

Teacher and Student Wellness Study: A Trauma-Informed Yoga Intervention

Winter 2023
Park County, MT



LIVINGSTON
PUBLIC SCHOOLS

Background: Educators (Gardiner + Livingston School Districts)

**“I’m no fun anymore.... I’m not connected with my class anymore. I’m not connected to ANYONE in my building. I’m so [expletive] lonely!!!”
(Participant, 2022)**

- America is experiencing an unprecedented mental health emergency; in a survey sampling over 1.5 million Americans in September 2020, more than 8 out of 10 who took a depression screen scored as having symptoms of moderate to severe depression (Mental Health America, 2021).
- More than a quarter of teachers and principals report depression symptoms, and nearly 75% of teachers and 85% of principals point to high levels of job-related stress (Will, 2022).
- Given the number of educators leaving the profession recently, along with their cited reasons for resignations (burnout, lack of support, etc.), it is critical to support educator mental health in order to concurrently bolster student well-being (Kim et al., 2022; Lever et al., 2017).

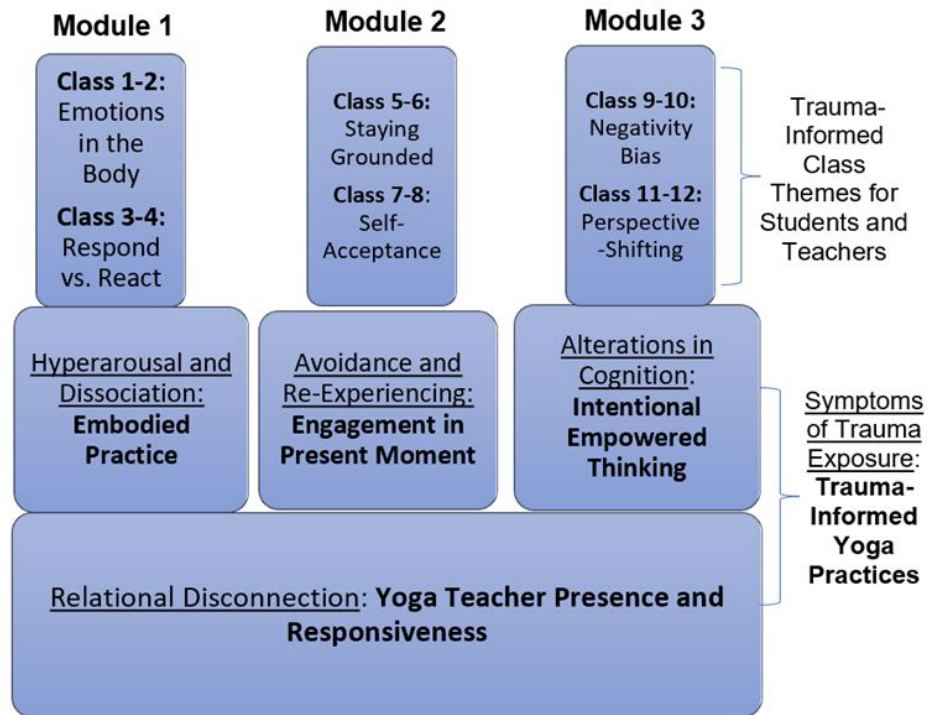
Background: Students (Gardiner High School+ Park High School Students)

- More than 1/3 of Montana adolescents aged 12-17 recently sought treatment for a major depressive episode (Montana Department of Health and Human Services, 2016).
- The rate of youth suicides (ages 11-17) in Montana is more than twice the rate of youth suicides nationally (Kaiser Family Foundation, 2016)
- Students in the participating districts have faced ongoing traumas ranging from suicides to natural disasters, such as the flood of the Summer of 2022

5 Year Project Timeline

Year 1: Winter 2019	Pilot F2F trauma-informed yoga intervention after school in rural MT high school (Surveys only)
Year 2: Winter 2020	Pilot F2F trauma-informed yoga intervention during 1 high school PE class in rural Montana (Surveys + Cortisol testing)
Year 3: Winter 2021	Pilot remotely-delivered intervention during 2 high school PE classes with a control group in rural Montana (Surveys + Cortisol testing)
Year 4: Winter 2022	Pilot remotely-delivered teacher wellness intervention before/after school in rural MT (Surveys + Cortisol testing + HRV measures); feasibility testing of HRV in HS students
Year 5: Winter 2023	Comparison of F2F vs. remotely-delivered intervention for rural HS students in MT; expand remotely-delivered teacher wellness intervention to multiple schools in same district (Surveys + Cortisol testing + HRV measures for all participants)

Study Design and Frameworks



Theoretical Framework: Community-based participatory research (CBPR) (Israel, et al., 2003; Northway, 2010)

Intervention: Trauma-Informed Yoga

- Yoga and mindfulness can greatly benefit all students, but especially those that have suffered traumatizing experiences (Butzer et al., 2015; Cook-Cottone, 2017; Khalsa et al., 2012).
 - Studies have drawn positive relationships between physical yoga practices and academic gains along with a decrease in cortisol levels in children; middle school students have also improvements in stress, sleep, and academic performance (Butzer, 2015; Butzer, et al., 2015; Butzer, 2017).

Study Design, Cont.

- Sessions for ALL participants were held twice weekly for six weeks
 - Teachers: Each session lasted 45 minutes via Zoom (before or after school)
 - Gardiner Students: 45 minute Zoom sessions during PE
 - Park High Students: 45 minute IN-PERSON sessions during PE
- Intervention sessions were led by two certified trauma-informed yoga instructors, and the program was held during the first 6 weeks of the third academic quarter.
 - This time period was identified by school district administrators as one that is historically difficult for teachers, as negative student behaviors and absenteeism typically rise during this time
- **Our ultimate goal was to determine efficacy of the intervention across different delivery methods (in person vs. Zoom) and demographics (teachers vs. students)**

Combined Student Survey Results (Across Both Districts)

Summary: Overall, significant improvements

- Average depression (PHQ-9) scores were reduced by 3.4 points
- Anxiety (GAD-7) scores were reduced by 2.4 points
- Sleep disturbances (Promis) were reduced by 2.6 points
 - All of the above indicate an improvement
- However, average resilience (CD-RISC) scores reduced by 3 points, indicating a decline.

Student Results by District

Park High School

Survey Measure	Difference Pre/Post
Resilience (CD-RISC)	-2.8 points (Decline)
Depression (PHQ-A)	-2.7 points (Improvement)
Anxiety (GAD-7)	-2.2 points (Improvement)
Sleep Difficulties (PROMIS)	-2.9 points (Improvement)

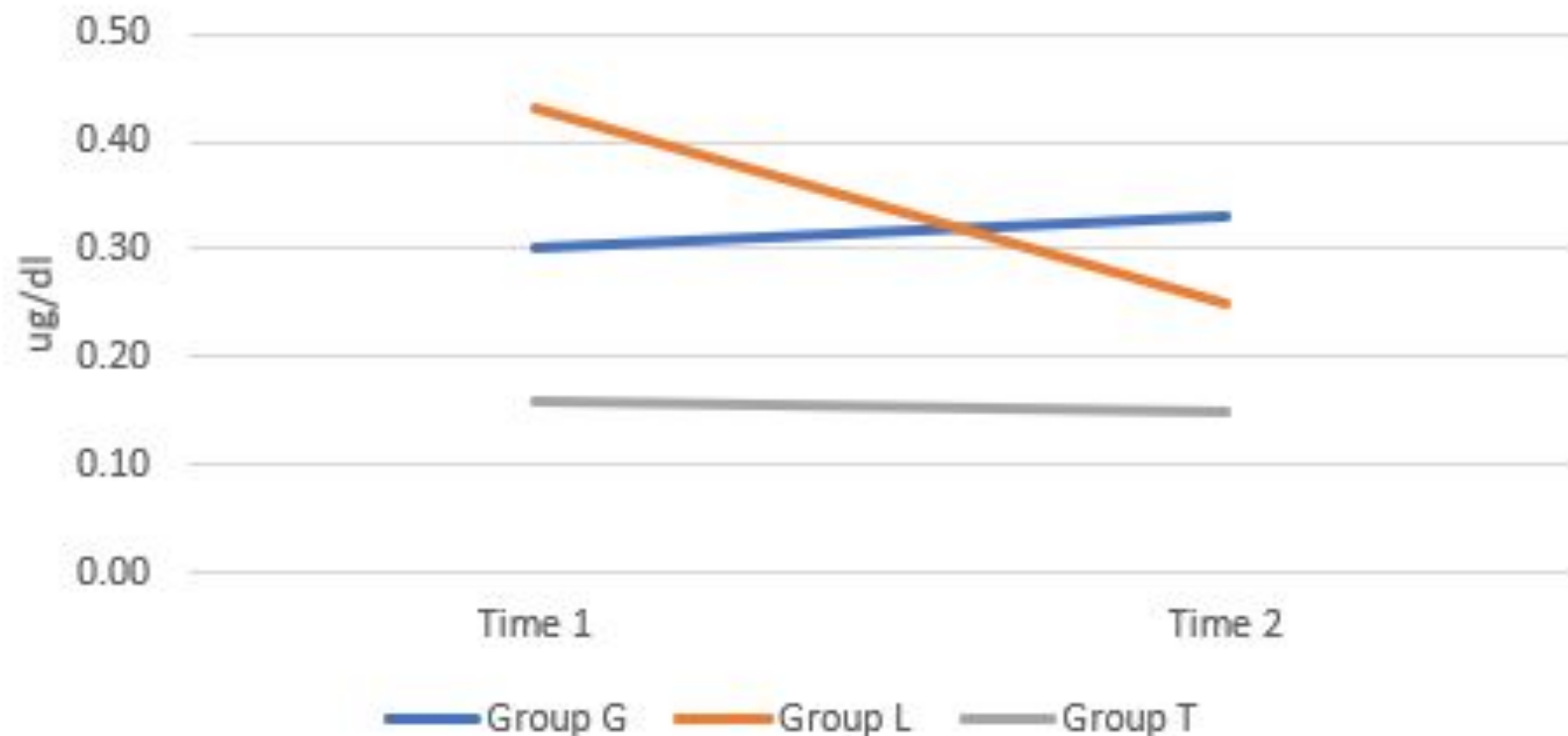
Gardiner

Survey Measure	Difference Pre/Post
Resilience (CD-RISC)	-2.9 points (Decline)
Depression (PHQ-A)	-4.4 points (Improvement)
Anxiety (GAD-7)	-6 points (Improvement)
Sleep Difficulties (PROMIS)	-4.5 points (Improvement)

Student Cortisol Outcomes

- Students who received the **in-person intervention had significantly lower cortisol levels** after the intervention ***as compared to*** students who received the remotely-delivered yoga intervention when controlling for baseline cortisol levels.
- Students who received the in-person intervention had significantly lower cortisol levels after the intervention (within their own experimental group).
- There were no impacts on cortisol levels according to gender or the number of sessions attended.

Mean Cortisol Levels at Pre- and Post-Intervention, by Treatment Group



Student Open-Ended Survey Responses (Samples)

Summary: Mixed Reviews from Students across both Districts

Positive Responses:

- “It lowered my stress a lot and made me feel very relaxed.”
- “It was good to be able to focus on myself and how I was feeling at the time, sometimes life is so busy you don't get a chance to process things and so it gave me time to process.”

Negative Responses:

- Student looked forward to “NOT doing yoga in the future”
- Others noted that the yoga classes made them feel “sore” and “stressed.”

Student Outcomes Summary

- Students who received the in-person yoga sessions had much lower cortisol levels than students who received the remotely-delivered yoga.
- Students who received the remotely-delivered yoga, however, had better mental health outcomes reported on surveys than students who received in-person yoga.
 - Statistical analyses of survey results are pending
- Student open-response post-surveys initially indicate mixed reactions to the yoga classes.
- Heart rate variability data is still pending.
- Analysis of open-ended responses pending.

Teacher Mental Health Outcomes

Summary: Overall, significant improvements

- Average depression (PHQ-9) scores were reduced by 3.1 points
- Anxiety (GAD-7) scores were reduced by 3.2 points
- Trauma symptoms (PCL-5) were reduced by 8.2 points
- Sleep disturbances (Promis) were reduced by 3.3 points
 - These results all indicate an improvement.
- However, average resilience (CD-RISC) scores reduced by 2.9 points.
- Overall, these outcomes mirror student outcomes involved in this year's study.

Teacher Career Satisfaction Outcomes

Tripod Classroom Climate Survey

<u>Pre-Intervention</u>	<u>Post-Intervention</u>
Mean: 4.1	Mean: 4.1
Median: 4.1	Median: 4.2

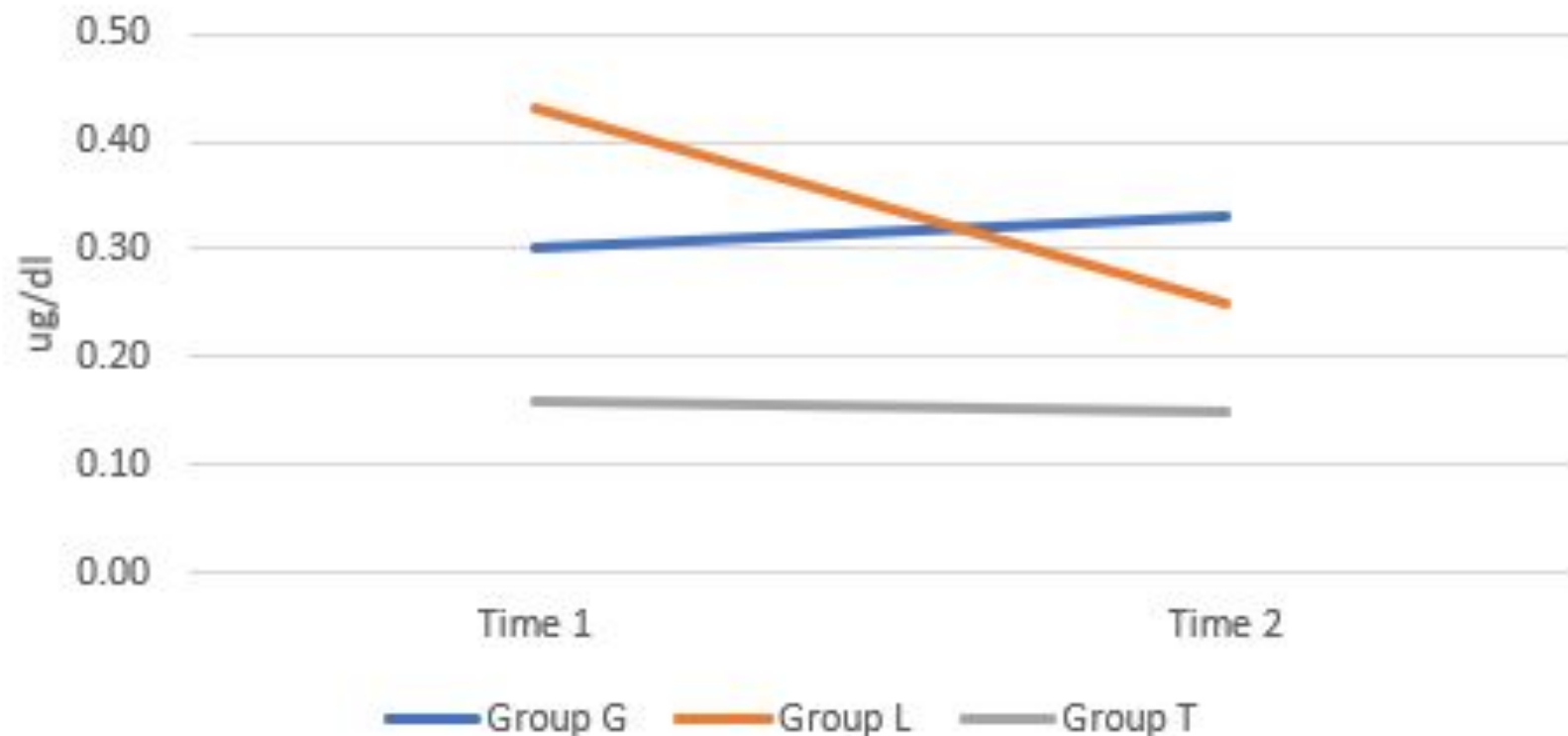
Summary: Teacher career satisfaction measures showed mixed results in several areas.

- For the professional quality of life index (PROQOL), burnout was reduced by 4.3 points
- Compassion fatigue was reduced by 5.2 points
 - However, compassion satisfaction reduced was by 5.1 points, indicating a decline
- On the teachers' sense of self efficacy scales, overall teacher self-efficacy was reduced overall by 11 points, indicating a decline; student engagement reduced by 3.7 points, instruction reduced by 3.4 points, and classroom management was reduced by 3.9 points.

Cortisol Outcomes Across All Groups

- Teachers who received the remotely-delivered yoga intervention had **significantly lower cortisol levels** post-intervention ***compared to*** students who received the remotely-delivered yoga intervention when controlling for baseline cortisol levels.
- No pre vs. post differences were observed in cortisol levels among students and teachers who received the remotely-delivered yoga intervention (within each group, respectively).
- Students who received the **in-person intervention** was the **only** group to have significant cortisol reduction post-intervention.
- No dose-response association was observed between number of yoga sessions attended and post-intervention cortisol levels for any group.
- No effect was observed when comparing pre and post cortisol levels by gender.

Mean Cortisol Levels at Pre- and Post-Intervention, by Treatment Group



Teacher Open-Response Survey Outcomes

Summary: Overwhelmingly positive responses

- “I'm appreciative that someone is attempting to do anything to make life better for a teacher.”
- “I think doing yoga definitely helps me to be more patient at school especially when hard situations arise. I notice that also feel more awake and ready for the day after doing yoga in the morning.”
- “... my general calm mood in response to students' chaos helped me feel calmer and more relaxed. I also found myself teaching my students a lot of the moves that I learned that morning as a brain break.”

Teacher Outcomes Summary

- Mental health measures showed significant improvements post-intervention
- Career satisfaction measures were inconsistent post-intervention
 - Statistical analyses of survey results are pending
- No significant cortisol reductions post-intervention
 - However, when compared with students who had the same intervention, teacher cortisol levels were significantly lower post-intervention
- Open-response surveys were overwhelmingly positive
 - Qualitative analyses pending
- Heart rate variability analyses are pending
- Classroom climate data results showed no significant changes*

In summary...

Mental health and well-being has never been so critical—both for the benefit of educators as well as their students



As the importance of trauma-informed interventions continue to gain momentum, it is important to research and explore options that provide benefits in the educational setting. Specifically, in rural communities, it is vitally important to continue exploring innovative, promising practices to foster student success.

The COVID-19 pandemic has been a collective trauma experienced by everyone; therefore, mental health and well-being must be addressed as students and teachers adapt to our “new normal.”



Questions? Comments? Feedback?

**This study was funded by the
National Institutes of Health
through the Center of
American Indian and Rural
Health Equity at Montana
State University (Award No.
P20GM104417)*

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