



Attenuating Pain with the Past: The Relationship between Nostalgia and Physical Pain

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Introduction

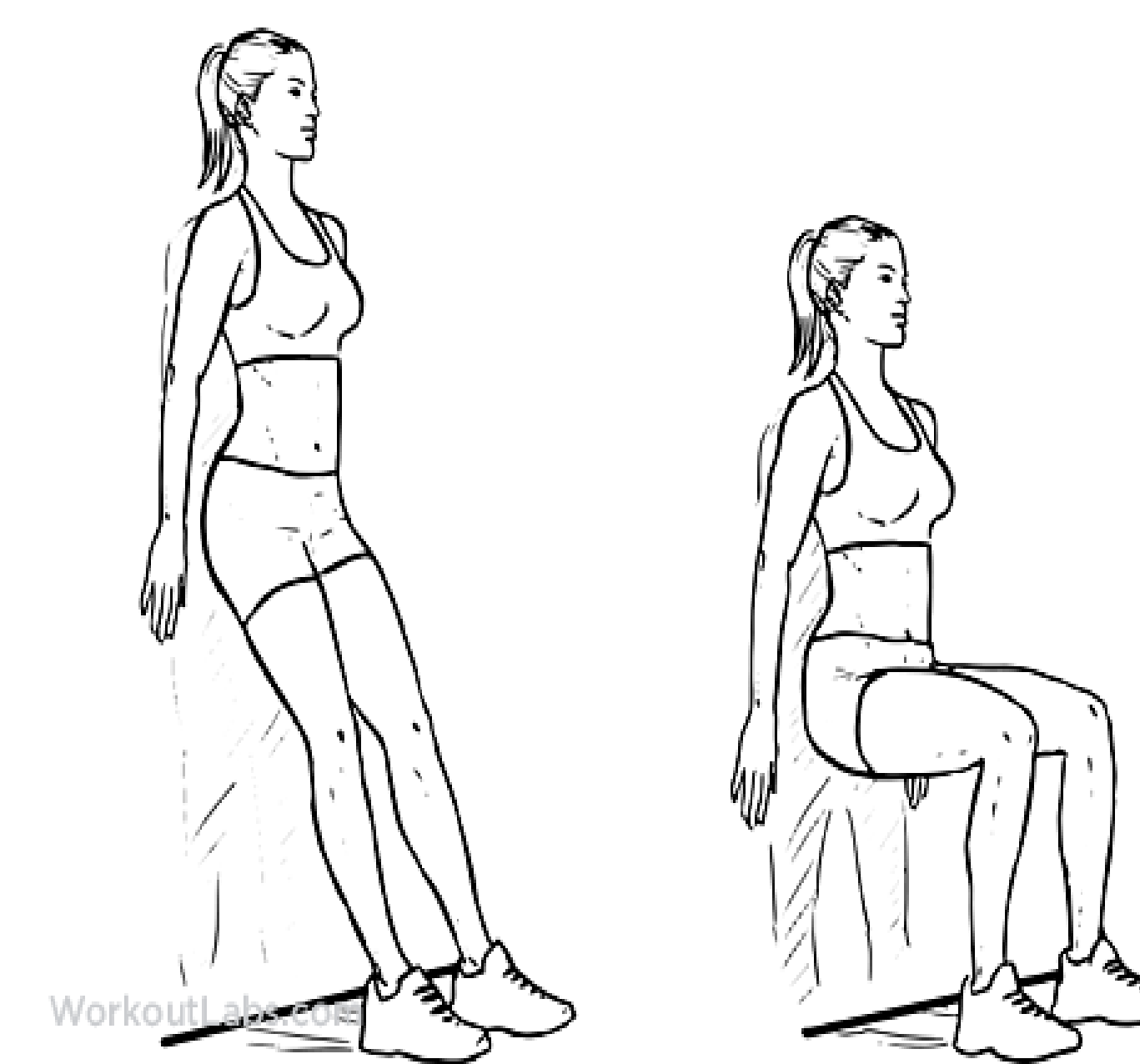
Chronic pain is a pervasive problem impacting an estimated 20% of adults worldwide. Although evidence indicates that chronic pain is associated with lower quality of life (e.g., happiness, energy, sleep), few studies have examined psychological resources that can be used in the management of pain. The present research was designed to examine the relationship between *nostalgia*, a sentimental longing for the past, and the experience of physical pain. Several studies have found, for example, that nostalgic reverie results in many psychological, emotional, and social benefits, with more recent work demonstrating the health-promoting effects of nostalgic reflection. The current studies were designed to see if chronic pain sufferers report a heightened accessibility of nostalgic thought (Study 1); whether participants exposed to a pain induction experience greater feelings of nostalgia (Study 2); and if having persons write about a nostalgic (versus ordinary) event leads to lower pain sensitivity in response to a painful procedure (i.e., algometer task; Study 3). Collectively, these findings hope to add to the growing body of work on the interventional potential of nostalgic reflection to offset physical distress.

Study 1

- Participants consisted of 60 workers from Amazon's Mechanical Turk (30 female; age range 22-64, $M_{age} = 34.25$) who received \$1.00 payment for their participation in the study.
- Individuals rated their current level of pain ("How would you rate your pain right now?") on an 11-point scale (0 = *No pain*, 11 = *Worst pain imaginable*) using the Pain Numeric Rating Scale (NRS-11; Hartrick, Kovan, & Shapiro, 2003).
- Next, everyone completed the Southampton Nostalgia Scale (SNS; Barrett et al., 2010). This scale measured the subjective importance ("How important is it for you to bring to mind nostalgic experiences?") and frequency (e.g., "How often do you experience nostalgia?") of one's nostalgic reflection. All items were averaged together to create a total nostalgia proneness score ($\alpha = .94$).
- Results revealed a significant positive association between pain severity and nostalgia proneness, $r(60) = .34, p = .01, R^2 = .12$.

Study 2

- Participants were 82 undergraduate students (68 female; $M_{age} = 18.95$).
- Following previous research (Bastian et al., 2014), participants were randomly assigned to maintain an upright wall squat for as long as possible (pain condition) or to balance on one leg for a fixed duration of 60 s and to switch legs to avoid tiredness (no-pain condition).
- Next, everyone answered items assessing state nostalgia (e.g., "Right now, I am feeling quite nostalgic."). Responses were recorded on a 9-point scale (1 = *Strongly disagree*; 9 = *Strongly agree*) and items were averaged to create a total state nostalgia score ($\alpha = .99$).
- An independent *t*-test revealed a significant effect of the pain manipulation on state nostalgia, $t(80) = 2.33, p = .02, d = 0.52$, with participants who were exposed to the pain induction reporting significantly higher levels of nostalgia ($M = 4.04, SD = 2.12$) compared to those who were instructed to engage in a balance task ($M = 2.99, SD = 1.95$).



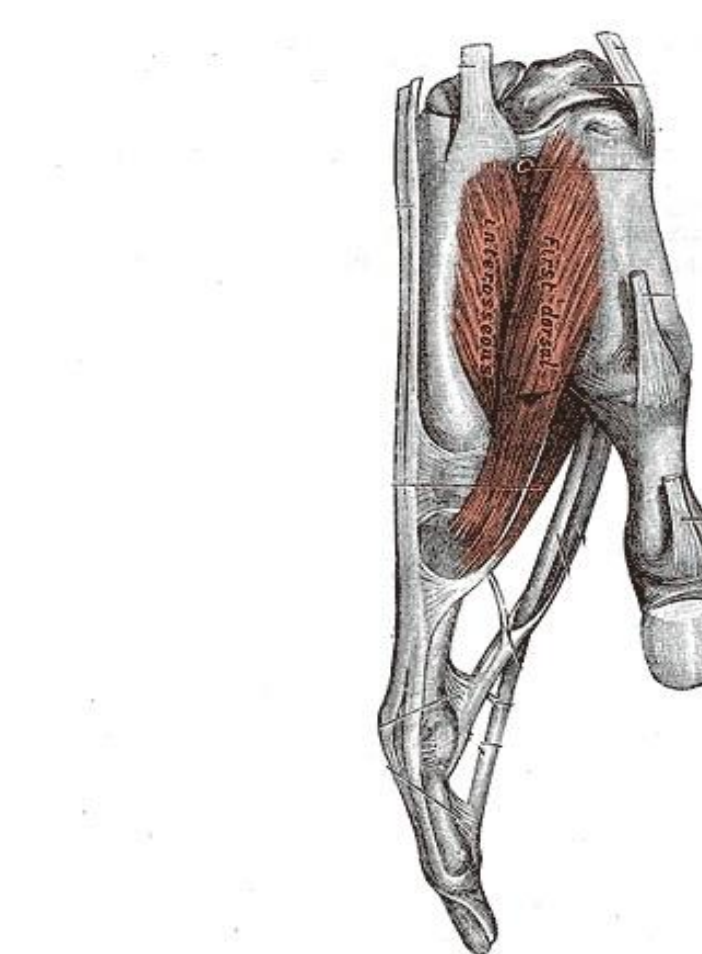
Wall Squat Task
(Pain Condition)

Study 3

- Participants were 81 undergraduate students (41 female; $M_{age} = 22.55$).
- Individuals were exposed to a nostalgia manipulation used in previous research (e.g., Wildschut et al., 2006).
- Everyone completed a pain pressure task used in prior psychology research (DeWall & Baumeister, 2006). Pain tolerance was measured before and after participants complete the nostalgia manipulation using a pressure algometer (Wagner FPX 25). This device assesses the amount of pressure applied to a bone or muscle.
- In the current study, the algometer was applied with increasing pressure perpendicularly at the first dorsal interosseous muscle of the participant's non-dominant hand.

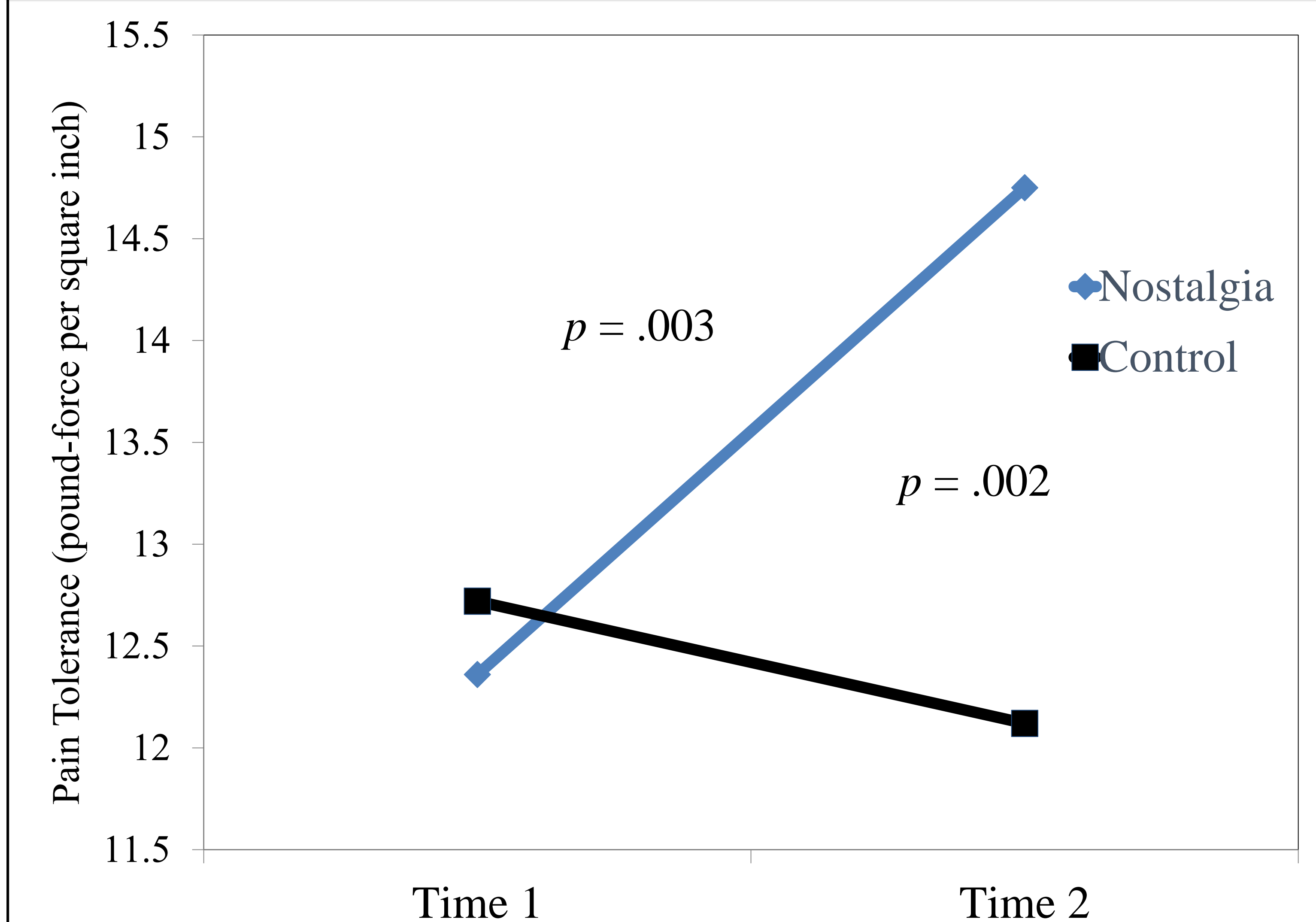


Wagner FPX 25 Algometer



First Dorsal Interosseous
Muscle (Colored in Red)

Study 3 Results



Results revealed a significant nostalgia x time interaction, $p \leq .001$. Compared to the control condition, nostalgic participants demonstrated a greater pain tolerance.



The current project examined the relationship between nostalgia, a sentimental longing for the past, and the experience of physical pain. The findings demonstrated that individuals who experience chronic pain are more prone to nostalgic thought (Study 1) and that eliciting pain in participants results in greater feelings of nostalgia (Study 2). Further, in comparison to the control condition, nostalgic reverie led participants to report lower pain sensitivity (Study 3). Collectively, these findings demonstrate the interventional potential of nostalgic reverie by being the first to show how nostalgia can be a potential mechanism to offset physical distress.

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