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Development of an Evidence-Based Program to Address Burnout and Resilience in Nursing

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Abstract

Problem: Public health nurses at a county health department are experiencing burnout because of the COVID-19 pandemic.

Purpose: The purpose of this program development project was to address burnout in public health nurses during the COVID-19 pandemic through assessment and recommended resilience interventions.

Methods: Two survey tools to measure burnout and resilience were distributed to 70 public health nurses. A literature review using the Wiederman framework for battling burnout and building resilience guided the development of the resilience toolkit.

Intervention: A resilience toolkit consisting of evidence-based interventions, budgets, assessment tools, an example plan, and posters was developed for the organization.

Results: Baseline data collected from 49 of 70 public health nurses revealed high levels of burnout (M=59.1; SD=15.86) and resilience (M=39.3; SD=5.64). Resilience scores were found to be positively correlated to burnout scores (r=.398). Resilience interventions were compiled into a toolkit for the organization to implement on their timeframe.

Conclusions: Organizational assessment and environmental scanning were key to problem and subsequent intervention identification. For this project, program

development formed the basis for future monitoring of nurse burnout and resilience as resiliency activities are implemented to improve workforce health.

Keywords: nursing, COVID-19 pandemic, burnout, resilience

Introduction

Problem Description

On March 13, 2020, a national state of emergency was declared as novel coronavirus (COVID-19) entered the United States. COVID-19 is a respiratory virus that is primarily transmitted person to person through droplets (Centers for Disease Control and Prevention [CDC], 2020).

As a result of the virus, on March 24, 2020, at 12:01am, the state of Michigan issued a stay-at-home order (State of Michigan, 2020) causing approximately 71% (50 of 70) of the nurses employed at a western Michigan health department to begin working from home. Leadership and staff at the organization immediately raised concerns about the potential for nurse burnout and turnover under the influences of the global pandemic.

Months later the cases of COVID-19 throughout the community have started to slow. COVID-19 vaccinations have increased, mask mandates have been adjusted, and nurses who were working in remote locations have slowly reentered the office setting. However, public health nurses working at this western Michigan health department, have yet to slow down. Nurses have been catching up on non-COVID duties in addition to working through pandemic responsibilities. Pandemic responsibilities range from working mass vaccination clinics, following up on positive COVID-19 cases, and covering COVID hotlines. Increased responsibilities for these nurses affirmed earlier concerns by leadership

for reduced productivity, burnout, and eventual turnover.

Recent results from a 2019 study of nursing professionals during the COVID-19 pandemic in the United States validated such concerns. The study found a correlation between nurse stress levels and desire to leave the nursing profession. In the study, 16.25% of the 433 nurses and nurse practitioners surveyed reported moderate risk of leaving nursing and 42.25% reported the desire to leave their current position within 2 years. Additionally, the study found that, regardless of setting (outpatient, inpatient, intensive care, public health, etc.), stress levels for the nurses was relatively similar (Moore et al., 2021). The concern for nurse turnover in the public health setting is both valid and substantiated in the evidence. Of note, the average cost of nurse turnover for an organization in the United States ranges from $37,700 to $58,400 (NSI Nursing Solutions, 2016). The hope of this project was to aid in mitigating that cost. Additionally, even in 2016, burnout was a leading cause of nurse turnover (NSI Nursing Solutions). Clearly, nurse burnout and its effects on the healthcare workforce both financially and otherwise is an important focus of this project.

The Phenomenon of Burnout

Even before the start of the COVID-19 pandemic, nurses were reporting burnout. In a July 2019 survey by The Joint Commission, 15.6% of nurses were reporting burnout (Ross, 2020). Data regarding burnout specifically during the COVID-19 pandemic in the United States is still slowly being collected, but a

February 2020 study in Wuhan, China revealed high levels of burnout in frontline nurses. Of the 2,014 nurses surveyed at two hospitals in Wuhan, about half of the nurses reported moderate to high levels of burnout. Additionally, nurses reported moderate to high levels of anxiety, fear, and depression (Hu et al., 2020).

Schaufeli and Greenglass (2001) define burnout as "a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding" (p. 501). Burnout has also been shown to be associated with increased nurse turnover (Wells-English et al., 2019).

Multiple studies have shown a negative correlation between burnout and resilience (Guo et al., 2017, Zhang et al., 2021). In other words, previous literature supports the concept that nurses who are less burnt out tend to have higher levels of resilience (Guo et al., 2017).

The Phenomenon of Resilience

There are ways to fight against burnout through resilience. "Resilience may be viewed as a measure of stress coping ability and, as such, could be an important target of treatment in anxiety, depression, and stress reactions," (Connor & Davidson, 2003, p. 76). The Wiederman 5-domain framework serves as a guide to help identify interventions for battling burnout and building resilience (see Appendix A). The 5-domains in the framework include mindfulness practices, self-awareness, self-management and lifestyle, purpose and perspective, and interpersonal relationship management. Wiederman also

emphasizes that the approach to building resilience is multimodal and requires utilizing each piece of the framework in varying contexts (Wiederman, 2017).

Specific Aims

To be proactive in addressing leadership concerns regarding nursing workforce burnout and potential decreased productivity or turnover, the organization partnered with a Doctor of Nursing Practice (DNP) student. For this DNP scholarly project, the organization's nurse leader served as a site mentor to the doctoral student.

The aim of the project was twofold: 1. To assess the current state of burnout and resilience in nurses at a public health organization; and, 2. To develop an evidence-based program that provides supportive resources for nurses to navigate burnout and promote resilience during and after the COVID-19 pandemic.

Methods

Literature Review

The type of literature review conducted was a rapid integrative review. The objective of the literature review was to answer two questions: (1) Are there standardized evidence-based tools/frameworks available to assess burnout/resilience and guide planning of interventions for public health nurses during the COVID-19 pandemic? and, (2) What is an evidence-based program that provides supportive tools for nurses to navigate burnout and promote resilience during and after the COVID-19 pandemic?

To answer the first question of the literature review, a search in Health and Psychosocial Instruments (HAPI) revealed two feasible tools for assessment. Due to cost and ease of use, the two tools chosen were the Copenhagen Burnout Inventory (CBI) and the Connor-Davidson Resilience Scale-10 (CD-RISC-10) (Kristensen et al., 2005; Connor & Davidson, 2003). To address the second question of the literature review, a general search was conducted and then each domain (mindfulness, self-awareness, self-management/lifestyle, purpose/perspective, and interpersonal relationship management) of the Wiederman framework, was included in a search through CINAHL. (Wiederman, 2017). Additionally, all searches included the search term of "COVID-19 pandemic" to ensure that current literature was included.

The first search in CINAHL (including keywords: nursing, burnout, resilience, and COVID-19 pandemic) without application of the framework identifiers yielded 3 articles with the following themes: staff debriefing programs to improve resilience and communication, common stress symptoms, and coping strategies to reduce stress/burnout (building a support network, daily routine, meditation, mindfulness) (AHC Media, 2020; Azizoddin et al., 2020).

The remaining searches in CINAHL were based around each of the five domains in the Wiederman framework (Wiederman, 2017). Each subsequent search drew less results as there was some overlap. The literature search including mindfulness yielded 3 articles with the following common themes: creative arts

therapy (music, art, dance/movement, therapeutic movement), mindfulness training for nurses (like compassion, presence, and resilience training (CPR-T)), and positive emotion skills (i.e., gratitude, compassion) (Reed et al., 2020; Cheung et al., 2020; Nissim et al., 2019).

Self-awareness and self-management searches in CINAHL yielded 5 total articles (two and three, respectively) with the following common themes: usage of personality tests to improve self-awareness, authentic leadership, psychological first aid to support resilience, and mental health nurse support through one-on-one and group sessions (Childs-Kean et al., 2020; Larkin & Loughran, 2020). Purpose and perspective yielded one result: usage of a tool (E-PAUSE) to guide discussions between staff and process events (Hylton Rushton et al., 2020).

The final CINAHL search for interpersonal relationship management only resulted in a repeat article and thus was not included. A table containing examples of the evidence-based literature included in the toolkit can be found in Appendix B.

Interventions

The project was an evidence-based program development project to address two clinical questions:

1. What is the current state of burnout and resilience in public health nurses during the COVID-19 pandemic?
2. What is an evidence-based program that provides supportive tools for

nurses to navigate burnout and promote resilience during and after the COVID-19 pandemic?

Burnout and Resilience Assessment

Burnout and resilience in public health nurses (Clinical Question 1) was addressed through electronic survey methodology. This stage of the project involved human subjects and, upon Institutional Review Board examination in consideration of current federal regulations, met eligibility for exempt determination under Exempt Category 2. As research, a consent form detailing the assessment was provided to each survey participant. Two tools, the Copenhagen Burnout Inventory (CBI) and the Connor-Davidson Resilience Scale-10 (CDRISC-10), were issued together in one survey to assess the county health department public health nurses for burnout and resilience (see Appendix C) (Kristensen et al., 2005; Connor & Davidson, 2003).

The CBI was chosen for this project because it was evidence-based (used in similar settings), open access, no cost to use, and concise in that it was comprised of 19 questions (Kristensen et al., 2005). The CDRISC-10 was chosen because it was evidence-based, low cost ($30 total for usage), and concise (10 questions) (Connor & Davidson, 2003). The combined total 29 question survey was uploaded into an online survey platform. The link and an introduction regarding the survey was emailed to the site mentor. The site mentor sent the email to herself while blind copying the employee survey participant population

of nurses. A consent form was distributed to every participant and each person had to confirm reviewing the form before proceeding with the survey. Survey responses were obtained through the online survey platform. The assessments were administered electronically over a period of ten days. The DNP student downloaded the survey results and analyzed the findings. The data was analyzed using descriptive statistical analysis and correlations. No demographic information was collected to adhere to leadership concerns for maintaining respondent anonymity. A total of seventy agency nurses were invited to participate in the survey.

Combating Burnout and Building Resilience

To address Clinical Question 2, a comprehensive literature review was conducted to obtain evidence-based interventions for the toolkit. As mentioned previously, each domain of the Wiederman framework (mindfulness, self-awareness, self-management/lifestyle, purpose/perspective, and interpersonal relationship management), was further queried in CINAHL (Wiederman, 2017). A total of 15 articles were included in the literature review and formed the basis of the toolkit. While themes specific to each domain were included in the literature review section of this manuscript, some common overall themes in the search included: mindfulness training, creative arts therapy, staff debriefs, and mental health support (group and one-on-one) (Cheung et al., 2020; Reed et al., 2020; Azizoddin et al., 2020; Larkin & Loughran, 2020).

Results

Forty-nine out of seventy agency nurses from various positions across the organization responded to the survey resulting in a 70% response rate. No demographic information was collected. Scores from the CBI and CDRISC-10 were collected for each person. The CBI was scored by taking the average score of each answer (Kristensen et al., 2005). The final scores ranged from 0 to 100 with higher scores indicating more burnout (see Appendix D).

The overall average burnout score for the 49 nurses in this study was 59.1. The average score for nurses in a pilot study utilizing the CBI was 36.9 (Kristensen et al., 2005). The CDRISC-10 contained questions that were answered on a Likert 5-point scale from 0 to 4. The test was scored by adding up the total of each response. The average CDRISC-10 score for the nurses in this study was 39.3. A 2018 study found an average CDRISC-10 resilience score of 30.7 among 521 nurses in the United States (Brown, 2018). Previous literature suggested that burnout was negatively correlated with resilience (meaning those with the highest resilience were less burnt out) (Guo et al., 2017). However, the survey data of this population revealed a positive correlation between burnout and resilience (r=.398) (see Appendix D). A line of best fit showing the correlation can also be found in Appendix D.

The finalized evidence-based resilience toolkit consisted of: evidence-based interventions for building resilience, pricing for each recommendation,

assessment tools for burnout/resilience, an example plan for a specific recommendation, and posters with educational tips (see Appendix E). The toolkit was intended for leadership at the organization and nurses in the organization. An electronic version of this 14 page toolkit was given to the organization for easy accessibility and distribution.

The toolkit considered existing information revealed after conducting an environmental scan exploring organizational strengths and weaknesses within the organization to fight burnout and build resilience as well as external opportunities and threats. For example, key opportunities to incorporate into the toolkit included the use of nearby parks for outdoor activities, nearby gyms/recreation centers, and access to existing mental health support systems. Therefore, some of the specific recommendations in the toolkit are local to the organization but the themes would still be relevant to a wider audience of nursing leadership and policymakers. The toolkit begins with an overall introduction to the Wiederman model. The toolkit then contains explanations of each piece of the Wiederman model followed by interventions that fall under that category. There are a total of nine evidence-based interventions included in the toolkit (see Appendix B for each specific intervention).

Discussion

Implications Regarding Survey Data

The burnout/resilience assessment portion of this program development

project provided the county health department with helpful baseline information and insight into how public health nurses working in the United States were affected by the COVID-19 pandemic. The public health nurses in this study reported high levels of burnout as well as high levels of resilience. (see Appendix D). Traditionally, burnout and resilience show a negative correlation. For example, a 2018 meta-analysis of 227 studies of nurses in various countries (including the United States) found a negative correlation of r= -0.57 between burnout and resilience (Deldar et al., 2018). In addition, recently published studies like that of pediatric nurses in the pandemic out of New Zealand yielded a negative correlation (Guo, 2017; Zhang et al., 2021).

In light of a pandemic, a lower resilience score would be expected (Guo et al., 2017). Yet, the public health nurses in this study reported an average resilience score from the CDRISC-10 of 39.3. The CDRISC-10 has a maximum score of 40 so the average score was quite high (Connor & Davidson, 2003). Furthermore, when considering their average burnout score against their average resilience score, there was a positive correlation (r=.398).

A few factors may have influenced this uncommon correlation between burnout and resilience. Firstly, the survey in this study was self-reported, and nurses may have responded in a way they felt was expected of them instead of how they were truly feeling. Secondly, the burnout and resilience assessment findings were from a very specific snapshot of time and nearly a year after the

start of the COVID-19 pandemic in the United States. The nurses at the organization had to work though many different phases of the pandemic with shifting responsibilities, mass vaccination clinics, and often longer workdays to accommodate these new responsibilities. Establishing a baseline prior to and earlier in the pandemic, as well as farther in the future would help to trend the status of their nurse workforce.

Finally, the burnout tool utilized in this study is not consistently used in literature. Many of the studies that show a negative - correlation between burnout and resilience utilize the Maslach Burnout Inventory (MBI) (Guo et al., 2017; Zhang et al., 2021). The correlation between burnout and resilience among nurses, especially in the context of the United States COVID-19 pandemic, requires further study.

Implications for Program Development

Program development relies heavily on stakeholder buy-in through adoption of the recommended interventions. For this program development project, key stakeholders include the nursing staff that will be equipped with tools to navigate burnout and resilience; the organizations' leadership as a means to address their concerns for staff burnout through a healthy workforce; and the surrounding community that receives the services of the county health department. In other words, the county health department benefits from a fully functioning staff that can provide healthcare services that benefit the community

through services like immunizations, disease follow-up, and STD treatment.

In addition to stakeholder engagement, strategies to encourage use and sustainability of the resilience toolkit include flexible implementation features where the nurse or organization can select interventions offered through a menu of ideas that encourages engagement according to preference and feasibility. Additionally, the toolkit allows for a multimodal approach to resilience as utilizing multiple pieces of information may further improve workforce health.

Organizational champions to steward the program and implementation of the toolkit will also be critical in ensuring sustainability. For example, a contact at the organization has expressed intentions to implement toolkit interventions and to repeat the burnout/resilience assessment in fall of 2021.

The toolkit developed specifically for this project includes options of evidence-based resilience building interventions that are geographically specific to the organization. However, the themes under the five domains are still relevant to a wider audience and could be adopted to other settings or geographic locations. This adaptability to consider unique features of an organization or its surrounding environment promotes sustainability of the program itself. In the adaption, a more expansive toolkit of burnout/resilience resources may be helpful for larger organizations, limited resource organizations, multi-disciplinary healthcare teams, or staff outside of healthcare.

In developing a relevant evidence-based toolkit during a global pandemic,

the literature review that was conducted was done so under the umbrella term of 'COVID-19.' In the future, an expanded toolkit may include more evidence-based interventions that further consider activities outside of the pandemic environment. However, the toolkit created in this program development project is an evidence-based program of supportive tools to navigate burnout and build resilience for nurses during and after the COVID-19 pandemic.

Limitations

A limitation of this study may be the singular focus on only one public health organization, especially when considering the positive correlation between burnout and resilience among the public health nurses. Furthermore, the project was specific to public health nurses. An expanded approach inclusive of nurses from other specialties or other healthcare professionals in another context during the COVID-19 pandemic would provide comparative perspective and possibly different insights. In addition, the pandemic itself caused challenges with meeting stakeholders and assessing the organization in person due to stay-at-home orders and social distancing requirements. Finally, the toolkit itself has some geographically local recommendations that may not be relevant in every context.

Ethical Considerations

There were some important ethical considerations when completing this program development project. Firstly, IRB determination was completed to ensure appropriate handling of human subjects. For example, in the introduction

to the survey, participants were notified that their participation was voluntary, that no demographic information was to be collected, and that all responses were anonymous.

Secondly, buy-in from the nursing director and her distribution of the survey link helped to ensure trust with nursing staff.

Conclusions

The COVID-19 pandemic was unexpected and the effects it had on the United States healthcare system may continue for years to come. Concerns by nursing leadership over their nurses becoming burnt-out under demands of a global pandemic led to a program development project that encompassed obtaining a baseline assessment of burnout and resiliency among its public health nurses as well as the formation of an evidence-based resilience toolkit. Traditionally, burnout and resilience. show a negative correlation but findings in this project yielded a positive correlation. The positive correlation coefficient (r=.398) from this study implies that the nurses with the higher levels of burnout tended to have resulting high levels of resilience. It could be hypothesized that the nurses in this study had to quickly build resilience in response to the overwhelming pandemic environment. Assessment of burnout/resilience was a critical part in providing a relevant toolkit of interventions.

The toolkit provided the organization with the means to navigate burnout and continue to build resilience in practical ways. The toolkit consists of

evidence-based interventions for building resilience, pricing for each recommendation, assessment tools for burnout/resilience, example plans for specific recommendation, and posters with educational tips.

The importance of a multimodal approach to fight burnout and build resilience is critical to ensuring a productive, healthy workforce now and in the future.

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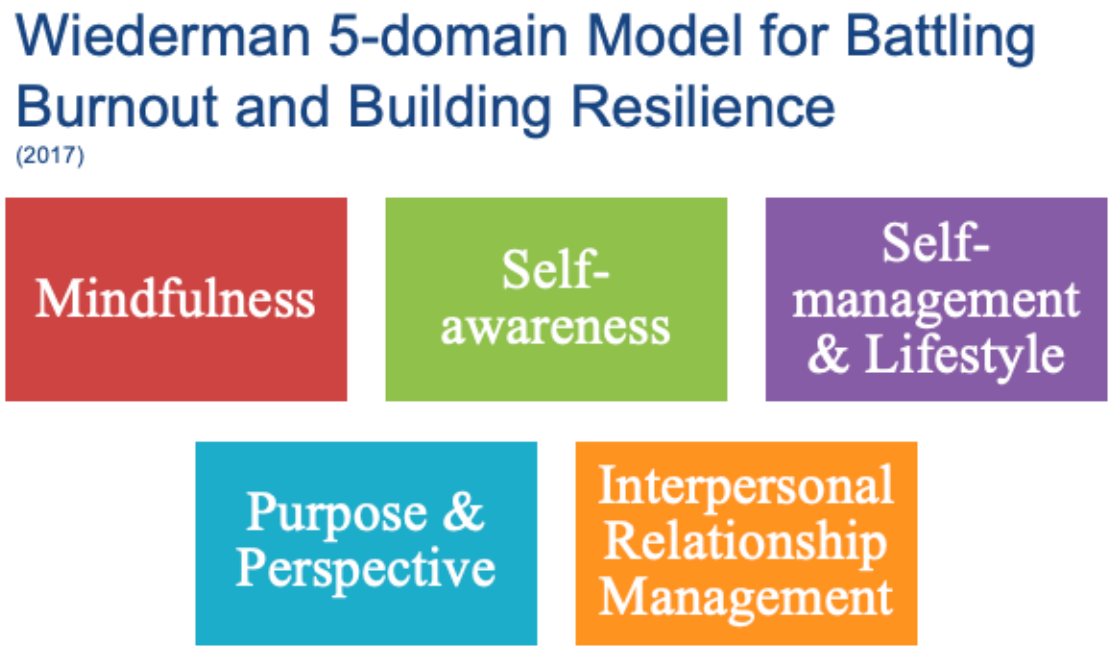
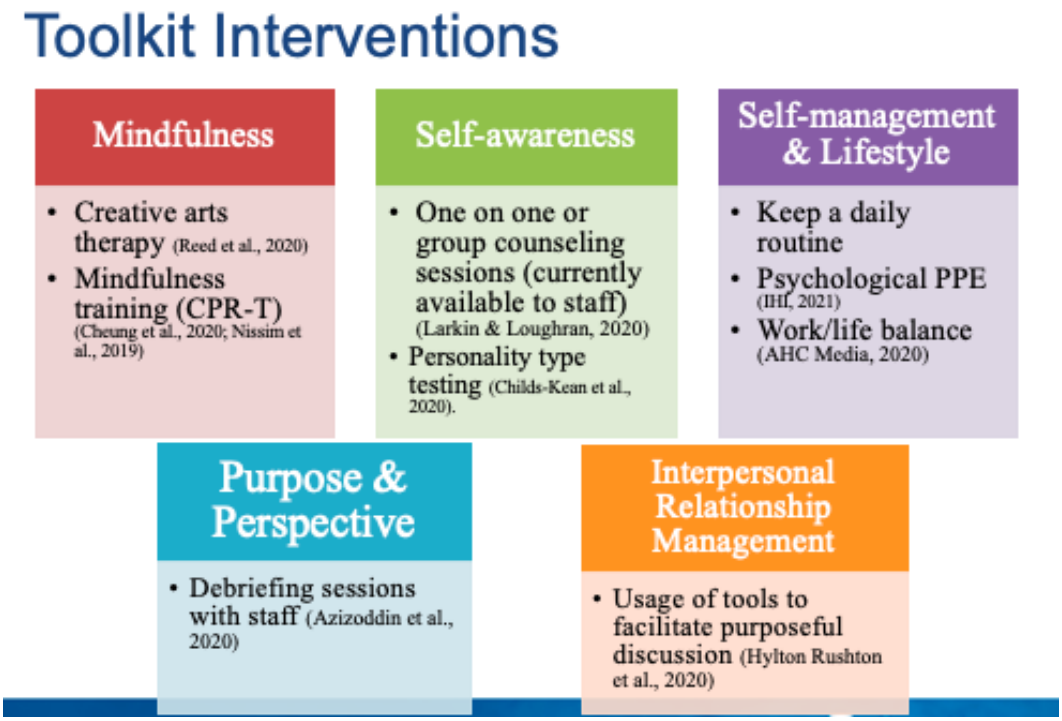
Appendix A



Adapted from "Battling burnout and building resilience: A framework," Wiederman, 2017, *Greenville Health System Proceedings.*

Appendix B



Note. Specific content included in toolkit based on the Wiederman framework.

Appendix C

Tool Details	Copenhagen Burnout Inventory	Connor-Davidson Resilience Scale-10
Number of Questions	19	10
Content	3 categories of questions: - Personal Burnout - Work-related Burnout - Client-related Burnout	Questions regarding self-efficacy, flexibility, ability to regulate emotions, cognitive focus/maintaining attention under stress, optimism
Question format	2 question response types: - Always (100), Often (75), Sometimes (50), Seldom (25), Never/Almost never (0) - To a very high degree, to a high degree, somewhat, to a low degree,	- 5 point scale from 0-4 - 0 meaning not true at all and 4 meaning true nearly all the time
Scoring	- Total score is the average of the scores of the items - One question has reversed responses	- Add up all 10 items - Scores will range from 0 to 40 - Higher scores = higher levels of resilience

Note. Assessment tool details for the CBI and CD-RISC-10.

Appendix D

Resilience and Burnout Score Statistics

Simple Statistics

Variable	*N*	*Mean*	*Std Dev*	*Sum*	*Minimum*	*Maximum*
ResilienceScore	49	39.32653	5.64354	1927	28.00000	50.00000
BurnOutScore	49	59.08670	15.86221	2895	11.84211	84.21053

Figure C1. Simple statistics from resilience and burnout scores.

Pearson Correlation Coefficients, N = 49
Prob > |r| under H0: Rho=0

	ResilienceScore	*BurnOutScore*
ResilienceScore	1.00000	0.39827 0.0046
BurnOutScore	0.39827 0.0046	1.00000

Figure C2. Correlation coefficients from resilience and burnout scores.

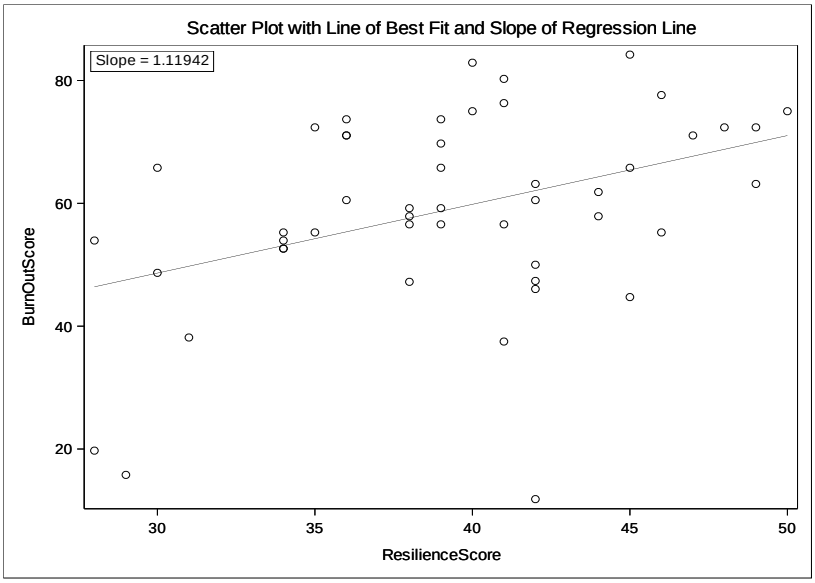


Figure C3. Line of best fit plotting resilience and burnout scores.

Appendix E

Toolkit Page: Planning an Intervention

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Example

PLANNING AN INTERVENTION

Cultivating Mindfulness Online Course

American Nurses Association

- 2 CE credits available as incentive
- can be completed on the person's own time, at their own pace
  - helpful to offer the class during working hours to increase uptake

Introductory e-mail example:

Mindfulness Training

Hello,

Our organization will be hosting an online mindfulness training through the American Nurses Association entitled "Cultivating Mindfulness." Research has shown that mindfulness is a factor in increasing resilience. Resilience has been shown to help decrease burnout.

The training will be offered at [time during work hours & date] for no cost to you. The training also offers 2 CE's. A link will be sent to you on the day of the training to access the online modules.

This is a great opportunity!

[your signature]

Budget:

- $20 per person (if ANA members)
  - Per customerservice@ana.org for bulk orders:
    - 10% off for 10-20 seats
    - 12% off for 21-34
    - 15% off for 35+
- surveymonkey (free)

1. I understand mindfulness and how to apply it to my life.

Strongly agree
Agree
Neither agree nor disagree
Disagree
Strongly disagree

2. I found this module helpful and would like to participate in something similar in the future.

Strongly agree
Agree
Neither agree nor disagree
Disagree
Strongly disagree

What are some mindfulness techniques you will use in the future?

Evaluation of the intervention

Post-survey example: