



# Mindfulness and Goal Attainment as a Performance Measure in Student-athletes and Traditional Students at a Rural Division II College

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## Background & Purpose

Mindfulness refers to the ability to be aware of thoughts, perceptions, feelings, and physical sensations on a moment-by-moment basis. The most frequently cited definition of mindfulness was cited in 1994 by Kabat-Zinn as, "...paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (p. 4). Mindfulness can be considered as, 1) a state gained through meditation, 2) a trait with the potential to be developed (Table 1), or 3) a skill developed through training and intervention (Baer et al., 2006).

Mindfulness has the ability, regardless of mode or mechanism, to decrease negative factors related to psychological well-being like anxiety and stress. Negative factors related to psychological well-being in the traditional college student, and student-athlete population has the ability to impact academic performance in college students. Particularly for student-athletes, in addition to academic performance, athletic performance may be implicated by negative factors related to psychological well-being as well. Fostering an individual's innate trait mindfulness may lead to an improvement in the way negative factors of psychological well-being are managed. Improvement in an individual's psychological well-being may lead to an increase in academic or athletic performance based on their student status.

The purpose of this study is to examine the relationship between mindfulness and goal attainment, with stress as a mediating factor, as a measure of athletic and academic success.

## Methods

Participants included in the study were NCAA Division II student-athletes and traditional college students enrolled in a physical activity course, *PED 1300 Fitness Walking*, at a small, regional public university in southeast North Carolina. All student-athletes listed on a 2020-2021 varsity roster, and all students enrolled in the *PED 1300 Fitness Walking* course during the Fall 2020 semester were invited to participate. Of the approximately 450 student-athletes and 404 traditional college students enrolled in a *PED 1300 Fitness Walking* course, 215 (48%) student-athletes and 120 (30%) traditional college students completed the survey.

The instrument utilized for this study consisted of four sections: demographic information, perceived stress levels- *PSS (Perceived Stress Scale)*, trait mindfulness level- *FFMQ (Five Facets of Mindfulness Questionnaire)* (Table 2), and perceived goal attainment level- *AGQ-R (Achievement Goal Questionnaire – Revised)*. In order to collect meaningful data from both traditional college students and student-athletes, a minor adjustment of language was inserted for student-athletes only, to reflect sport-related goals.

The demographic section consists of seven items: gender, race, academic classification, religion, previous meditation experiences, student classification (i.e., student-athlete or traditional student), and sport affiliation if the participant indicates student-athlete status.

After Institutional Review Board approval, the PI sent an email invitation to all the head coaches of varsity teams at the university, as well as the instructors of the *PED 1300 Fitness Walking* course in the Physical Education undergraduate program to discuss the details of the study and share a copy of the online, anonymous survey. The survey was created in *Qualtrics*, an online survey website provided to university students, faculty, and staff. The survey link was distributed to student-athletes and traditional students by team messaging apps and Canvas course messaging systems.

## Methods – Data Analysis

After the data were collected via *Qualtrics*, statistical tests were used for each hypotheses (Figure 1) to determine significance and if correlation relationships exist. Independent t-tests were used for hypotheses 1 and 3-5 to compare a score with two groups of a category (i.e. gender).

Mindfulness scores, goal attainment scores, and perceived stress scores were compared with gender and student status. Analysis of variance (ANOVA) tests were used for hypotheses 2 and 6 to compare a score with more than two groups of a category (i.e. ethnicity).

Mindfulness scores and perceived stress scores were compared with ethnicity. Bi-variate correlations were used to compare two scores for hypotheses 7-9. Correlations between mindfulness scores and both goal attainment and perceived stress scores were examined, as well as goal attainment scores and perceived stress scores.

All data from *Qualtrics* were exported and analyzed using Statistical Package for the Social Sciences (SPSS) software.

**Table 1. Five Facets of Trait Mindfulness**

<i>Act with Awareness</i>	Refers to an individual's ability to stay in the present moment, while ignoring distractions
<i>Describe</i>	Refers to an individual's ability to recognize and label the thoughts and feelings experienced
<i>Non judge</i>	Refers to an individual's ability to remain impartial to the thoughts and feelings experienced, and to resist the urge to put a label on that feeling
<i>Non react</i>	Refers to an individual's ability to remain objective when experiencing thoughts or feelings that may elicit emotions
<i>Observe</i>	Refers to an individual's capacity to be aware and recognize personal thoughts and feelings

**Table 2. Participant Response Rate**

Survey Response	374
Student-athletes	214
Traditional College Students	114
Incomplete Responses	46
Excluded Responses	55
Student-athletes	37
Traditional College Students	18
Analyzed Responses	273
Student-athletes	177
Traditional College Students	96

**Table 1. Example Items from Five Facets of Mindfulness Questionnaire**

<i>Act with Awareness</i>	I find myself doing things without paying attention.
<i>Describe</i>	I am good at finding words to describe my feelings.
<i>Non judge</i>	I think some of my emotions are bad or inappropriate and I should not feel them.
<i>Non react</i>	I perceive my feelings and emotions experience without having to react to them.
<i>Observe</i>	I notice the smells and aromas of things.

**Figure 1: The Hypotheses**

- H1:** *There will be no statistically significant difference in mindfulness scores based on gender*
- H2:** *There will be no statistically significant difference in mindfulness scores based on ethnicity*
- H3:** *There will be no statistically significant difference in mindfulness scores based on student status*
- H4:** *There will be no statistically significant difference in goal attainment scores based on gender*
- H5:** *There will be no statistically significant difference in perceived stress scores based on gender*
- H6:** *There will be no statistically significant difference in perceived stress scores based on ethnicity*
- H7:** *There will be no statistically significant relationship between mindfulness scores and goal attainment scores.*
- H8:** *There will be no statistically significant relationship between mindfulness scores and perceived stress scores.*
- H9:** *There will be no statistically significant relationship between perceived stress scores and goal attainment scores.*
- H10:** *There will be no statistically significant relationship between mindfulness facet scores and perceived stress scores*

## Results

Ten hypotheses were tested, three of which were found to be significant. Results from this study suggest gender does impact perceived stress, and perceived stress and trait mindfulness are moderately, positively related. Further analysis revealed perceived stress and all five facets of mindfulness are moderately, positively related. No statistical significance was found between mindfulness, goal attainment, perceived stress scores and gender or student status groups, or race categories. There was no statistically significant relationship between mindfulness and goal attainment scores or goal attainment and perceived stress scores.

### Hypotheses with Significant Findings

**H1** stated that there will be no statistically significant difference in mindfulness scores based on gender. The mean difference of mindfulness scores between gender groups was significant  $p = .021 < \alpha = 0.05$ , with a calculated significant value of  $t(268) = 2.321$  therefore **H1** was rejected. This result suggests that gender does impact trait mindfulness and that female participants have a greater affinity for mindfulness traits.

**H5** stated that there will be no statistically significant difference in perceived stress scores based on gender. The mean difference of mindfulness scores between gender groups was significant  $p = .000 < \alpha = 0.05$ , with a calculated significant value of  $t(268) = 4.094$  therefore **H5** was rejected. This result suggests that gender does impact perceived stress and that *female* participants have greater levels of perceived stress.

Shoa & Skarliki (2009)	De Vibe et al. (2013)	Rojani et al. (2017)	Chiang & Summel (2019)
Calaguas (2011)	Talib & Zia-ur-Rehman (2012)	Gao et al. (2019)	
Dixon & Kurpis (2008)	Backović et al. (2012)	Mahmoud et al. (2012)	Bodenlos et al. (2013)
			Saleh et al. (2017)

**H10** stated there will be no statistically significant relationship between mindfulness facet scores and perceived stress scores. The correlation between all the individual mindfulness facets: *act with awareness* ( $p = .000 < \alpha = 0.05$ ,  $r = .410$ ), *describe* ( $p = .000 < \alpha = 0.05$ ,  $r = .499$ ), *nonjudge* ( $p = .000 < \alpha = 0.05$ ,  $r = .532$ ), *nonreactivity* ( $p = .000 < \alpha = 0.05$ ,  $r = .302$ ), and *observe* ( $p = .000 < \alpha = 0.05$ ,  $r = .444$ ) demonstrated positive moderate significant relationships with perceived stress, therefore **H10** was rejected, suggesting that as an individual's awareness to, and abilities to describe, observe, not react, and not judge their feelings, cognitions and emotions increases, so does their perceived stress.

	<i>Act with awareness</i>	<i>Describe</i>	<i>Non judge</i>	<i>Non react</i>	<i>Observe</i>
Perceived Stress	(Soysa & Wilcomb, 2013) (Kaiseler et al., 2017) (Branstrom et al., 2011) (Bergin & Pakenham, 2016)	(Kaiseler et al., 2017) (Branstrom et al., 2011) (Bergin & Pakenham, 2016)	(Soysa & Wilcomb, 2013) (Kaiseler et al., 2017) (Branstrom et al., 2011) (Bergin & Pakenham, 2016) (Cash & Whittingham, 2010)	(Soysa & Wilcomb, 2013) (Branstrom et al., 2011) (Bergin & Pakenham, 2016)	(Kaiseler et al., 2017)

## Conclusions

In conclusion, findings from this study based on data collected from student-athletes and traditional college students demonstrated a significant relationship between mindfulness based on gender, with female participants possessing a greater affinity for mindfulness traits. A significant relationship between mindfulness scores and perceived stress scores, suggesting as affinity or mindfulness traits increases, so does perceived stress levels. Further, all facets of mindfulness (*act with awareness, describe, nonjudge, nonreact, observe*) demonstrated a weak positive relationship with perceived stress.

Further research could examine the relationship between mindfulness and coping to determine if a relationship exists and if further development of mindfulness traits improve coping skills and thereby decrease stress (Pena & Ritzer, 2017). Mindfulness has demonstrated a significant relationship with the reduction of factors related to psychological well-being, particularly anxiety and depression. Further studies may expand the present literature to further examine how anxiety and depression are correlated with the individual facets of mindfulness. Relationships based on correlations may provide additional insights into how specific traits can be developed and used to decrease symptoms related to stress, anxiety, and depression (Birrer et al., 2012; Dane, 2011; Glass et al., 2019; Röthlin et al. 2016).

### References:

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