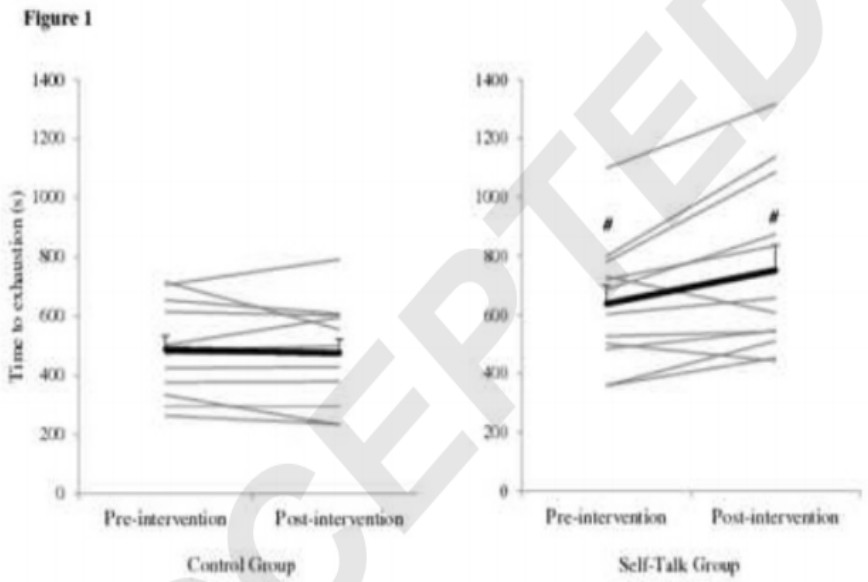
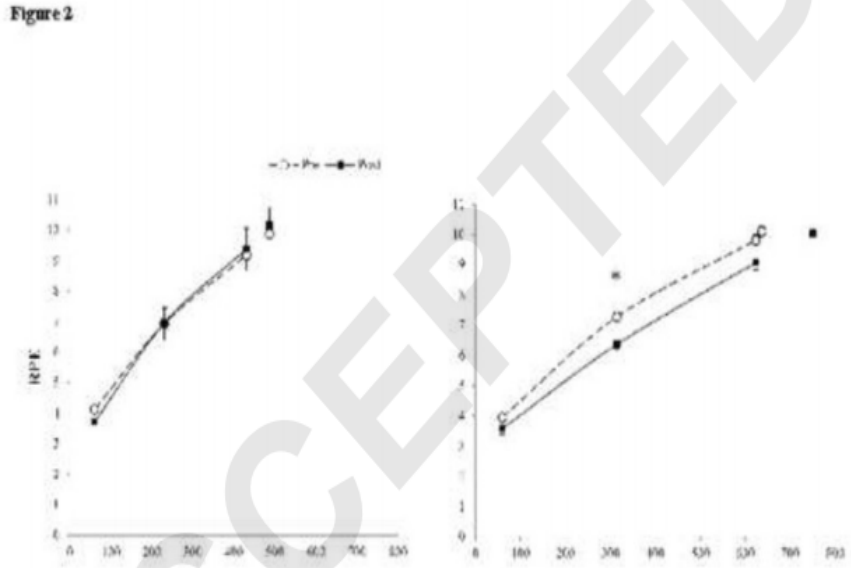
The relationship between mental strategies and runners' sex, speed, and GRIT

Motivational self-talk found to reduce RPE and enhance endurance performance





Supports psychobiological model, Hill's theory cannot explain performance and suggests critical role of brain

Mentally fatigued subjects rated exercise as more difficult, disengaged earlier

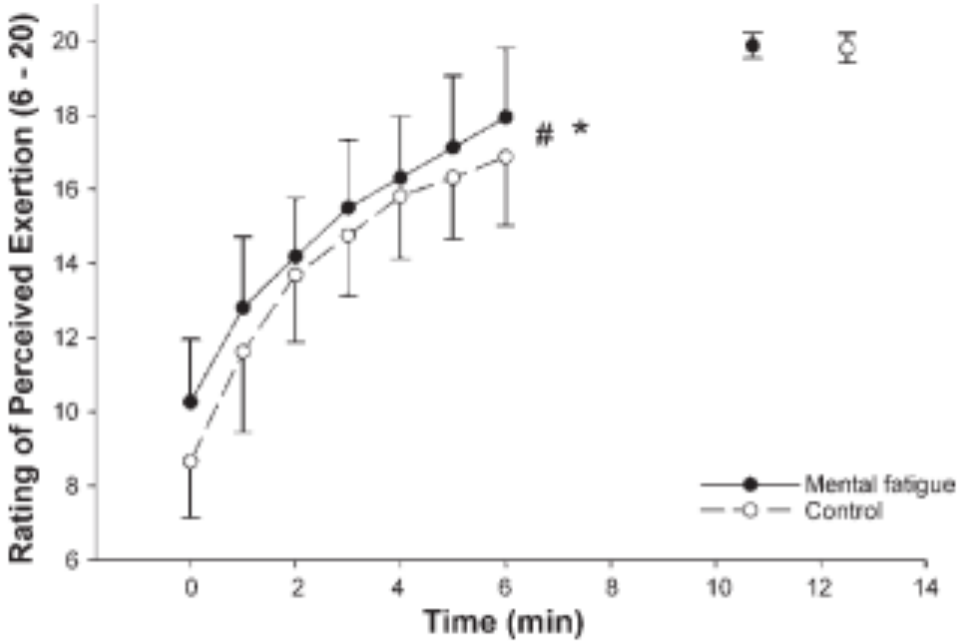


Fig. 3. Effect of mental fatigue on perception of effort during high-intensity cycling exercise. # Significant main effect of time ($P < 0.05$). *Significant main effect of condition ($P < 0.05$). Data are presented as means ± SD. *Minute 0* represents end of warm-up.

British Journal of Sports Medicine suggests teaching athlete to select pacing strategies by associated emotion

What strategies do people use to deal with adversities while running? Do different strategies yield better results (faster speed)? Do these results differ between men and women?

What goals do people have while running? Do different goals yield better results (faster speed)? Do these results differ between men and women?

Is GRIT related to mental strategies? Does it also correlate with speed? Does this differ between men and women?

Race: February 22nd 8K and 15K

40 transcripts

12 women and 28 men of varying ages

We had various methods …

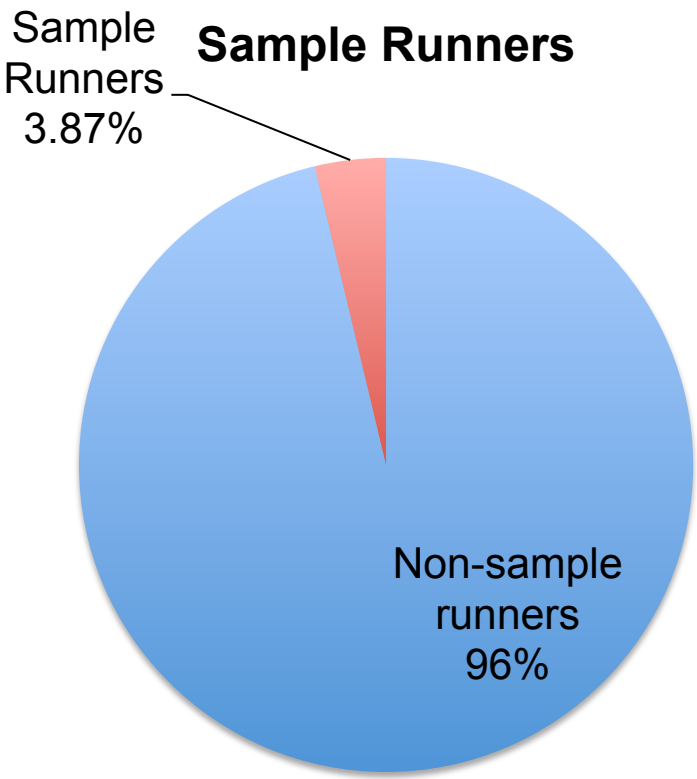
Interviewed at least 5 people each

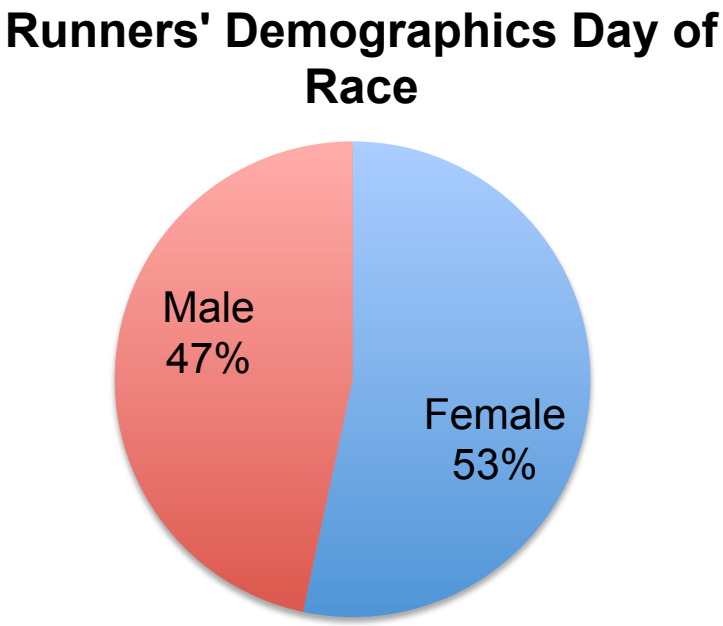
Transcribed data and coded GRIT scores

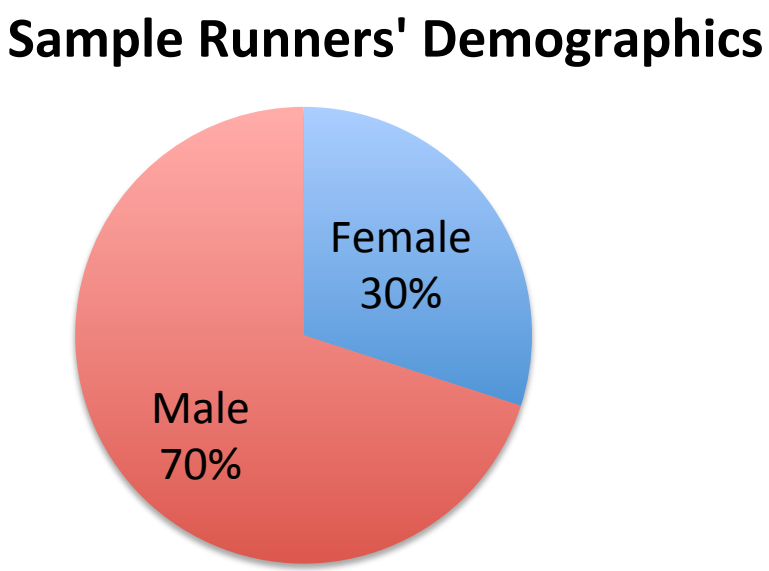
Had peers do pilesorts

Performed reliability analysis

Created comparison charts and graphs of mental strategies, goals, and GRIT vs. speed


Sample Runners
3.87%
Sample Runners
Non-sample runners
96%


Runners' Demographics Day of Race
Male
47%
Female
53%


Sample Runners' Demographics
Female
30%
Male
70%

Females	Average Speed	Average Age
Race	2.51	38.1
Sample Size	2.83	34.1

Males	Average Speed	Average Age
Race	3.02	41.9
Sample Size	3.41	36.8

Reliability analysis (with randomly generated cards)

Card #2	Associative	Associative	Associative	Associative	Associative
Card #12	Associative	Associative	Associative	Associative	Associative
Card #30	Dissociative	Dissociative	Dissociative	Dissociative	Dissociative
Card #50	Dissociative	Associative	Dissociative	Associative	Associative
Card #65	Dissociative	Dissociative	Dissociative	Dissociative	Dissociative

What strategies do people use to deal with adversities while running? Do different strategies yield better results (faster speed)? Do these results differ between men and women?

My mental strategy is…

Associative

"Telling myself I can make it through, and nothing's over."

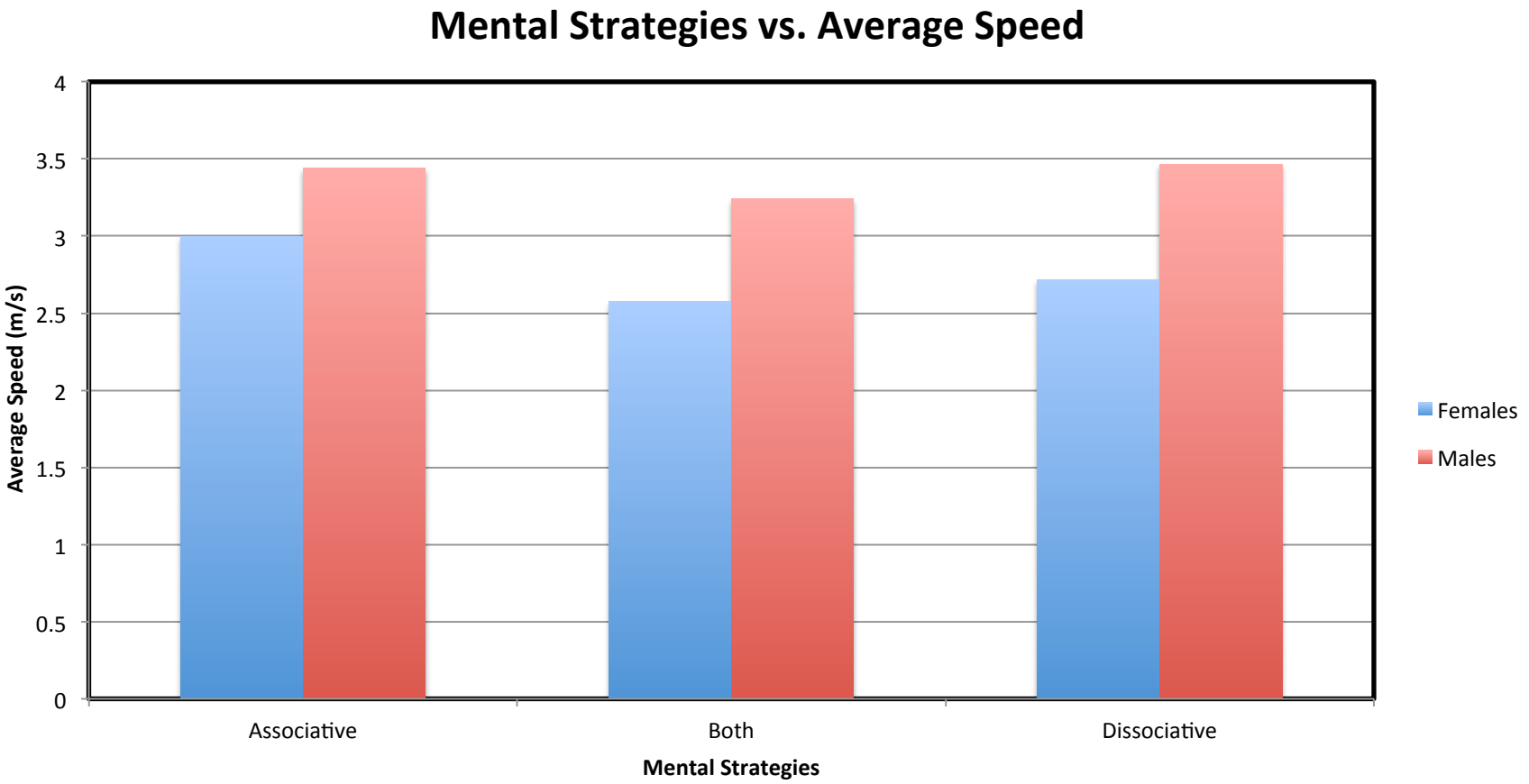
"I use landmarks as I go."

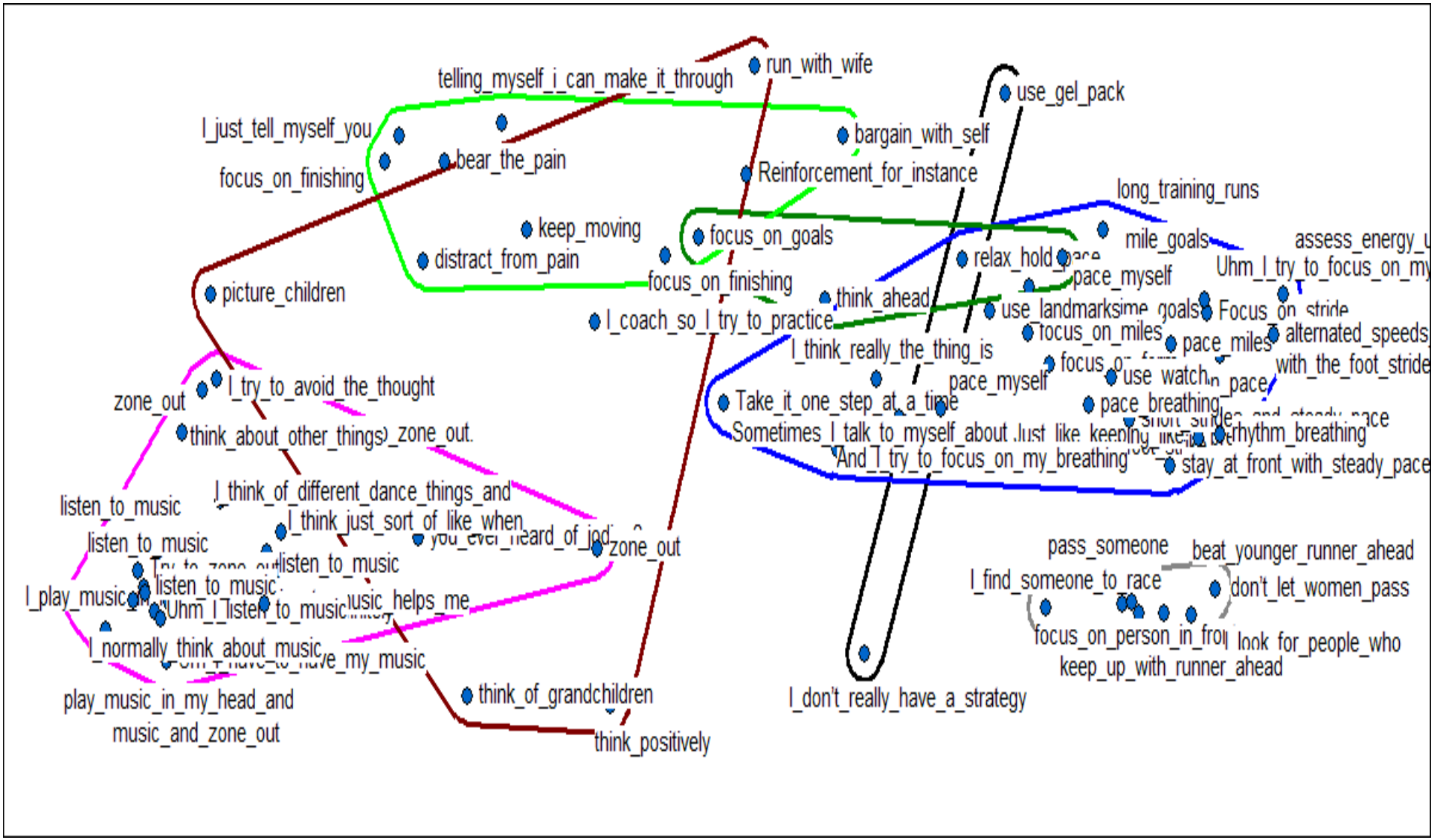
Dissociative

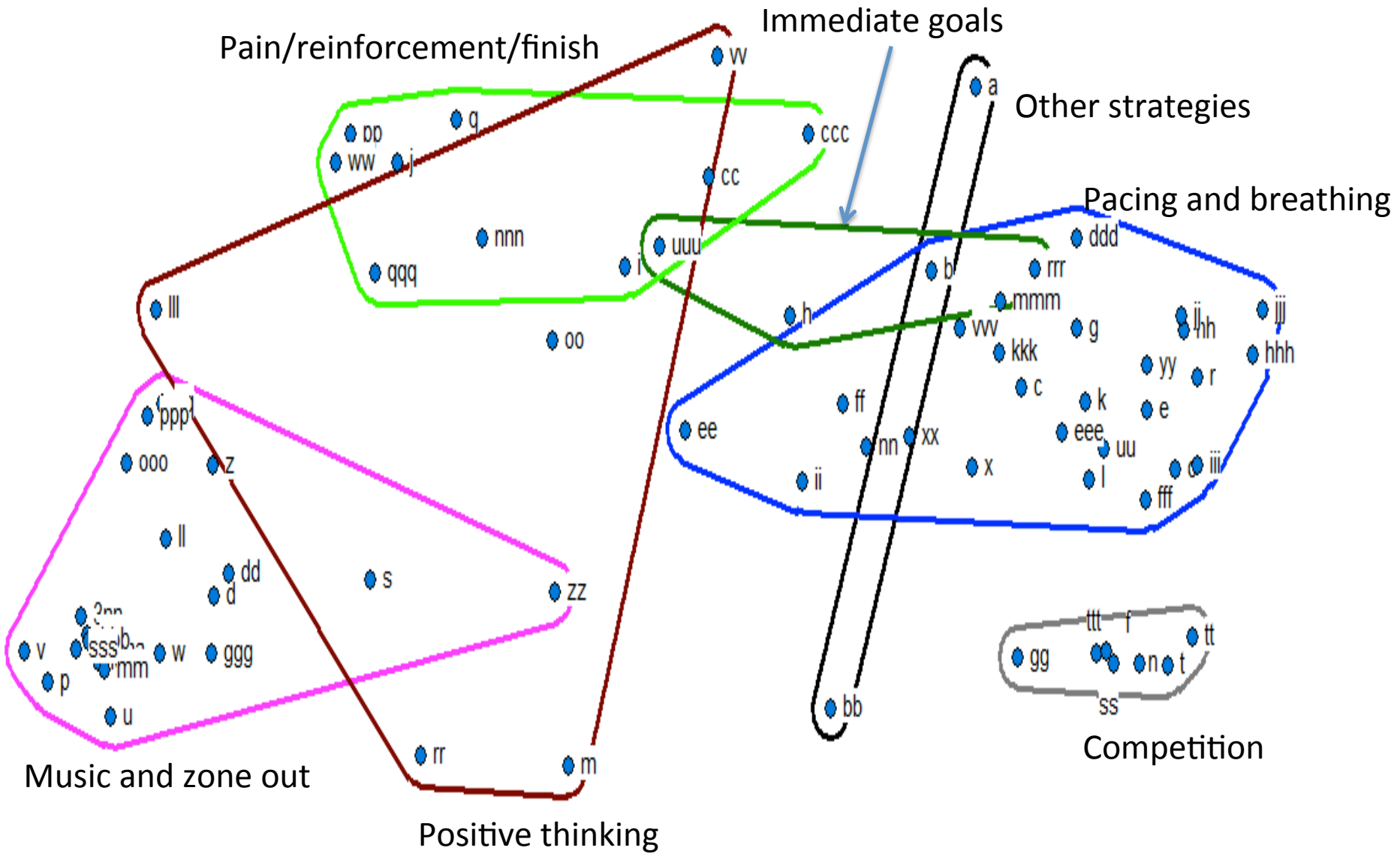
"I run I'm just zoned in, I just ignore my surroundings. I listen to music too.

"Don't think about the pain."

Men run faster than women using any of the three strategies




telling_myself_i_can_make_it_through
run_with_wife
use_gel_pack
I_just_tell_myself_you
bargain_with_self
bear_the_pain
focus_on_finishing
Reinforcement_for_instance
long_training_runs
keep_moving
focus_on_goals
mile_goals
assess_energy_u
distract_from_pain
relax_hold
pace_myself
Uhm_I_try_to_focus_on_my
focus_on_finishing
picture_children
think_ahead
use_landmarksime_goals
Focus_on_stride
I_coach_so_I_try_to_practice
focus_on_miles
pace_miles
alternated_speeds
I_think_really_the_thing_is
with_the_foot_stride
pace_myself
use_watch_n_pace
zone_out
I_try_to_avoid_the_thought
Take_it_one_step_at_a_time
pace_breathing
think_about_other_things_zone_out.
Sometimes_I_talk_to_myself_about
rhythm_breathing
And_I_try_to_focus_on_my_breathing
stay_at_front_with_steady_pace
I_think_of_different_dance_things_and
listen_to_music
I_think_just_sort_of_like_when
listen_to_music
zone_out
pass_someone
beat_younger_runner_ahead
listen_to_music
I_find_someone_to_race
don't_let_women_pass
I_play_music
listen_to_music
Uhm_I_listen_to_music
I_normally_think_about_music
focus_on_person_in_fro
I_look_for_people_who
keep_up_with_runner_ahead
play_music_in_my_head_and
music_and_zone_out
think_of_grandchildren
think_positively
I_don't_really_have_a_strategy


Pain/reinforcement/finish
Immediate goals
Other strategies
Pacing and breathing
Music and zone out
Positive thinking
Competition
vv
pp
q
ccc
ww
j
cc
nnn
uuu
qqq
i
lll
oo
h
ppp
ooo
z
ll
dd
d
s
zz
v
sss
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eee
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iii
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ii
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My mental strategy is…

Competition

"I try not to let other women pass me."

"I'm usually focused on the person in front of me, and either catching up with them or not losing any more distance"

Immediate Goals

"I basically just get started, pace myself, and finish."

"I set a goal for each mile."

My mental strategy is…

Music/zone out

"I listen to a lot of hip hop music when I run. R&B, gospel, it doesn't matter."

"I have an awesome playlist. So I kind of zone out everybody else."

Positive Thinking

"I picture my children at the finish line."

"The fact that the two of us are together, that really helps, and just thinking positively."

My mental strategy is…

Pacing and breathing

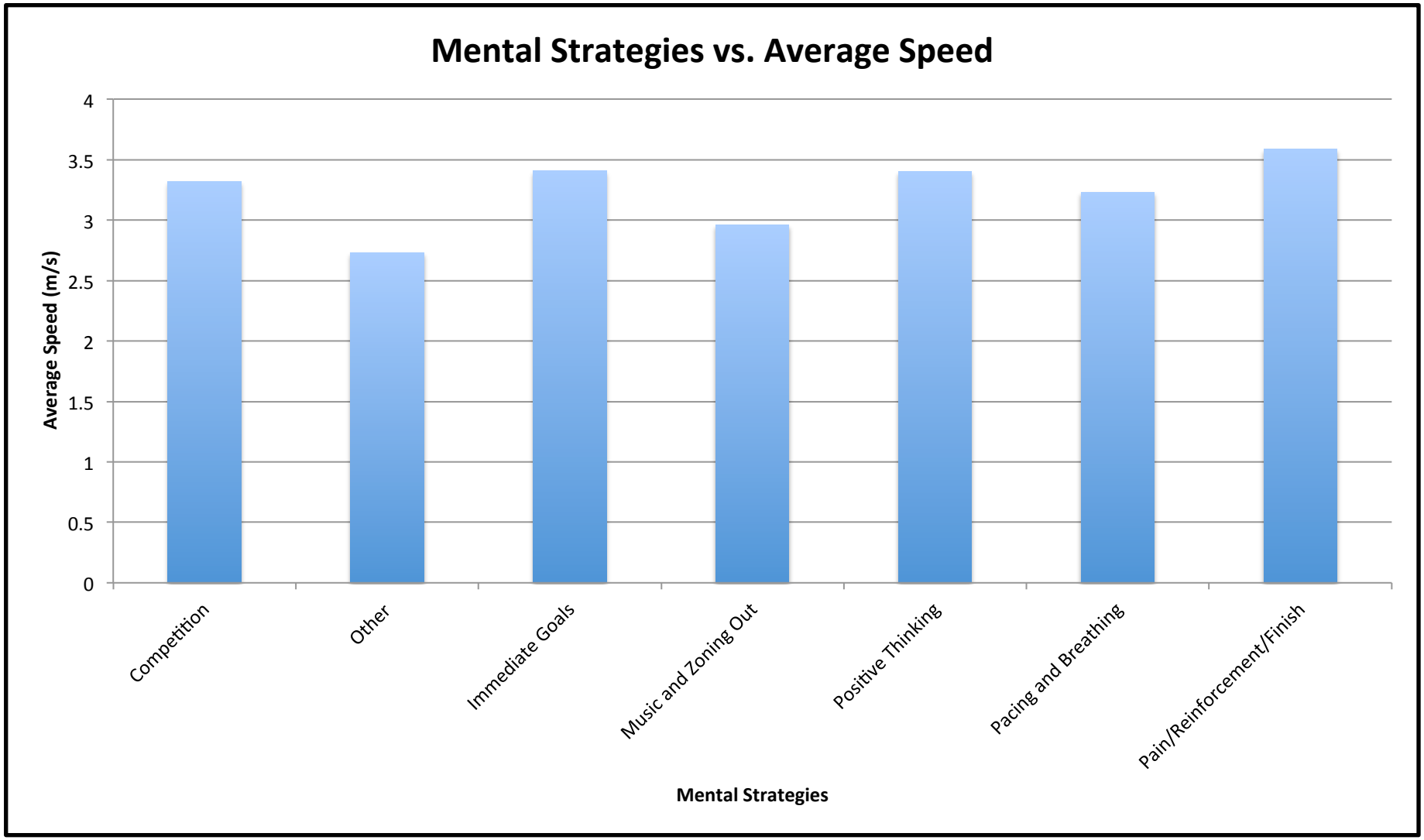
"I concentrate on trying to do an even pace, not go out too fast."

"Slow down my breathing, and keep pace with my foot strike."

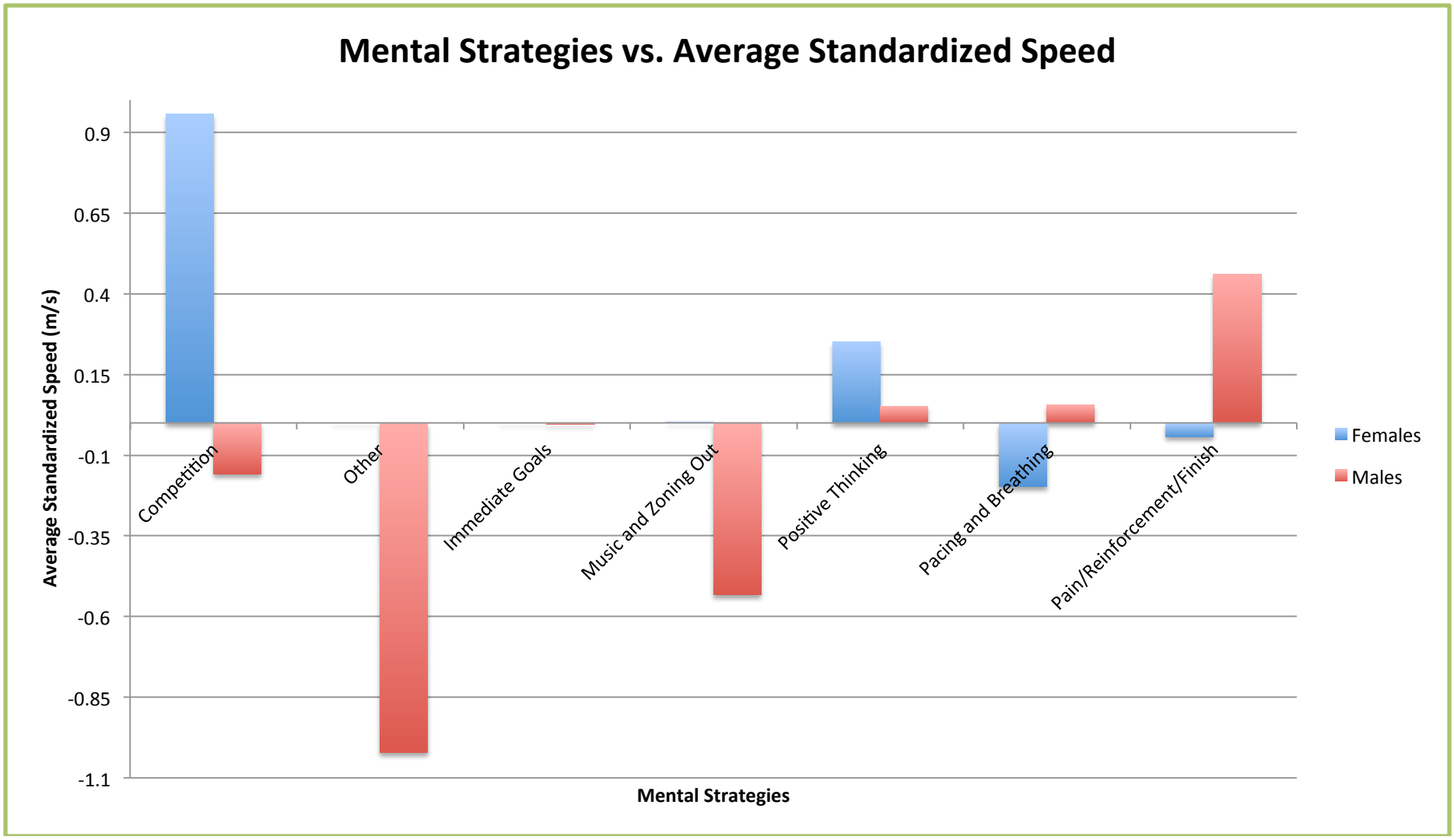
Pain/Reinforcement/Finish

"Don't think about the pain."
"Mind over matter."
"Just to stay focused on finishing."

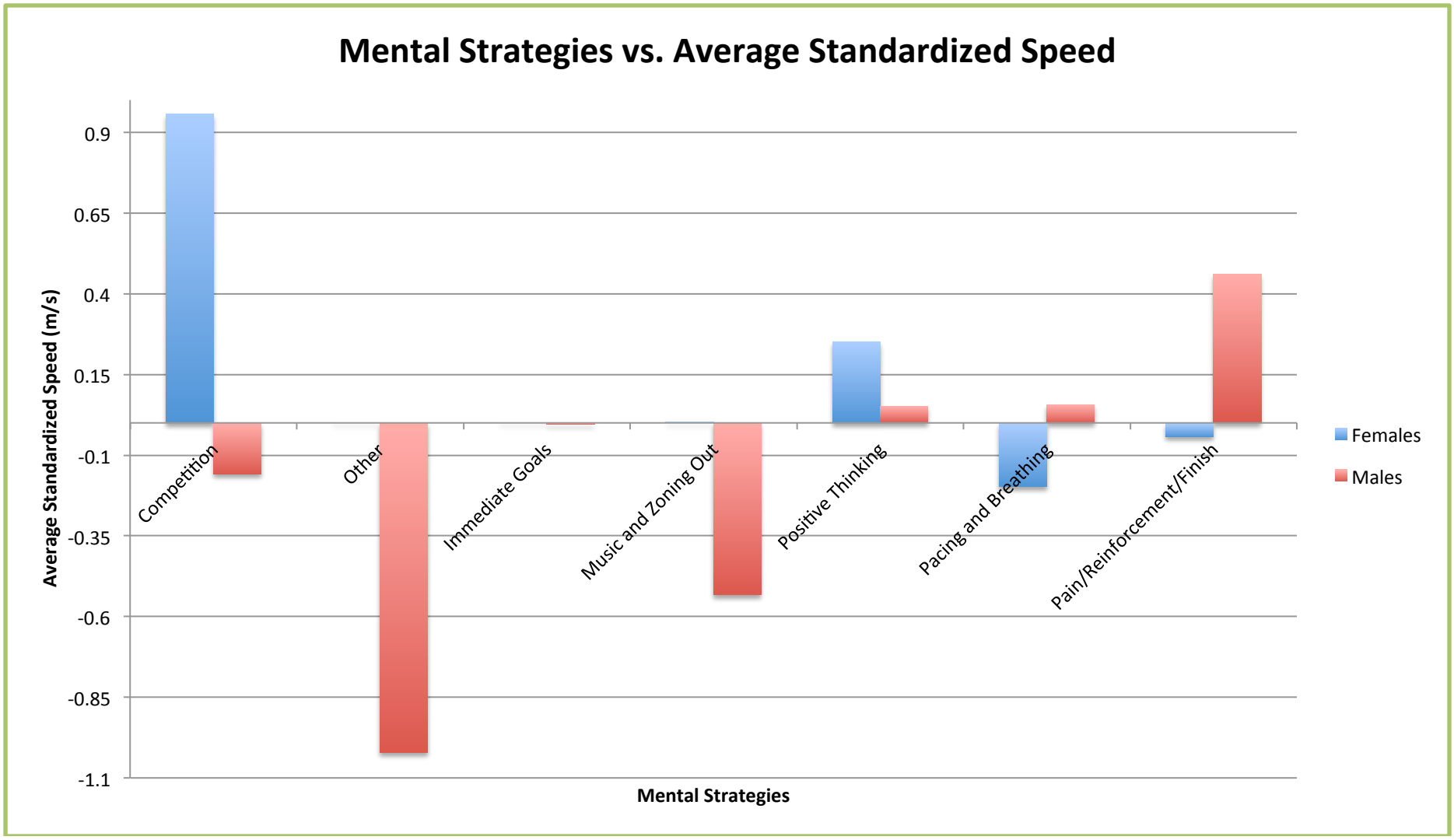
Overall, running faster correlates with thinking about finishing/pain/reinforcement, competition, or immediate goals



Faster women tend to think about competition



Faster men tend to think about pain/ reinforcement/finishing



What goals do people have while running? Do different goals yield better results (faster speed)? Do these results differ between men and women?

My goal is…

Just finish

"To finish… I never ran an 8k before."

Feel good

"My goal was to go out there and run relatively even and feel good."

Pace

"Somewhere around 8 minute miles."

My goal is…

Time

"37 minutes."

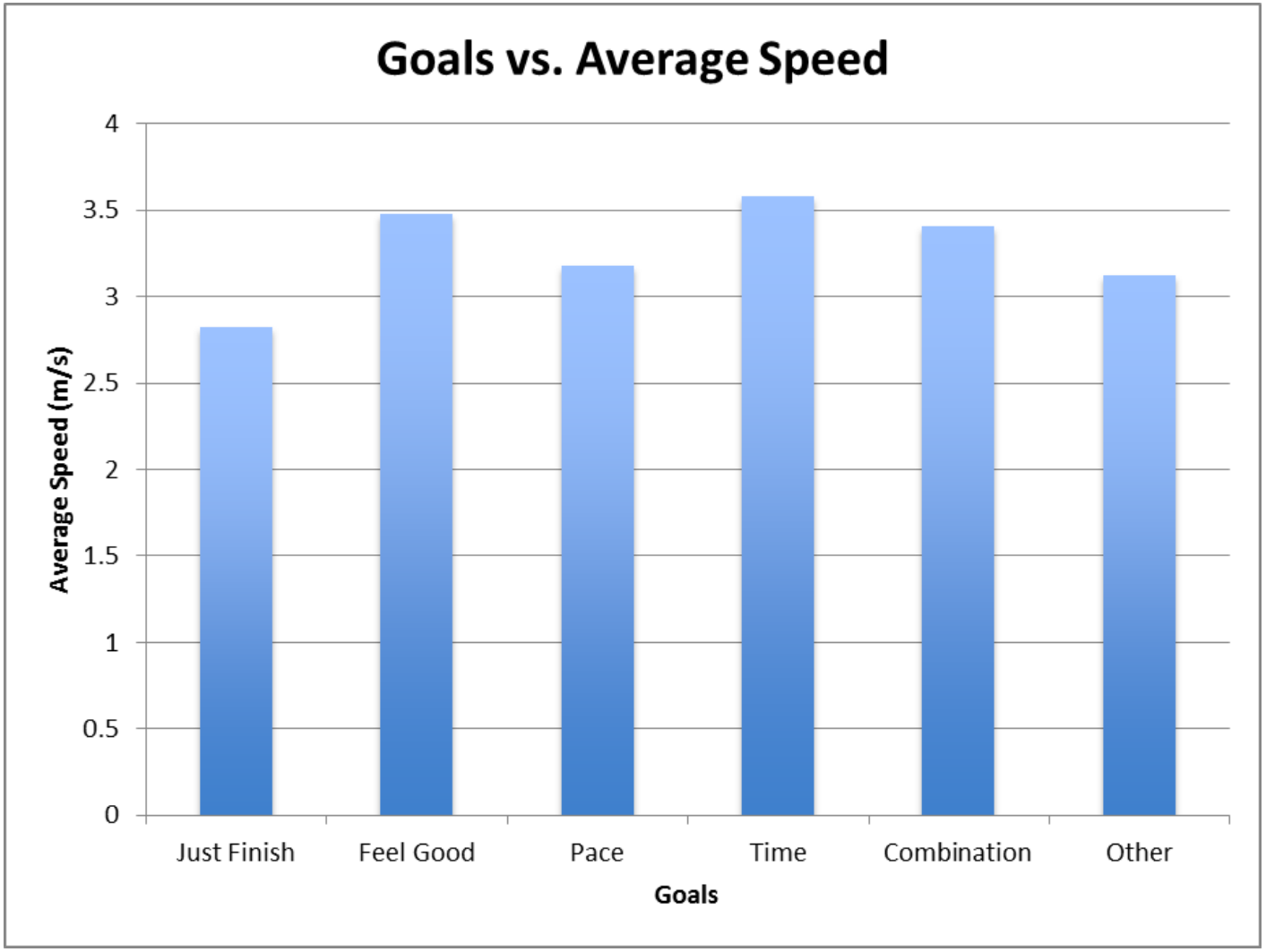
Combination

"To finish well and to get a better time for the Peachtree Road Race."

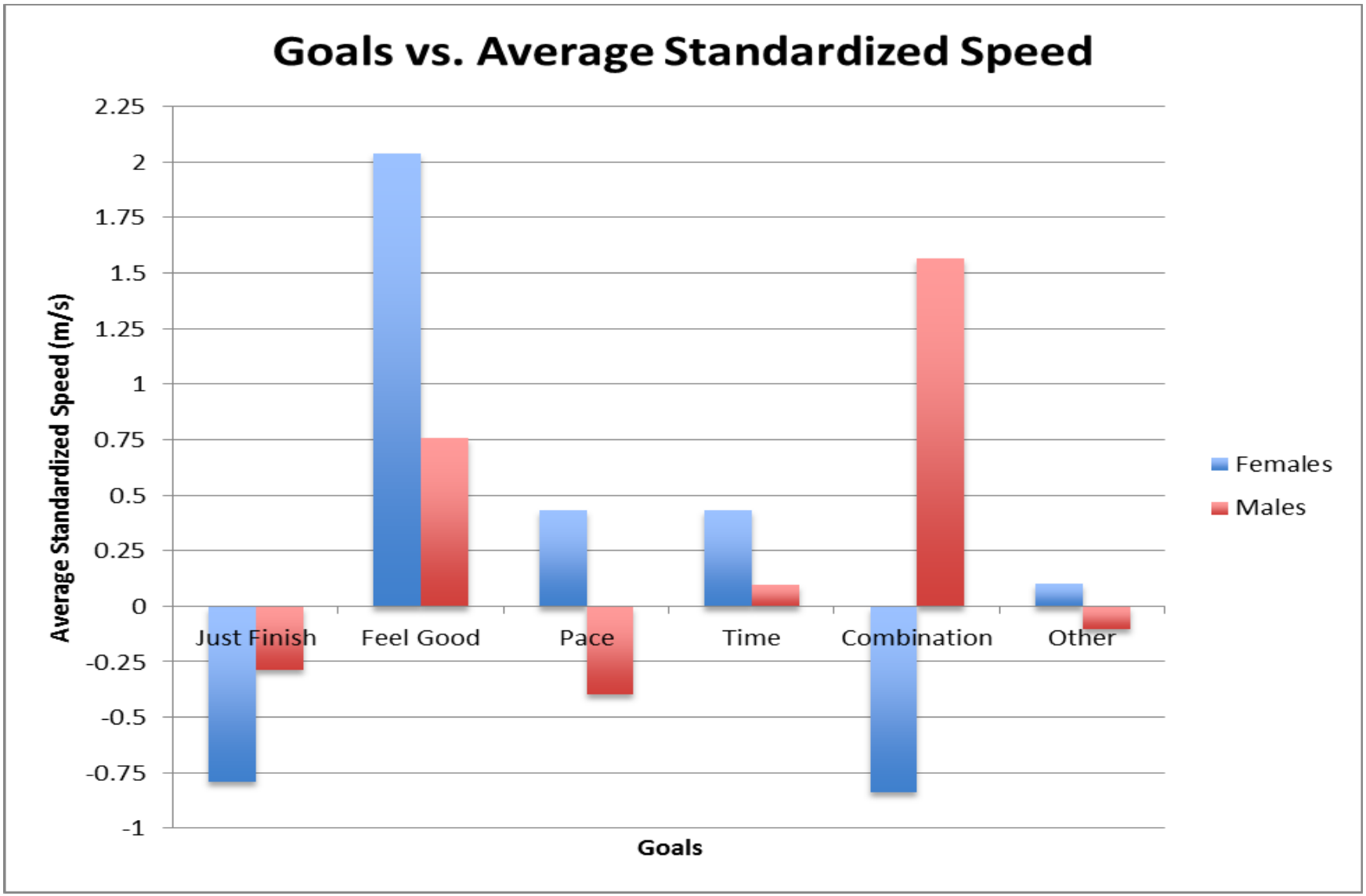
Other

"I'm preparing for a marathon, so I wanted to be around another group of people"

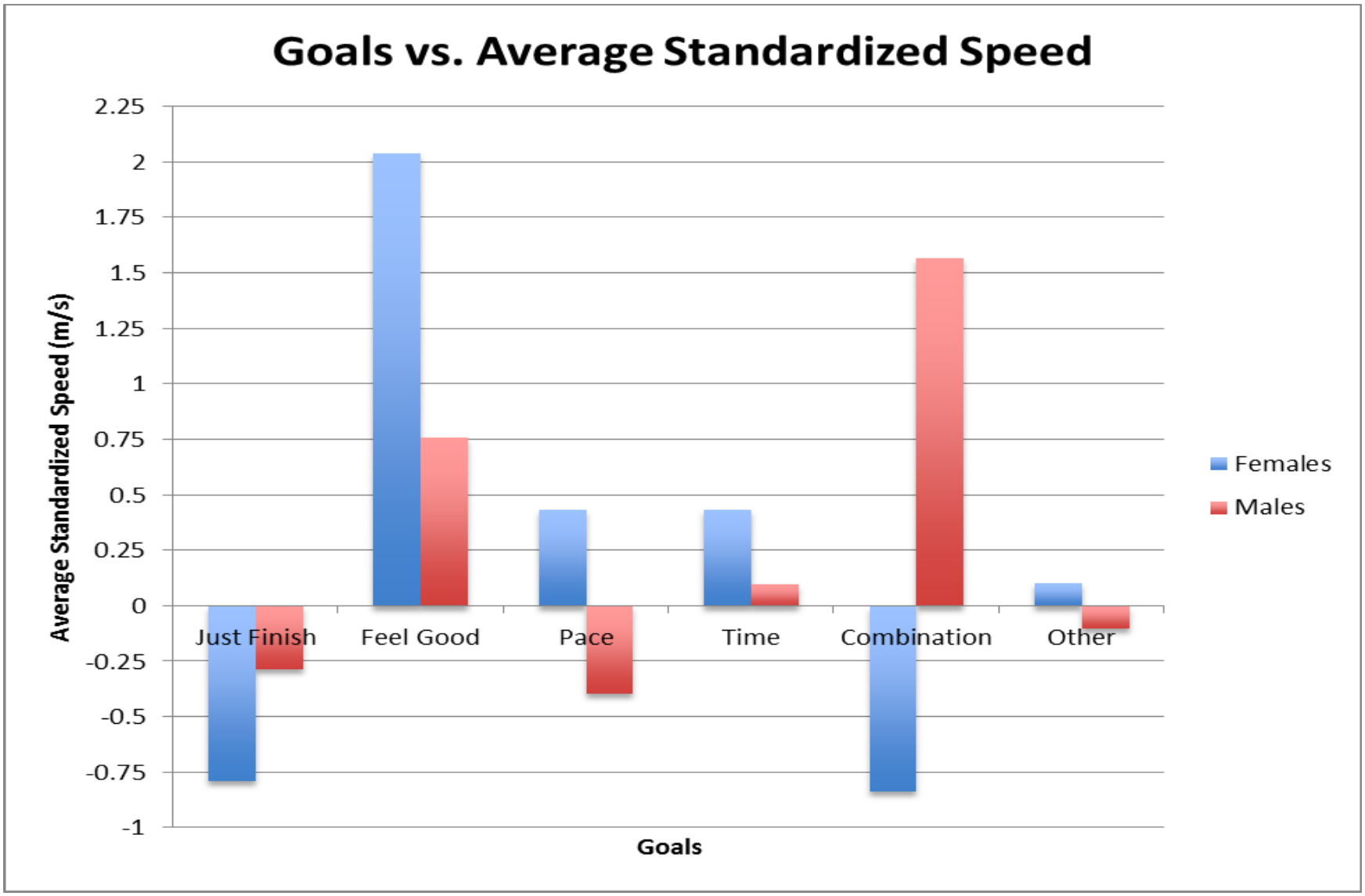
On average, runners who run faster have goals related to specific times or “feeling good”



Females who run faster tend to have goals related to “feeling good”



Males who run faster tend to have a combination of more than one goal



Is GRIT related to mental strategies?
Does it also correlate with speed? Does this differ between men and women?

1. New ideas and projects sometimes distract me from previous ones				
___ Very much like me	___ Mostly like me	___ Somewhat like me	___ Not much like me	___ Not like me at all

2. Setbacks don't discourage me				
___ Very much like me	___ Mostly like me	___ Somewhat like me	___ Not much like me	___ Not like me at all

3. I have been obsessed with a certain idea or project for a short time but later lost interest				
___ Very much like me	___ Mostly like me	___ Somewhat like me	___ Not much like me	___ Not like me at all

4. I am a hard worker				
___ Very much like me	___ Mostly like me	___ Somewhat like me	___ Not much like me	___ Not like me at all

5. I often set a goal but later choose to pursue a different one				
___ Very much like me	___ Mostly like me	___ Somewhat like me	___ Not much like me	___ Not like me at all

6. I have difficulty maintaining my focus on projects that take more than a few months to complete				
___ Very much like me	___ Mostly like me	___ Somewhat like me	___ Not much like me	___ Not like me at all

7. I finish whatever I begin				
___ Very much like me	___ Mostly like me	___ Somewhat like me	___ Not much like me	___ Not like me at all

8. I am diligent				
___ Very much like me	___ Mostly like me	___ Somewhat like me	___ Not much like me	___ Not like me at all

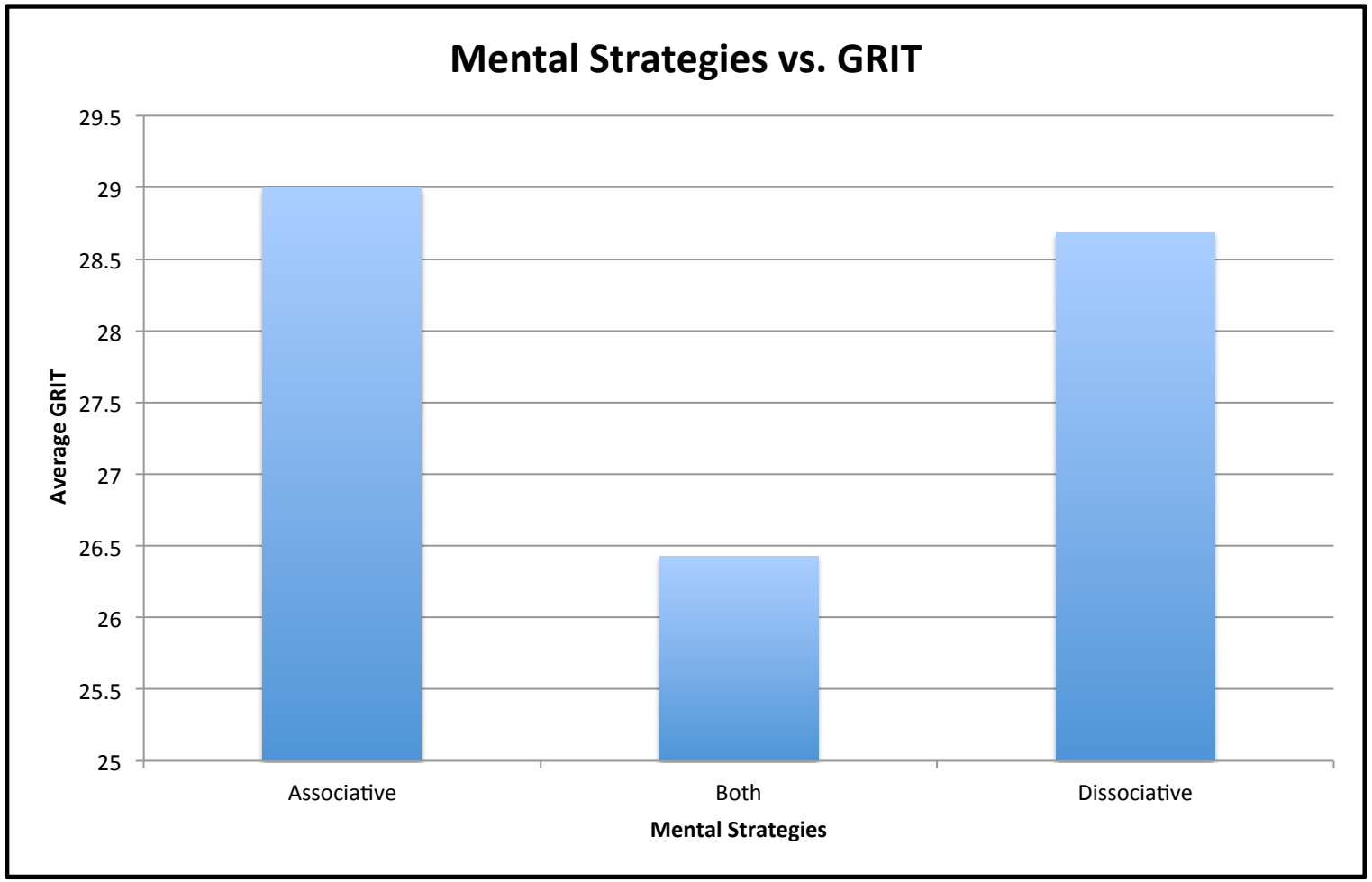
RC: 1,3,5, 6

__1_ Very much like me	_2__ Mostly like me	__3_ Somewhat like me	__4_ Not much like me	__5_ Not like me at all

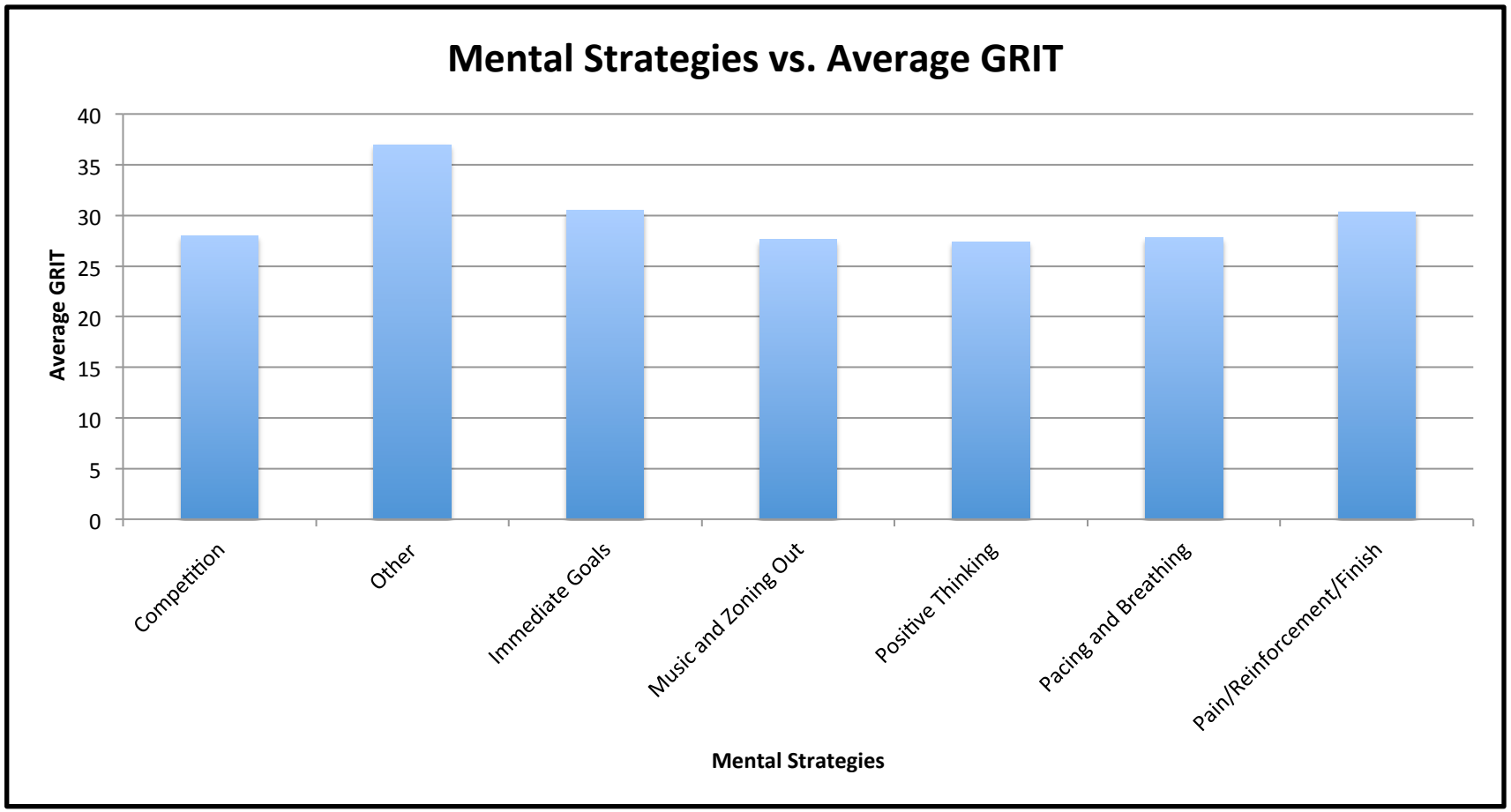
NORMAL CODE: 2,4,7,8

__5_ Very much like me	_4__ Mostly like me	_3__ Somewhat like me	_2__ Not much like me	__1_ Not like me at all

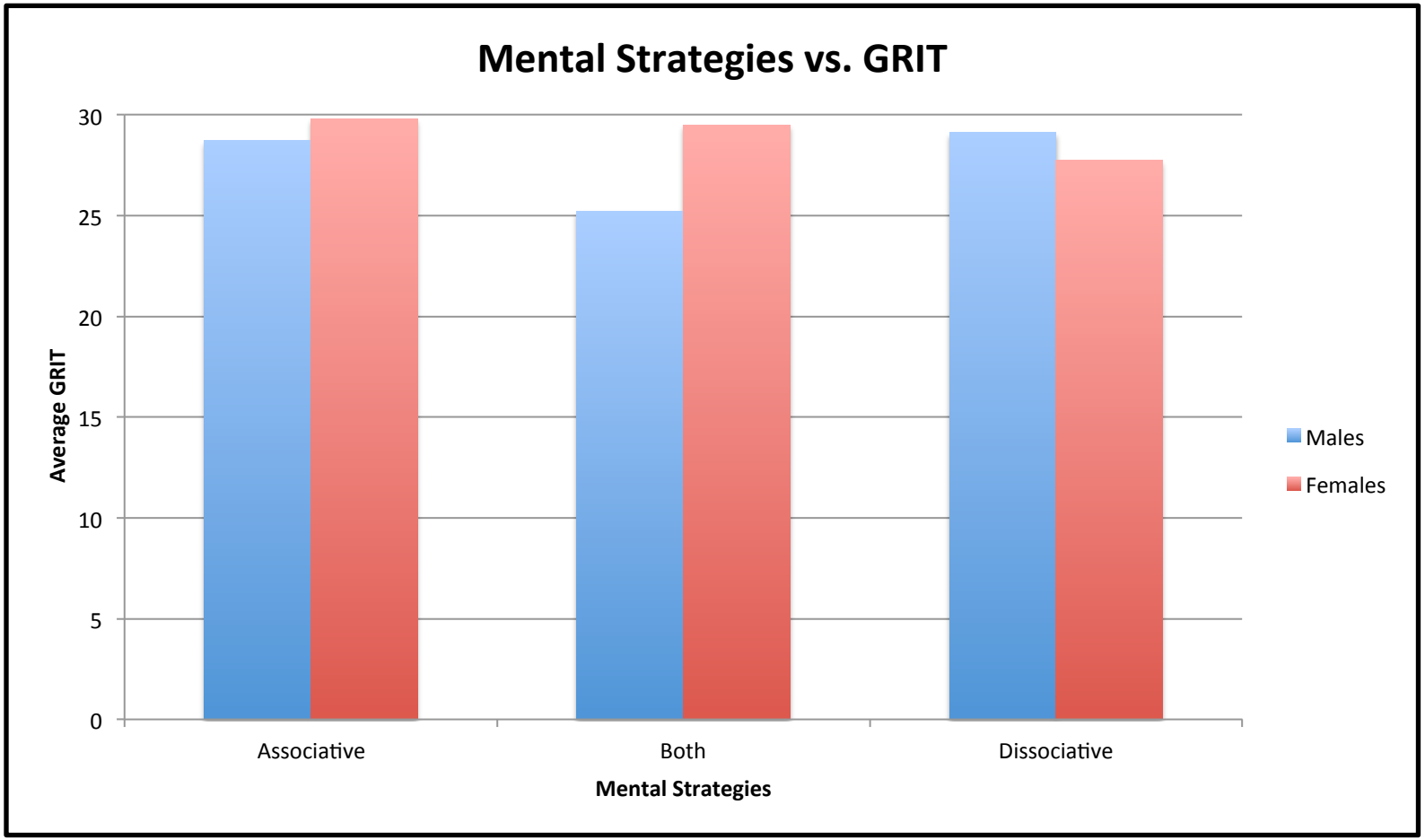
People who use associative mental strategies correlate with having higher average GRIT



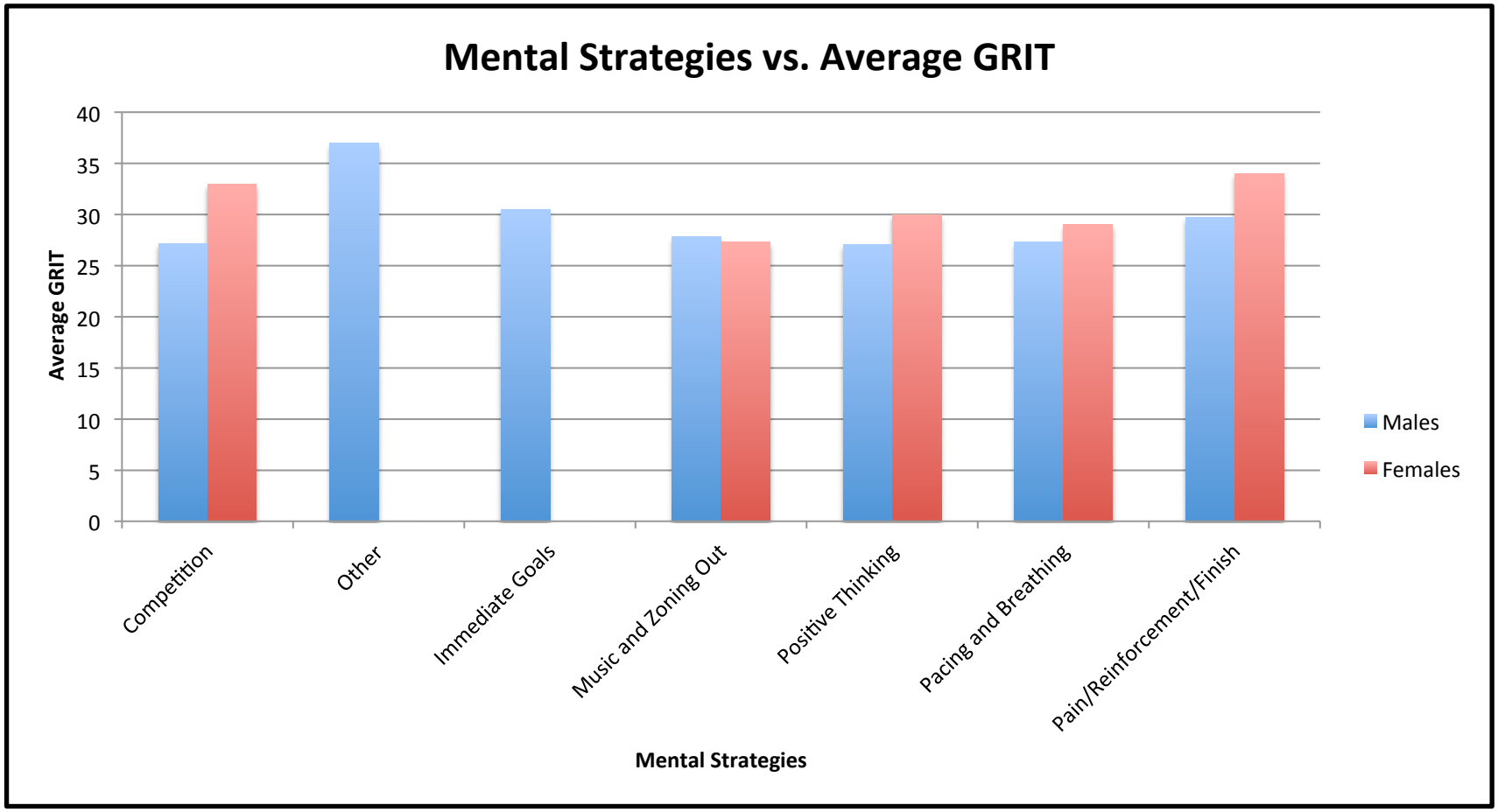
People with the highest average GRIT also use “other” mental strategies while running



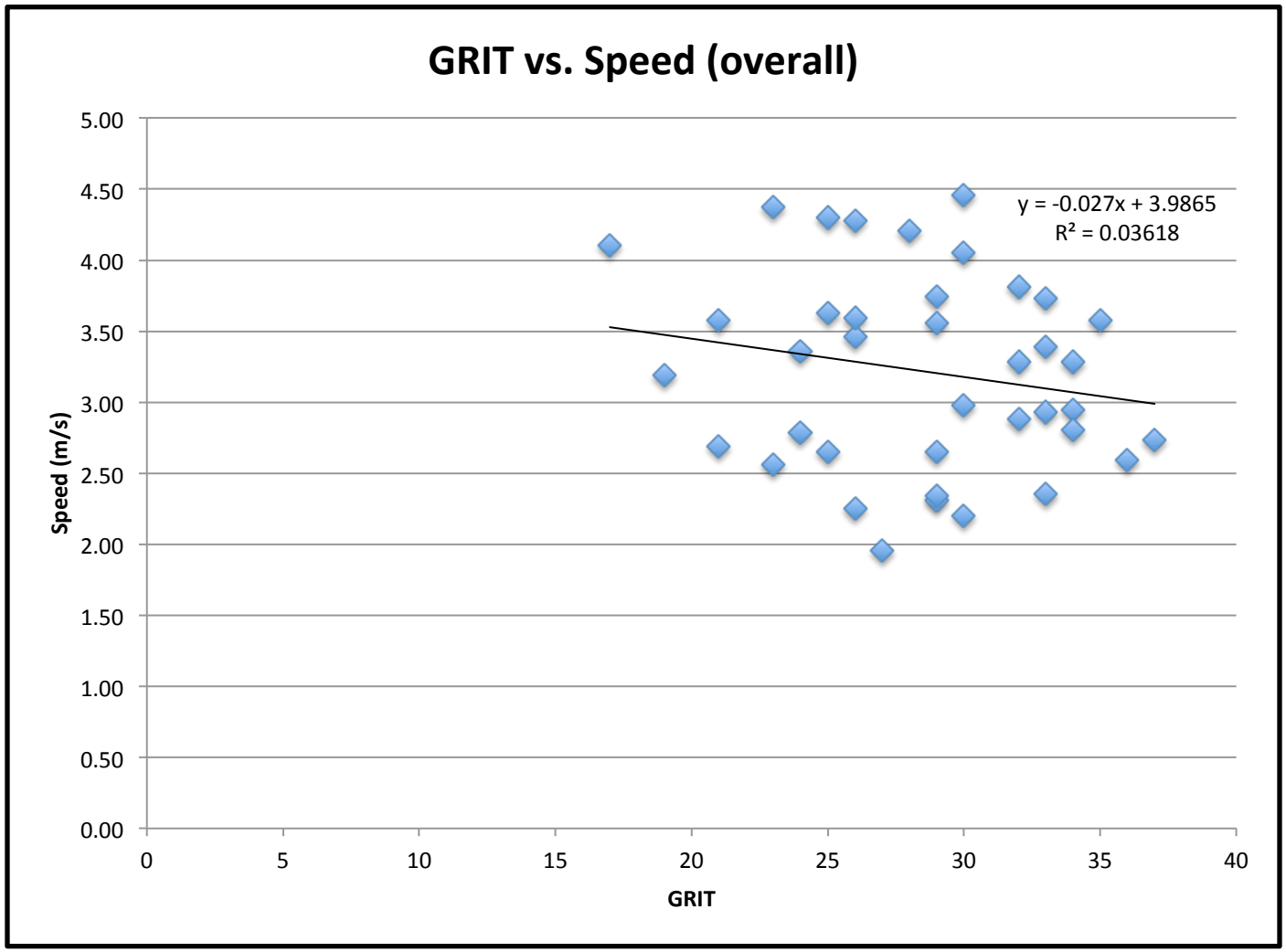
Men with higher average GRIT tend to use dissociative mental strategies while women tend to use associative strategies



Higher average GRIT associates with pain/reinforcement/finishing in women and with “other” mental strategies in men



GRIT and speed are inversely related



Why does this matter?

Works Cited

Blanchfield, A. W., Hardy, J., de Morree, H. M., Staiano, W., & Marcora, S. (2014). Talking Yourself out of Exhaustion: The Effects of Self-Talk on Endurance Performance.*Medicine & Science in Sports & Exercise*.

Noakes, T. D. (2011). Time to move beyond a brainless exercise physiology: the evidence for complex regulation of human exercise performance. *Applied Physiology, Nutrition, and Metabolism*, *36*, 23-35.

Marcora, S. M., Staiano, W., & Manning, V. (2009). Mental Fatigue Impairs Physical Performance In Humans. *Journal of applied Physiology*, *106*, 857-864

Baron, B., Moullan, F., Deruelle, F., & Noakes, T. (2009). The role of emotions on pacing strategies and performance in middle and long duration sport events. *British Journal of Sports Medicine*, *45*, 511-517.