-order categories, which include: General Health Orientation 1 (GH1: reduced disease prevalence and longevity), General Health Orientation 2 (GH2: keeping fit), Weight Control (WC), Affiliation (AF), Recognition (RE), Competition (CO), Personal Goal Achievement (PGA), Psychological Coping 1 (PC1: emotional-related coping), Psychological Coping 2 (PC2: everyday-life management), Self-Esteem (SE), and Life Meaning (LM) [7]. Each of these variables are factored into the updated 54-question survey that encompasses the MOMS

instrument, which has shown to be a useful tool for assessing sources of influence and individual motivation in marathoners in the past four decades [7,8]. The updated version of the MOMS instrument produced by Zach and colleagues was utilized in this study to assess the motives of marathoners in order to determine differences between BQ, TBQ, and NBQ populations.

Purpose Statement

The purpose of this study was to examine the relationships between motivation and level of performance in marathon runners by analyzing the motivations of Boston Marathon qualifiers (BQ), those trying to Boston qualify (TBQ), and non-Boston qualifiers (NBQ), as measured by the Motivations of Marathons Scales (MOMS).

Research Questions and Hypotheses

The motivating research question that influenced the direction of this study is understanding what motivates non-professional marathon runners to achieve a Boston Marathon qualifying time. This was achieved by examining differences in motivational factors addressed in the MOM instrument that separate the BQ, TBQ, and NBQ. Sub-questions are also identified for this study, which includes defining similarities in motives within the BQ and NBQ participant groups.

R1: Are there differences between the motives of Boston Marathon qualifiers (BQ), those trying to Boston qualify (TBQ), and non-Boston qualifiers (NBQ), as measured by the Motivations of Marathoners Scales (MOMS)?

H1: There are differences between the motives of the BQ, TBQ, and NBQ, as measured by the MOMS.
H0: There are no differences between the motives of the BQ, TBQ, and NBQ, as measured by the MOMS.
R2: What similarities in motivational factors can be established among the BQ population?
H2: There is a significant relationship between BQ runners and motivation based on achievement motives.
H0: There is no relationship between BQ runners and motivation based on achievement motives.
R3: What similarities in motivational factors can be established among the NBQ population?
H3: There is a significant relationship between NBQ runners and motivation based on physical and social motives.
H0: There is no relationship between NBQ runners and motivation based on physical and social motives.

Null Hypothesis

There are no differences in motives between Boston Marathon qualifiers (BQ), those trying to Boston qualify (TBQ), and non-Boston qualifiers (NBQ), as measured by the Motivations of Marathoners Scales (MOMS).

Methodology

The methodology approach of this study is similar to previous research involving the use of the MOMS instrument in identifying motives for participation, as well as defining the purpose for competing in marathons. This study utilized a quantitative approach by analyzing the motives that influence marathoners to train and compete in marathons, in order to understand the differences that exist between the BQ, TBQ, and NBQ populations. Sampling methodology used for this study was non-probability, purposive with marathon running being the predefined criteria. The study began with the process of recruiting marathon runners from the communities in and around central California (Central Valley) to participate in an online survey questionnaire utilizing the MOMS instrument [5]. Local runners from the surrounding areas were recruited using multiple communication facets, including email communication sent through local timing databases, through social media (i.e., Facebook), and word of mouth at local running events. Other facets for recruiting participants included personal contact with local runners and race directors residing in the Central Valley, which enabled the researcher to communicate with many local marathon training groups and rely on a snowball effect through word of mouth [9].

Participants

Anyone above the age of 18 who has run a full marathon (i.e., an officially sanctioned 26.2-mile race) and does not identify themselves to be a professional marathon runner (i.e., has no prior professional career and/or current professional contract involving running) was eligible to participate in the study by completing the surveys provided online. The survey portion of the study included a signed consent form,

followed by a Demographics Questionnaire and the MOMS instrument, each of which were conducted online through Survey Monkey. A link was provided to participants that directed them first to sign the consent form, then upon agreement allowed them to complete the Demographics Questionnaire section followed by the MOMS survey questions. Participants who indicated in the Demographics Questionnaire that they had qualified to run or ran the Boston Marathon were placed in the BQ category. Those currently trying to Boston qualify, or those who have been actively pursuing qualification within the past five years, were placed in the TBQ category. Lastly, those who had not qualified, have not pursued qualification, nor desire to do so, were placed in the NBQ category. BAA qualification standards for marathon performance times for each age and gender category were provided in the demographics portion of the survey for those who were unaware of whether or not they had achieved a "BQ" eligible time in past marathon events.

Data Analysis

The Demographics Questionnaire and the MOMS instrument were used to collect specific information on each participant, providing data statistically analyzed to answer the research questions herein. A one-way MANOVA was performed using SPSS software in order to quantitatively analyze differences in motives between the BQ, TBQ, and NBQ participants [10]. The categories of motives analyzed included the four second-order motivational categories identified by Masters and colleagues (1993). Follow up univariate ANOVA analyses were performed to determine interrelationships between the four motives for each marathon group. These analyses involved categorical independent variables (IV), Boston qualification status of each participant defined as BQ, TBQ or NBQ, and four dependent, continuous variables (DV) identified as the four second-order motives established by the MOMS instrument.

The IV represents the Boston qualification status of each participant, which was based upon the qualification standards for marathon performance times achieved by each participant based on BAA classifications set for each age and gender category. The IV has three grouping categories, including BQ, TBQ, or NBQ. Participants were placed in either of the three IV categories based on previous performance(s) in marathon events, as indicated by each participant in the Demographics Questionnaire. The qualification standards used are pre-determined by the BAA, which are set according to age and gender classifications (BAA, n.d.b.). The DV involved in this study was based on motivation to run marathon events, which included each of the four second-order categories of motivation identified in the MOMS instrument. These four categories can be further broken down into eleven first-order motives These categories can also be identified as alternative variables affecting the DV [7,11]. The DV is considered a continuous value due to the use of computed aggregated mean scores of each motive [9]. The mean scores assess participant level of reasoning for training and competing in marathons [5]. The following includes the values assigned to each IV and DV involved in the study herein, which was used to organize the data gathered online from Survey Monkey into an Excel spreadsheet for statistical analyses using SPSS [11,12].

IV: (1) BQ, (2) TBQ, and (3) NBQ
DV: Motivation based on (1) Physical Health Motives, (2) Social Motives, (3) Achievement Motives, and (4) Psychological Motives

The one-way MANOVA was used to determine the differences between the four second-order motivation categories (DV) and the BQ status of each participant (IV). MANOVAs are primarily used when more than one factor is being explored simultaneously [12], pp. 264). The one-way MANOVA is often used to assess differences in performance of at least one IV and its effect on multiple DV. Since Boston qualification involves a categorical IV, and the motives addressed in the MOMS instrument involve four continuous variables, motivation would be considered a multiple DV that needs to be assessed using a factorial ANOVA approach, such as the one-way MANOVA technique used herein [12]. This analysis was performed using SPSS, which provided both descriptive and inferential statistical outcomes between the variables involved, therefore providing a linear relationship between the IVs and DVs [9]. The level of significance for this analysis was set at less than 0.05 ($P < 0.05$).

To further understand how these groups differed, an additional Post Hoc procedure was performed to

determine the differences between the dependent variables [12]. While the MANOVA analysis allows for between-group and within-group comparisons, additional univariate ANOVA analyses were conducted to assess relationships within each group to answer the second and third research questions. Within group similarities were confirmed by calculating Pearson correlational coefficients to delineate significant similarities or relationships among motives within IV grouping. This information was used to determine what motives are more prevalent in the BQ, TBQ, and NBQ participant groups, therefore helping to identify what key motives influence the varying levels of non-professional marathoners.

Results

Frequencies and percentages were analyzed for all participants (n = 277) for the key variables, which include marathon groups, age, gender, and ethnicity. Prior to analysis, data for each variable was transformed and recoded according to the procedures previously discussed. Frequency outcomes were calculated to screen for outliers and missing data for the marathon groups, age, gender, and ethnicity. All 277 participants were placed into one of the three IV groups (BQ, TBQ, or NBQ), according to the answers provided from the demographics survey questions. Age categories were provided based on Boston Marathon qualifying classifications, ranging from 18-34, 35-39, and increasing by 5-year increments up to the 80 and older category. Participants were also placed into one of the two gender categories, either male or female, and classified according to the chosen ethnic group identified from the demographic section of the survey. However, one participant failed to report ethnicity, resulting in 276 of the 277 participants being placed into appropriate categories for ethnicity. No other missing data or outliers in the data were reported.

Demographics

Data from 277 marathon runners (43.3% males and 56.7% females) were gathered. The majority of marathoners (65%) were of Caucasian ethnicity. Data on ethnicity was missing for one marathoner. Percentages for marathoner's ethnicity refer to percentages of those whom data are available. The majority of the sample population (53.8%) fell within the NBQ group, followed by the BQ (29.6%) and TBQ (16.6%) groups. The frequency for the number of marathon races completed was highest for the 2-4 category (n = 27), which accounted for 31.3% of the study population. This was followed by 5-9 races (n = 59) at 21.2% and 1 race (n = 58) completed by participants at 20.9% of the study population. This outcome is based on the question within the demographics survey asking participants how many marathons were completed. The survey indicates the majority of marathoners involved in this study had run between 2-4 marathons.

Means, standard deviations, and frequencies for the four motivational variables (IV) for each marathon group were calculated (Table 1). Average scores (M) for the four motivational categories varied between participant groups were determined. The results reveal that the BQ group had greater average scores for psychological (M = 4, SD = 1.16), physical (M = 4.9, SD = 82), and achievement (M = 5.03, SD = 0.93) motives, indicating that these motives are greater sources for motivation to run in the BQ group than the other marathon groups. The TBQ group had the highest average score for social motivation (M = 3.89, SD = 1.1). Both the BQ and TBQ groups had closely reported average scores for each of the four motivational categories, indicating that both groups are closely related by motivations to run. The means for data also revealed that psychological and physical motives were the most commonly chosen source of motivation for all three of the marathon groups, provided that there were less than 0.2 differences in average scores between the three groups. The greatest differences in motivation were reported for social and achievement motives. The average scores for social and achievement motives for the BQ and TBQ groups were both higher than that of the NBQ group yet were similar between the BQ and TBQ groups. These observations also suggest there are some inclinations for further investigating the relationship between the BQ and TBQ groups in regarding common sources of motivation to run.

Table 1: Means and Standard Deviations for Key Variables

Motivation	Marathon Groups	M	SD	n
Psychological	BQ	4	1.16	82
	TBQ	3.98	1.23	46
	NBQ	3.81	1.3	149
Physical	BQ	4.9	0.96	82
	TBQ	4.72	1.09	46
	NBQ	4.73	1.27	149
Social	BQ	3.75	1.27	82
	TBQ	3.89	1.1	46
	NBQ	3.34	1.31	149
Achievement	BQ	5.03	0.93	82
	TBQ	4.96	0.76	46
	NBQ	4.41	0.95	149

Descriptive Stats

Descriptive statistics were generated as means and standard deviations on participant's personal best marathon time (recorded in minutes). The average recorded marathon time in minutes was 254.49 (SD = 60.65), indicating that the average time was around 4 hours and 15 minutes. To assess whether marathon groups of varying performance levels have different sources of motivation for running, a one-way MANOVA was conducted. The assumptions of independence of observations and homogeneity of variance/covariance were checked and met. Bivariate scatterplots were checked for multivariate normality. The interaction was statistically significant, Wilks' = 0.88, F (8, 542) = 4.96, $p < 0.01$, n = 0.1 (Table 2). This indicates that the linear composite of the four motivation variables differs among the three marathon groups. Therefore, motivation is different for the varying levels of marathon runners, suggesting that motivation influences non-professional marathoners. Follow-up one-way ANOVAs revealed that social and achievement motives were statistically significant between groups. Assessment of motivational mean scores indicates that the BQ and TBQ groups are motivated by social and achievement motives above the NBQ group. The BQ and TBQ groups also had higher outcomes for both the social and achievement scores than the NBQ group.

Table 2: Means and Standard Deviations for Motivation Variables as a Function of Marathon Group

		Psychological		Physical		Social		Achievement	
Group	n	M	SD	M	SD	M	SD	M	SD
BQ	82	4	1.16	4.9	0.96	3.75	1.27	5.03	0.93
TBQ	46	3.98	1.23	4.72	1.09	3.89	1.1	4.96	0.76
NBQ	149	3.81	1.3	4.73	1.27	3.34	1.31	4.41	0.95

Figure 1 displays the profiles of the MOMS results for each of the three marathon groups, represented as "Mar_Group" on the graph. The line graph displays the differences in mean values between the three groups of participants for all four second-order motivational categories identified in the MOMS instrument, including mean totals for social, physical, psychological, and achievement motives. The top line, labeled as "AC" for achievement motives, provides a visual display for how much greater the achievement motives were for the BQ and TBQ groups when compared to the NBQ group. Likewise, the graph displays how much lower the bottom line, labeled as "SO" for social motives, was for NBQ compared to TBQ and BQ groups. The top two lines representing achievement (AC) and physical (PH) motives were collectively higher for all three groups when compared to psychological (PS) and social (SO) motives. E

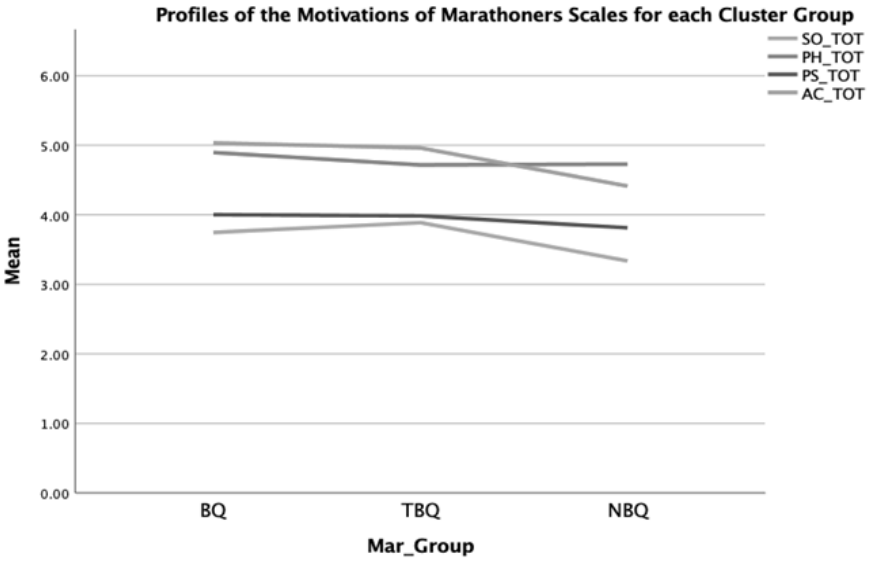

Figure 1: Profiles of the MOMS Outcomes for Each Marathon Group

The one-way ANOVA results for each of the four motivational variables among all three marathon groups reveals that both social and achievement motives were statistically significant between groups (Table 3). The follow-up ANOVAs and a Scheffe post hoc test were conducted to determine the effects of each source of motivation (DV) on marathon groups (IV). The ANOVA results for motivation indicated that social ($p < 0.01$) and achievement ($p < 0.01$) motives significantly differ between groups. Therefore, individual correlation analyses were needed to reveal a level of significance for social and achievement between the marathon groups for further understanding of this relationship within and between groups.

Table 3: One-Way ANOVA for Variables Among Marathon Groups

Source	Dependent Variable	df	F	p
Marathon Group	Psychological	2	0.74	0.48
	Physical	2	0.63	0.54
	Social	2	4.74	0.01*
	Achievement	2	14.59	0.00*

*p<0.05

The ANOVA outcomes for the marathon groups based on social motives reveal that there is a significant difference in reported motives between the TBQ and NBQ groups based on social motives ($p < 0.04$) (Table 4). Differences between the BQ and NBQ groups based on social motives was also noted, yet the level of significance did not meet the $p < 0.05$ level set for this analysis.

Table 4: ANOVA Outcomes Comparing Marathon Groups on Social Motives

	BQ	TBQ	NBQ
BQ		0.83	0.06
TBQ	0.83		0.04*
NBQ	0.06	0.04	

The ANOVA outcomes for the marathon groups based on achievement motives reveals that there is a significant difference in reported motives between the BQ and NBQ groups based on achievement motives ($p < 0.01$) (Table 5). Likewise, the results also revealed a significant difference between the TBQ and NBQ groups based on social motives ($p < 0.01$).

Table 5: ANOVA Outcomes Comparing Marathon Groups on Achievement Motives

	BQ	TBQ	NBQ
BQ		0.92	0.00*
TBQ	0.92		0.00*
NBQ	0	0	

*Significance is at the 0.05 level.

The results from the univariate ANOVAs reveal that only the social and achievement motives had significant differences between marathon groups. The outcomes for the social motives indicate that the TBQ and NBQ groups differ greatly on this factor, while the achievement motives indicated that both the BQ and TBQ groups differed from the NBQ group. Achievement motives were the only variable that showed a similar difference between the BQ and TBQ group, even though the social motives seemed to have a similar effect on the MANOVA outcomes discussed above. These outcomes suggest that the TBQ group is more highly motivated than both the NBQ and BQ groups primarily by social motives. However, both the BQ and TBQ groups appear to be motivated more so by achievement motives than the NBQ group. Therefore, the primary differences in motives between the marathoners who have run faster marathon personal best times (BQ group), along with those who desire to run a Boston Marathon qualifying time (TBQ group), are based primarily on social and achievement motives when compared with marathoners who do not aspire to run a BQ time (NBQ group).

Correlations between Motives

Pearson correlations were computed to examine the intercorrelations of the variables within each group (Table 6). While the MANOVA and follow-up ANOVA results revealed the possible differences between marathon groups and the motivation variables, the correlations analyses found herein were used to determine any possible relationships among the variables within each marathon group. The intercorrelations between the four motivation variables within the BQ group results reveal that all four variables have significant relationships among the BQ participants ($p < 0.01$). The Pearson correlation outcomes revealed that the relationship between achievement and psychological motives has the greatest combined effect among the four motivation variables ($r(80) = 0.57$, $p < 0.001$). This means that approximately 32% of the BQ population reported being motivated to run primarily by achievement and psychological motives combined. This outcome suggests that about 1/3 of the BQ population are motivated by achievement and psychological motives, meaning these two motives have the greatest influence on marathoners with faster marathon personal best times.

Table 6: Intercorrelations for Four Motivation Variables and BQ Group

	Psychological		Physical		Social		Achievement	
	r	p	r	p	r	p	r	p
Psychological	1		0.39**	0	0.44**	0	0.57**	0
Physical	0.39**	0	1		0.31**	0.01	0.28**	0.01
Social	0.44**	0	0.31**	0.01	1		0.45**	0
Achievement	0.57**	0	0.28**	0.01	0	0	1	

**Correlation is significant at the 0.01 level (2-tailed). Listwise $n = 82$

The intercorrelations between the four motivation variables within the TBQ group results reveal that only two of the motivation variables have significant relationships among the TBQ participants ($p < 0.01$) (Table 7). The two relationships between motives that revealed significance for this group included social and psychological motives ($r(44) = 0.45$, $p < 0.001$), along with achievement and psychological motives ($r(44) = 0.40$, $p < 0.01$). The Pearson correlation outcomes reveal that the relationship between social and psychological motives has the greatest effect among the four motivation variables for the TBQ group. This means that approximately 20% of the TBQ population reported being motivated to run primarily by social and psychological motives, while another 16% reported being motivated mostly by achievement and psychological motives. This outcome suggests that psychological motives have the greatest combined effect on the TBQ, while social and achievement motives both appear to have a great amount of influence on marathoners desiring to qualify for the Boston Marathon ("BQ").

Table 7: Intercorrelations for Four Motivation Variables and TBQ Group

	Psychological		**Physical**		**Social**		**Achievement**	
	r	p	r	p	r	p	r	p
Psychological	1		0.15	0.31	0.45**	0	0.40**	0.01
Physical	0.15	0.31	1		0.1	0.5	0.07	0.67
Social	0.45**	0	0.1	0.5	1		0.30*	0.04
Achievement	0.40**	0.01	0.07	0.67	0.30*	0.04	1	

**Correlation is significant at the 0.01 level (2-tailed). Listwise n = 46

*Correlation is significant at the 0.05 level (2-tailed).

The intercorrelations between the four motivation variables within the NBQ group results reveal that all four variables have significant relationships among the NBQ participants ($p < 0.01$) (Table 8). The Pearson correlation outcomes reveal that the relationship between social and psychological motives has the greatest combined effect among the four motivation variables ($r(147) = 0.66$, $p < 0.001$). This means that approximately 44% of the NBQ population reported being motivated to run primarily by social and psychological motives combined. Considering about half of the NBQ population are motivated by social and psychological motives, both motives seem to have the greatest influence on marathoners not desiring to BQ.

Table 8: Intercorrelations for Four Motivation Variables and NBQ Group

	Psychological		**Physical**		**Social**		**Achievement**	
	r	p	r	p	r	p	r	p
Psychological	1		0.49**	0	0.66**	0	0.56**	0
Physical	0.49**	0	1		0.50**	0	0.48**	0
Social	0.66**	0	0.50**	0	1		0.50**	0
Achievement	0.56**	0	0.48**	0	0.50**	0	1	

**Correlation is significant at the 0.01 level (2-tailed). Listwise *n* = 149

The correlations outcomes reveal that all three marathon groups had significant relationships involving motivation based on psychological motives. However, the BQ group reported greater relationships involving achievement, while the NBQ group reported greater relationships involving social motives. Meanwhile, the TBQ reported both social and achievement motives as greater sources of motivation, combined with psychological motives. These outcomes suggest that the BQ group values achievement-based motives more so than the NBQ group, while the TBQ group values both social and achievement motives; all three groups seem to value psychological motives fairly equally.

Summary of Results

The results from the one-way MANOVA revealed that there are differences in motivations between the three groups of marathoners identified in this study. Follow up one-way ANOVAs revealed that there are also differences among the groups based on specific motives from the MOMS instrument. Pearson correlations were used to identify similarities in motives within each participant group. The key differences in motives identified were primarily between the BQ and NBQ groups based on achievement motives, as well as between the TBQ and NBQ groups based on social and achievement motives. Therefore, the results reveal that the BQ group are most highly motivated by achievement-based motives, while the TBQ group are more highly motivated by a combination of social and achievement motives when compared to the NBQ group. All three groups are closely related in terms of motivation based on physical and psychological motives. Based on these outcomes, it is understood that the BQ and TBQ groups are more closely related in terms of motivation from achievement-based motives, which significantly differs from the NBQ group.

Discussion

Marathon runners are a unique group of endurance athletes, yet not all are motivated the same. As this study reveals, motivation can vary among levels of performers and could be cause for why some runners pursue competitive races versus those who do not. While all marathoners involved in this study revealed some level of affiliation with the four motivational categories identified in the MOMS instrument, there were differences reported among the higher and lower ability groups of participants. The findings reveal that the majority of higher ability runners tend to report a greater association with all four forms of motivation than the lower ability runners. Likewise, the higher ability runners were shown to be more highly motivated by achievement and social motives when compared to the lower ability runners. Therefore, the pursuit of competition and social aspects involved in marathon running seem to be the primary differences reported among marathoners based on ability and past performance. However, there were also similarities among all runners, regardless of previous marathon performance times. The results revealed that all three groups of participants (BQ, TBQ, and NBQ) reported similarly positive outcomes for physical and psychological motives. These findings are similar to previous research, which support the idea that there are differences in motives among marathoners based on varying levels of ability and/or past performance [13,6].

While previous research has identified differences among runners based on demographics, including age, gender, experience, training habits, and so forth, the results from this study specifically identify the differences among a select population of non-professional marathoners based on ability. Specifically, this study compared motives among those who have achieved a Boston qualifier (BQ) time, those currently pursuing a BQ time (TBQ), and those who have not Boston qualified (NBQ) and have not been actively seeking this outcome as a reason for running marathons. Since the gap in research about motivation among non-professional marathon runners involved identifying differences in motives between the varying levels of performers based on ability, the primary research question addressed in this study asked if there were differences between the motives of the BQ, TBQ, and NBQ groups based on results from the MOMS instrument. The results reveal that there are differences in motives among these groups, yet there were also some similarities.

The higher ability runners, primarily those within the BQ group, reported being more highly motivated to run based on achievement motives when compared to the lower ability runners (NBQ). Likewise, marathoners who indicated the desire to run a BQ time (TBQ)

also revealed being motivated more by achievement motives as well as social motives, when compared to the NBQ group. Social motives were also reported to be higher among the BQ group than the NBQ group but failed to meet the specified level of significance set at 0.05. While the relationship between the BQ participants and social motive category was not established as statistically significant, it does reveal a trend that the higher ability runners, or faster and more competitive runners (i.e., the BQ and TBQ groups), tend to pursue socialization as a source of motivation for running more so than the lower ability marathon population (i.e., the NBQ group). Therefore, it is safe to state that both achievement and social motives can be established as the two forms of motivation that are more commonly associated with higher ability runners.

While social and achievement motives revealed to be different among the groups, the other two sources of motivation, physical and psychological motives, showed to have a similar impact on all marathoners involved in the study. Therefore, the physical and psychological motives were not determined to be a source of difference among performers of varying ability. These outcomes are similar to the findings of previous research, which supports the idea that most marathoners are motivated by some form of physical and psychological influence regardless of the level of competitiveness or ability to run fast marathon times [6,14]. It should be noted that all three groups of participants reported achievement motives as the highest category, followed by physical, psychological, and then social motives. Interestingly, the outcomes for physical motives were much higher than that of psychological motives, even though neither one was significantly different among the three groups. This suggests that all marathoners attribute some aspect of the pursuit of marathon training to the physical benefits associated with this particular sport, whether it be for weight control or general health outcomes [6,15]. It also suggests that psychological and social motives are, for the most part, less of a reason for pursuing marathon training than that of physical or achievement motives, since both categories were reported to be much lower among all three groups of participants collectively.

Conclusion

The purpose of this study was to determine if there are differences in motivation among varying levels of marathoners. The results from this study reveal there is strong correlation between achievement motives and faster running performance. Likewise, the results reveal that social motives are greater among competitive marathoners and are more commonly associated with runners who have faster marathon times. Specifically, it was determined that higher achieving non-professional marathoners (BQ group), reported a greater emphasis on being motivated by achievement motives. Secondly, it was determined that both the BQ and TBQ groups had higher reported levels for both achievement and social motives than the NBQ group. Ultimately, the outcomes of this study indicate that there is a relationship between motivation involving achievement motives and social motives resulting in better marathon performance outcomes. Runners who are motivated primarily by either achievement and/or social motives are more likely to perform better (or improve greater in performance) than those who rely solely on physical and/or psychological motives. Therefore, runners who desire to compete in marathons, especially those who desire to qualify for competitive races such as the Boston Marathon, are more likely to be successful when influenced by achievement-based motives, along with some social aspect involving training habits necessary to accomplish desired performance outcomes.

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