IMPLEMENTATION OF A SOCIAL-EMOTIONAL LEARNING CURRICULUM TARGETING PSYCHOLOGY FLEXIBILITY IN HIGH SCHOOL STUDENTS

SAMUEL FAULKNER, MA

JEANNIE GOLDEN, PHD

COURTNEY FOSTER, BA

ANA LEPAGE, MA

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BACKGROUND

ADOLESCENCE

- Challenging life period
- Adolescents encounter a variety of stressors

PREVALENCE & IMPACT OF PSYCHOLOGICAL DISORDERS IN ADOLESCENTS

- 1 in 5 adolescents experience distress due to a mental health condition
- Mental heath disorders are associated with low academic achievement, poor peer relations, and low self-esteem
  - (Greenberg et al., 2001)

YOUTH IN RURAL AREAS CAN BE ESPECIALLY VULNERABLE

- Lack of access to adequate mental health care
  - Longer travel times and distances (Lutfiyya, Bianco, Quinlan, Hall, & Waring, 2012).
  - lack of public transportation
  - Lack of providers in the geographical area (Chan, Hart, & Goodman, 2006).

- Prevention is a crucial part of maximizing outcomes
  - especially due to the limitations associated with treatment availability and access to care (Mendelson & Tandon, 2016).

SCHOOLS AS ENVIRONMENTS FOR PREVENTION

- Evidence some mental health disorders can be prevented

  (Mendelson & Tandon, 2016; Calear & Christensen, 2010),

- Students with positive psychological well-being are more likely to function better in school (Diamond, 2010; Pate et al., 2007).

- Schools are ideal places --all children attend school as part of the natural environment (Meiklejohn et al., 2012).

DEVELOPMENT

GOALS OF THE KATE B. REYNOLDS CHARITABLE TRUST GRANT

- Providing mental health services in Greene County Middle School and the School-Based Health Center at Greene County High School
- Improving the mental health of school-aged youth in the impoverished rural community of Greene County

OVERVIEW OF THE SCHOOL MENTAL HEALTH PARTNERSHIP

EAST CAROLINA UNIVERSITY DEPT. OF PSYCHOLOGY

Health Psychology Doctoral Program

SCHOOL BASED HEALTH CLINIC and MIDDLE SCHOOL

Direct Services to Student (Counseling, Therapy, Behavior Supports)

Healthy

Student

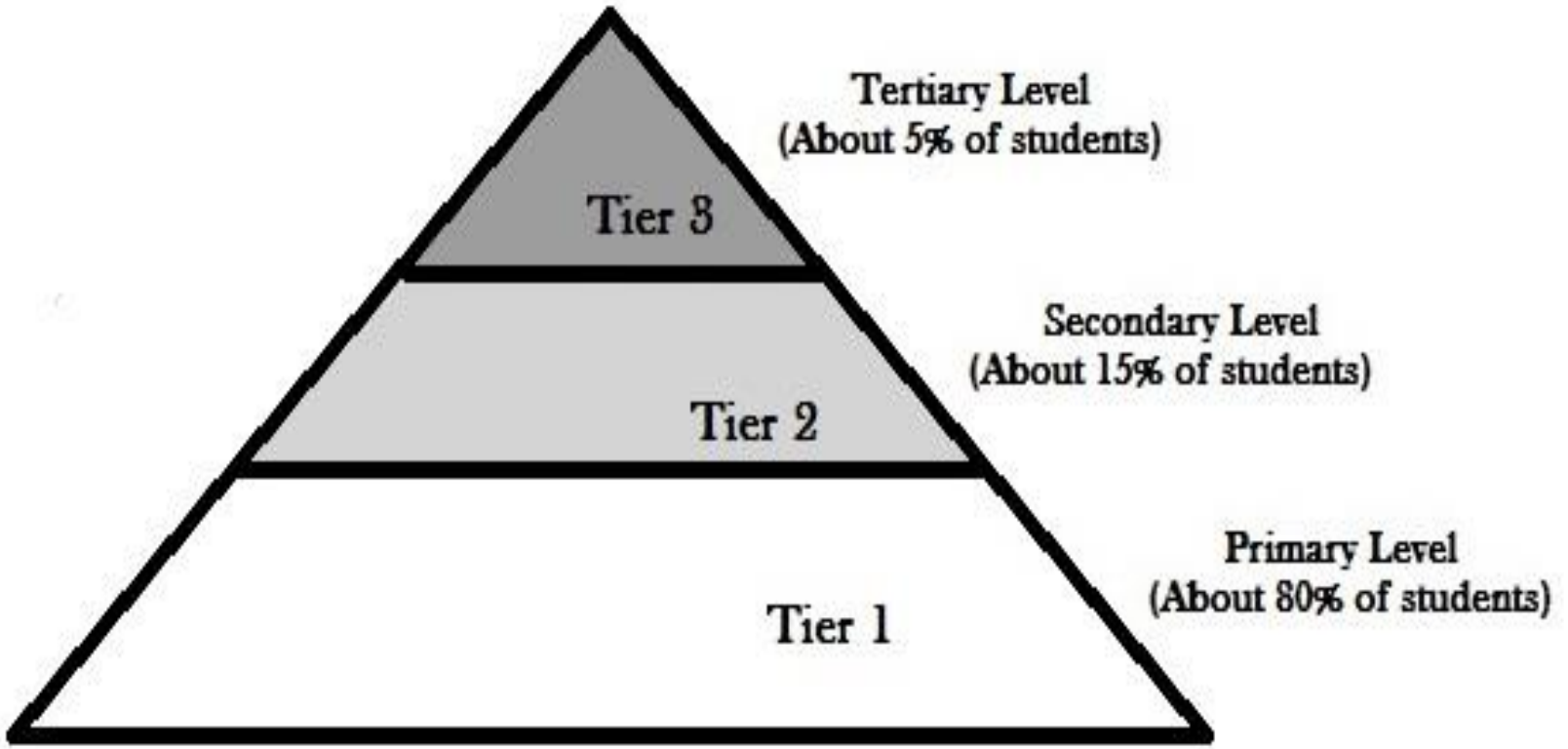
SCHOOL SYSTEM

School Personnel Awareness, Training, Consultation and Collaboration

COMMUNITY

Parent Awareness and Training

THREE-TIERED MODEL OF SERVICES



RELEVANT RESEARCH

- Universal Prevention (Gutman & Schoon, 2015)
  - Efficacy of universal prevention (Wilson & Lipsey, 2007; Teubert & Pinquart, 2011)
  - Gaps in universal prevention
  - Universal prevention and Multi-Tiered Systems of Support (Sugai et al., 2015)
- Social Emotional Learning (SEL; CASEL, 2015)
  - SEL & mental health (Durlak et al., 2011)
  - SEL with adolescents (Waldemar et al., 2016)
  - Limitations of SEL with adolescents
- Psychological Flexibility (Hayes et al., 2006)
  - Psychological flexibility, outcomes, and positive social functioning (Öst, 2014)
  - Acceptance and Commitment Therapy (ACT) with adolescents (Swain et al., 2015)
  - ACT and prevention (Burckhardt et al., 2016)
- The DNA-V model

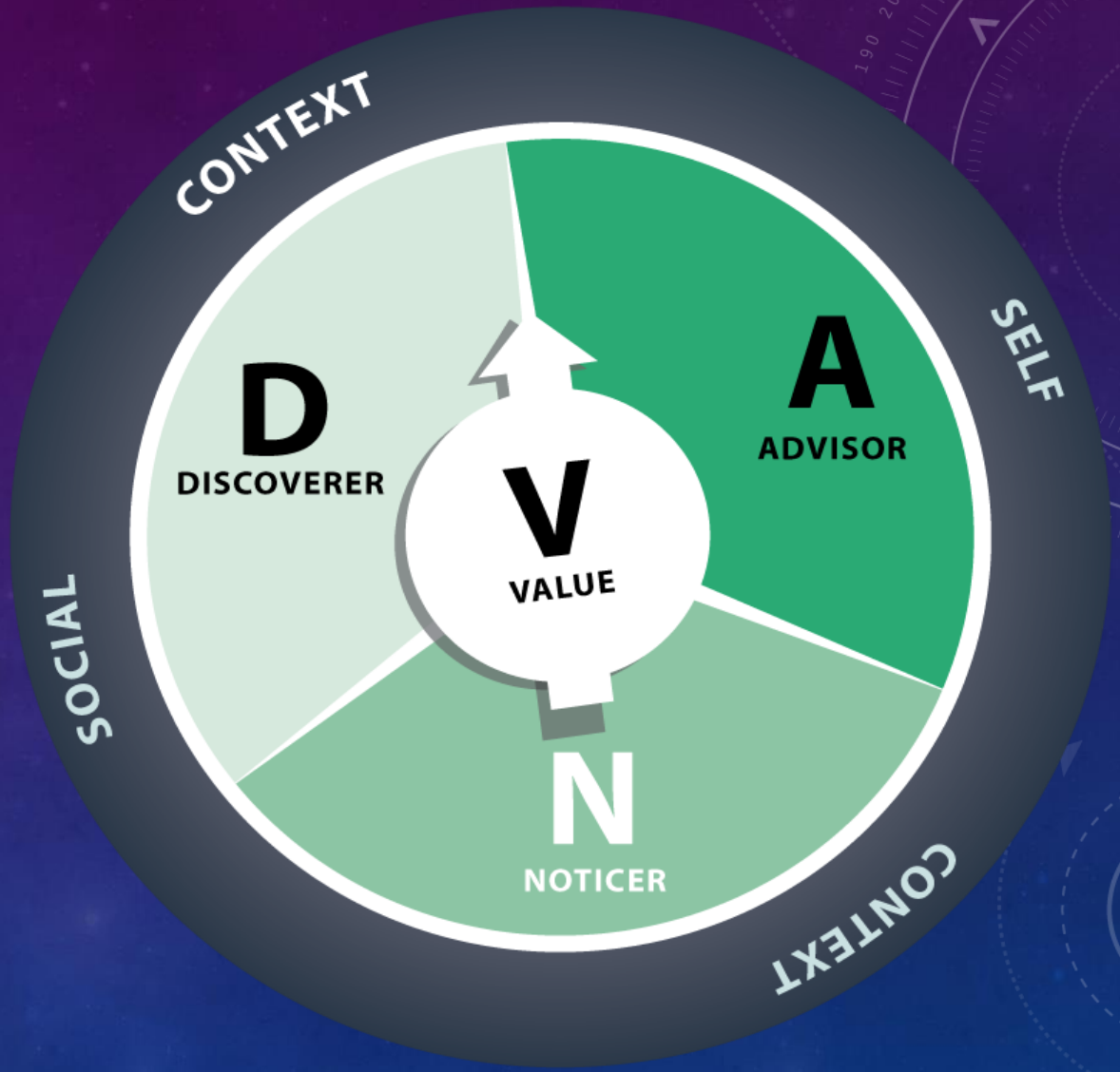
THE DNA-V MODEL

Discoverer: (**TLC**)
- Trial-and-error learning
- Learning through direct experiences
- Connecting with the physical world

Noticer:
- Using 5 senses
- Noticing what's inside the skin

Advisor: (the language machine)
- Judging
- Evaluating
- Generating rules

Values:
- What's most important to us
- Intrinsically reinforcing
- Constantly shifting
- Compass for selecting behaviors



PROGRAM OBJECTIVES

1. *Is this type of programming feasible and/or satisfactory to adolescents and teachers in a school setting?*
2. *Does an ACT-consistent PE curriculum (DNA-V-PE) improve psychological flexibility, sleep, and physical activity in adolescents compared with same-aged peers? Do these changes persist at 1-year follow-up?*
3. *What contextual variables (age, gender, "trait" mindfulness, etc.) are related to impact of programming?*

DNA-V-PE KEY COMPONENTS

- DNA-V introduction
- Psychoeducation regarding sleep
- Psychoeducation regarding physical activity
- DNA-V blended with sleep and physical activity exercises and activities

IMPLEMENTATION

STUDENT CHARACTERISTICS (*N* = 115)

	Overall	DNA-V-PE	Control
Sample	*N* = 115	*N* = 81	*N* = 34
Mean age	15.68	15.8	15.4
Gender	Male: 55.7%	Male: 61.3%	Male: 42.9%
Race/ethnicity	African-American: 49% Hispanic: 27% Caucasian: 22% Native American: 2.6%	African-American: 51% Hispanic: 26% Caucasian: 20% Native American: 2.5%	African-American: 43% Hispanic: 29% Caucasian: 26% Native American: 3%
Free or reduced lunch	100%	100%	100%
School Suspensions	40%	40%	40%
Mean GPA	2.11	2.06	2.23

OVERALL PROGRAM

DNA-V-PE	Yoga
1. 3 weeks sleep with DNA-V 2. 3 weeks physical activity with DNA-V 3. 4 DNA-V-PE Classes 4. Each class broken into 3-5 small groups	1. Yoga (25 minutes) 2. Regular Health/PE program 3. 2 Yoga Classes

- 2 days per week
- Teachers in all classes

SESSION-BY-SESSION BREAKDOWN

DNA-V-PE
1. Introduction to DNA-V-PE & DNA-V Model
2. Introduction to DNA-V-PE & Group Goal Setting
3. Introduction to sleep & Sleep Values
4. Sleep Hygiene & Sleep Advisor
5. Sleep and Mental Health & Sleep Noticer
6. Sleep Solutions & Sleep Discoverer
7. Introduction to PA & PA Values
8. Benefits of PA & PA Advisor
9. Physical Inactivity & PA Noticer
10. Barriers to PA & PA Discoverer
11. PA Solutions & DNA Integration
12. SMART Goals and Termination

DAILY BREAKDOWN

DNA-V-PE	Yoga
1. Yoga (25 minutes) 2. Psychoeducation with sleep or physical activity (20 minutes) 3. DNA-V-PE exercises (30 minutes) 4. SMART goal setting (10 minutes) 5. Access to gym (time-permitting)	1. Yoga (25 minutes) 2. Regular Health/PE program

BEHAVIOR MANAGEMENT SYSTEM (DNA-V-PE ONLY)

- Token economy
  - “Points” awarded contingent on appropriate behavior and participation
  - Points were tallied
- Target behaviors:
  - ”Meaningful” participation
  - Engaging in group related tasks
  - Remaining quiet and engaged while others participate
- Reward system
  - Group with highest point total at end of session awarded Gatorades

SLEEP PSYCHOEDUCATION

Sleep Content
Basic sleep information
Sleep facts
Sleep hygiene
Sleep and mental health
Sleep consequences
Sleep Solutions

PHYSICAL ACTIVITY PSYCHOEDUCATION

Physical Activity Content
Introduction to physical activity
Benefits of physical activity
Physical activity facts
Consequences of physical inactivity
Barriers to physical activity
Physical activity solutions

DNA-V CONTENT

- Education on DNA skills
- Experiential and concrete exercises
- “Experiments”
- Writing assignments
- Group-based experiential and concrete exercises

DAILY BREAKDOWN SAMPLE

Session 3: Introduction to Sleep
Preview session 3 content
Review previous content
Basic Sleep Information
Sleep Facts
How much sleep do you need? (optional video)
Qualities of Values
Values Experiential Exercise
Sleep Consequences
Introduction to SMART goal-setting
SMART goal-setting walkthrough

LOGISTICAL BARRIERS

Barriers	Solutions
Facilitator with little “real” authority in classroom	Teachers intervene with significant disruption
1 teacher left school	Acquired permanent substitute
One class with 30 students	Increase reinforcement delivery
One “facilitator” for all classes	Recruited undergraduate assistant
Disruptive behavior problems in the classroom	Behavior management system
Yoga instructor left	Used video recordings of yoga sessions

PROGRAM-SPECIFIC BARRIERS

Barriers	Solutions
DNA-V Model designed for individual work	Utilized small-group design & customized exercises
DNA-V exercises not specific to content	Designed DNA-V sleep and PA exercises

BARRIERS TO STUDENT ENGAGEMENT

Barriers	Solutions
Student buy-in	Day 1 Goal-setting and Values work Pilot groups
3 of 4 classes were traditional PE	Make time for PE at end of session
Retention of content	ALWAYS review previous content
Generalization	Content-specific SMART goals
SMART goal completion	Tied to Health/PE HW grade
”Glazed-eyes effect”	Introduce psychoeducational content as a question (e.g., *“How much sleep do you think you need?”)* When appropriate, “act a fool.”

EVALUATION

OUTCOME AND PROCESS ASSESSMENT

- **Psychological Inflexibility**: Avoidance and Fusion Questionnaire for Youth-8-item version (AFQ-Y8; Greco et al., 2008)
- ***Sleep hygiene***: Adolescent Sleep Hygiene Scale (ASHS; LeBourgeois et al., 2005).
- ***Physical activity***: Total time engaging in physical activity.
- *"Trait" mindfulness*: Children and Adolescent Mindfulness Measure (CAMM; Greco et al., 2011).
- ***Fidelity***: session-by-session monitoring by teachers and licensed psychologist
- Satisfaction questionnaires

FIDELITY AND GENERALIZATION

- Implementation fidelity: 98%
- 70% of DNA-V-PE participants gained something of lasting value.
- 50% used DNA-V-PE skills at least once per week outside class.
- 10% in Yoga condition used skills outside class (70% reported “Never”).

SATISFACTION (DNA-V-PE)

DNA-V-PE				
How useful was the intervention…?	Not Useful (%)	A Little Useful (%)	Somewhat Useful (%)	Very Useful (%)
Handle Thoughts	8	11	50	31
Handle Feelings	8	21	32	39
Goal Setting	8	21	35	36
Sleep Information	10	22	32	36
Values exercises	3	25	38	35
Advisor exercises	8	17	44	31
Overall	4	13	44	39

SATISFACTION (YOGA)

Yoga Control Group				
How useful was the intervention…?	Not Useful (%)	A Little Useful (%)	Somewhat Useful (%)	Very Useful (%)
Handle Thoughts	25	36	29	11
Handle Feelings	25	39	29	7
Overall	18	39	36	7

SATISFACTION AND ACCEPTABILITY: COMPARING THE GROUPS

- Overall scores were significantly higher for the DNA-V-PE (M = 3.18, SD = .816) than for the control group (M = 2.32, SD = .863), $t(97) = 4.66$, $p < .001$.
- *Handling thoughts* scores were significantly higher for the DNA-V-PE (M = 3.03, SD = .872) than for the control group (M = 2.25, SD = .967), $t(98) = 3.86$, $p < .001$.
- *Handling feelings* scores were significantly higher for the DNA-V-PE (M = 3.01, SD = .971) than for the control group (M = 2.18, SD = .905), $t(98) = 3.93$, $p < .001$.

QUALITATIVE STUDENT FEEDBACK (DNA-V-PE)

- “It helped me **forgive my father**”
- “How to express my feelings and make decisions”
- “It has taught me to set goals short- and long-term”
- “More sleep could change your daily moods”
- “It taught me to not hide my emotions”
- “I learned to just step back and think about stuff”

QUALITATIVE STUDENT FEEDBACK (YOGA)

- “That yoga can relieve stress and relax your muscles”
- “How to relax myself in a little amount of time”
- “How to be calm”

TEACHER FEEDBACK

Teacher Feedback		
How useful was the intervention…?	Teacher 1	Teacher 2
Handle Thoughts	Very	Very
Handle Feelings	Very	Somewhat
Goal Setting	Somewhat	A little
Sleep Information	Somewhat	Very
Values exercises	Somewhat	Somewhat
Advisor exercises	Somewhat	Somewhat
Overall	Very	Very

QUALITATIVE TEACHER FEEDBACK

- Two teachers (T1 and T2)
- Both teachers reported that they felt their students gained something of lasting value as a result of participating in DNA-V-PE program .
  - T2 shared that students “gained the ability to step back and evaluate choices and decisions”
- Both teachers stated that they would recommend the program to others
  - T1: ”This was a good experience for the kids to be exposed to something different during standard health/PE”
  - T2: “Instructors need to be able to be in charge. Great program if done the right way like this one was.”

EFFICACY OF DNA-V-PE

- *Sleep*. Regression analyses indicated that pre-ASHS scores significantly predicted post-ASHS (*b* = .51, *p* < .01) and follow-up ASHS scores (*b* = .44, *p* < .001). Group was not.
- *Psychological inflexibility*. Regression analyses indicated that pre-AFQ-Y8 scores significantly predicted post-AFQ-Y8 (*b* = .59, *p* < .001) and follow-up AFQ-Y8 scores (*b* =.75, *p* <.001). Group was not.
- *Physical activity*. Regression analyses indicate no significant changes from pre-post scores on the physical activity questionnaire. Group membership significantly predicted follow-up scores of physical activity (*b* =.44, *p* <.01) indicating participants in the DNA-V-PE condition spent significantly more time engaging in physical activity at follow-up.

RELEVANT CONTEXTUAL VARIABLES

- ”Trait mindfulness”
- Age
- Gender
- Parental education
- Race/ethnicity
- Living arrangements
- Student suspensions

PSYCHOLOGICAL INFLEXIBILITY, PRE TO POST

- **Age**
  - Significant interaction between age and psychological inflexibility pre-post *($p < .05$).*
    - Younger children more likely to exhibit decreases in psychological inflexibility
- **Gender**
  - Significant interaction between gender and psychological inflexibility pre-post ($p < .01$).
    - Girls more likely to see decreases in psychological inflexibility

PSYCHOLOGICAL INFLEXIBILITY, PRE TO FOLLOW UP

- **Parental Education**
  - Significant interaction between parental education and psychological inflexibility pre-follow up ($p < .05$)
    - There is a greater effect in follow up for kids whose parents have higher levels of education, than those who have lower levels

SLEEP AND PHYSICAL ACTIVITY

- For both of these there were no significant results, meaning that sleep and physical activity did not differ across different moderating variables.
  - Variables analyzed were race/ethnicity, gender, age, parental education, living arrangements, and whether or not a student had been suspended.

DISCUSSION

1. Preliminary feasibility and satisfaction data indicate that the DNA-V model can be reliably and satisfactorily implemented in a school setting as a universal preventive intervention for high school students.
2. Participants in the DNA-V-PE program demonstrated significant gains in total time engaging in physical activity from baseline to follow-up.
3. Changes in sleep and psychological inflexibility in the context of a non-clinical school population provide initial justification for psychological flexibility as a target for SEL curriculum in schools.
4. Relevant contextual variables: Age and Gender

FUTURE DIRECTIONS

1. Reanalyze data using linear mixed effects regression modelling to make better use of the available longitudinal data.
2. Longitudinal mediation modeling will be used to assess whether changes in psychological inflexibility mediate changes in sleep and physical activity outcomes over time.
3. Conduct DNA-V programming targeting *only* mental health concerns in a school-based universal preventive intervention.
4. Expand programming to be implemented by school staff in the context of all freshman Health/PE classes.