INTRODUCTION

- The popularity of distance running and race participation has increased over the past ten years. 80% increase in race finishers since 2000.1
- 79% of long distance runners are injured annually.2
- The most common running injuries are medial tibia stress syndrome, Achilles tendinopathy, plantar fascitis, and patellofemoral syndrome.3–4
- The Stress and Athletic Injury Model5 identifies three key psychological factors thought to contribute to an athlete’s risk of developing an injury (see Figure 1) – personality factors, history of life stressors, and coping resources. The interaction of these variables can produce a maladaptive stress response, which increases an athlete’s risk of developing an injury.
- Personality
- High levels of perfectionism can create anxiety, fatigue, and stressors, which have negative implications for distance runners.6, 7
- The ideal mood state for competition includes low tension, low fatigue, and high vigor.8
- Wiese-Bjornstal et al.9 found mood state to be a significant predictor of acute injury.
- Stressors
- Life stress and major changes in an athlete’s life increase the risk of both illness and injury development.10
- “Total life change” and “negative life change” are significant predictors of injury.10
- The current body of literature lacks development in addressing the psychological factors that predict the development of: Chronic, microtraumatic injuries
- In a population of novice marathon runners
- Therefore, the purpose of this study is to address some of the limitations in the current literature.

PURPOSE

- The primary purpose of this study is:
- To determine if psychological factors predict injury development in a population of novice marathon runners.

RESEARCH QUESTIONS

- Do novice marathon runners who score higher on measures of perfectionism have more days of running impacted by injury?
- Do novice marathon runners with different motives for running a marathon have more days of running impacted by injury?
- Do novice marathon runners with higher levels of life stress have more days of running impacted by injury?
- Do novice marathon runners with more mood disturbance differ in the number of days injured while training than those with less mood disturbance?

PARTICIPANTS

- 117 novice marathon runners
- 39 males, 78 females
- Enrolled in PE 1262: Marathon Training at the University of Minnesota
- Primarily University of Minnesota undergraduate students

PROCEDURE & MEASURES

- Participants enrolled in PE 1262: Marathon Training at the University of Minnesota were contacted for informed consent.
- All measures were completed at both pre- and post-testing.
- The following measures were completed monthly:
  - Athletic Identity Measurement Scale11
  - Inventory of College Student Life Stress12
  - Physical Activity Enjoyment Scale13
  - Motivation of Marathoners14
- Each week, the Profile of Mood State15 was administered.
- Participants also kept a daily training log. For each completed run, participants could indicate if their training was altered by injury, illness, pain, or fatigue. A ‘Comments’ section allowed participants to specify details if needed.

FIGURE 1. THE STRESS AND ATHLETIC INJURY MODEL

(Adapted from Williams & Anderson, 1998)6

PRELIMINARY RESULTS

<table>
<thead>
<tr>
<th>Number of Days Impacted By:</th>
<th>Range</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injury</td>
<td>0 - 57</td>
<td>7.43 (SD = 11.82)</td>
</tr>
<tr>
<td>Illness</td>
<td>0 - 38</td>
<td>4.10 (SD = 5.94)</td>
</tr>
<tr>
<td>Pain</td>
<td>0 - 57</td>
<td>7.80 (SD = 11.52)</td>
</tr>
<tr>
<td>Fatigue</td>
<td>0 - 50</td>
<td>3.96 (SD = 8.13)</td>
</tr>
</tbody>
</table>

- No significant gender differences were found for number of days impacted by injury (males=7.70, SD =13.72 ; females = 7.84, SD=10.44).
- There was a significant difference (p=0.043) for number of training days impacted by fatigue between males and females (females = 4.60, SD =7.56 ; males = 2.07, SD =3.55).
- There were no significant changes in Athlete Identity, Life Stress, or Mood State over the course of training. Physical activity enjoyment decreased in March and April.

IMPLICATIONS

- In a regular training program, novice marathon runners experience about a week of training impacted by both injury and pain.
- Identifying psychological antecedents to running-related injuries can highlight risk factors in injury development and help with prevention strategies.
- Further analysis into psychological factors needs to be explored.

REFERENCES