

COVID-19 & Pediatric Mental Health: A Provider Update

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NURS 703: DNP Project

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Abstract

Background: The COVID-19 pandemic is an evolving health crisis that has greatly impact the ability of healthcare workers to meet the needs of patients. It exacerbated existing mental health challenges and created new ones for children & their families, particularly those who have been systemically underserved. This epidemic also contributed to healthcare worker burnout. Providing support, information, and resources to healthcare providers can potentially help improve service delivery and mental health outcomes. *Aim:* The aim of this project is to increase provider knowledge of the impact of COVID-19 on pediatric mental health and to increase awareness of and comfort level with approaches and interventions that may help to mitigate negative sequelae in pediatric patients. *Methods:* An online learning module was used to achieve these aims. *Results:* Pre-test to post-test survey results confirmed that provider knowledge on the topic of pediatric mental health during the pandemic was improved. *Conclusion:* Rapid development of educational material and dissemination of resources is an effective way to increase provider knowledge and comfort in an evolving situation such as a pandemic.

Keywords: COVID-19, COVID, pandemic, pediatric, mental health

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Problem Description

A novel coronavirus, SARS-CoV-2, was discovered after a cluster of patients with pneumonia was linked to a food market in Wuhan, China in December of 2019 (Zhu et al., 2019). This new illness, now known as COVID-19, quickly caused a global pandemic. As of April 4th, 2021, the total number of cases of COVID-19 in the United States was 30,492,334 (a rate of 9,185 per 100,000 people; Centers for Disease Control [CDC], 2021). Of those, 166,480 were in the state of Oregon (3,947 per 100,00; CDC, 2021) with 10,838 cases in Lane County (Oregon Health Authority [OHA], 2021).

The pandemic created unprecedented situations for children in which school, social interactions, and family life were radically altered or shut down causing multiple stressors (Singh et al., 2020; Meherali et al., 2021). The psychological toll on children is still being accounted for as research continues to accumulate. Before the pandemic, 7.1% of children aged 3-17 years were diagnosed with anxiety and 3.2% had diagnosed depression (CDC, 2021). The COVID-19 pandemic may have worsened pediatric mental health and increased related needs (Marques de Miranda et al., 2020).

For many children, their primary care provider (PCP) is the first point of contact with the healthcare system. For this reason, advanced practice nurses (APN) providing primary care need to be informed about the pandemic's mental health consequences and recommendations to address them as this knowledge is made available. The evolving nature of the pandemic made this difficult, especially when healthcare resources were already stretched thin (. Gathering and disseminating information to providers as quickly as possibly could have potentially assisted providers in mitigating pandemic-related adverse health outcomes.

Available Knowledge

High rates of PTSD, anxiety, and depression were reported among children during the pandemic (Fegert et al., 2020; Marques de Miranda et al., 2020; Singh et al., 2020). This was especially true for systemically underserved children (Marques de Miranda et al., 2020).

Children living in poverty are disproportionately affected by mental health issues and have the lowest rates of engagement with mental health care (Hodgkinson et al., 2017). Fewer than 15% receive services and even fewer remain engaged long enough to complete treatment (Hodgkinson et al., 2017). Strategizing how to meet children's mental health needs was critical to improving long-term health outcomes for those children, their families, and their communities (Singh et al., 2020).

PCPs are well-positioned to intervene early. The American Academy of Pediatrics (AAP) acknowledged the need for primary providers of pediatric care to identify and initiate care for children with mental health problems (AAP, 2021). However, PCPs are not as comfortable providing direct interventions and psychoeducation as they are assessing and referring (Bettencourt et al., 2021). A 2019 policy statement from the AAP, "Mental Health Competencies for Pediatric Practice" recommended providers pursue quality improvement activities and educational strategies that develop their mental health practice.

As the epidemic of childhood mental illness grew, innovative ideas and collaboration were required to advance training in behavioral/mental health and ultimately improve care for children (McMillen et al., 2020). A recent poll showed that 74% of psychologists reported seeing more patients for anxiety after vs. before the pandemic (American Psychological Association [APA], 2020). 60% reported seeing more depressive disorders and 51% reported seeing more trauma-and stress-related disorders (APA, 2021). The provider shortage was especially

pronounced in non-metropolitan areas even before the pandemic (Andrilla et al., 2018). As of 2022, 143 million people live in a mental health professional shortage area (HPSA; Health Resources & Services Administration [HRSA], 2022).

Rationale

The framework for this project was based on key assumptions and principles from the Substance Abuse and Mental Health Services Administration's (SAMHSA) trauma-informed approach (SAMHSA, 2014). The four key assumptions in a trauma-informed approach were realization, recognize, respond, and resist re-traumatization (SAMHSA, 2014). This approach is similar to the model for trauma-informed education and administration (M-TIEA) suggested by Harper & Neubauer (2021).

Specific Aims

The primary aim of this project was to increase provider knowledge of the impact of COVID-19 on pediatric mental health. A secondary aim was to increase awareness of and comfort level with approaches and interventions that may have helped to mitigate negative sequelae in pediatric patients including increasing provider knowledge of local and online resources for patients and providers.

Methods

Context

This intervention took place in the setting of a community FQHC during a global pandemic. FQHC clinics are part of a safety net system that provides care primarily for patients with public health insurance. In 2019, 41.4% of children under 18 years of age were on public insurance (CDC, 2021). Children on public insurance are more likely to be exposed to adverse childhood experiences (ACEs) which are traumatic events that put them at risk of poor health

outcomes (Crouch et al., 2019). The Delta Oaks Clinic is one of the Community Health Centers (CHC) located in Eugene, OR. Together the CHC served just under 30,000 patients in 2018, including both adults and children (CHC, n.d.). Delta Oaks had eight providers including nurse practitioners and physicians, and one full-time behavioral health consultant.

About 25% of primary care nurse practitioners identify as burnt-out (Abraham et al., 2021), similar to the 24.5% prevalence of burnout in board-certified family physicians (Puffer et al., 2017). Primary care providers, nurses, and staff working with traumatized populations may experience even greater burnout and vicarious trauma. The COVID-19 pandemic contributed greatly to this burnout (Sung et al., 2021) and was heavily considered in this intervention in the interest of aligning with trauma-informed care.

Interventions

Initially, the project was conceptualized as an in-person training of healthcare providers. Due to many limiting factors, an online module was created and disseminated instead (Appendix A). The content of the module was tailored to the health system and the population it served. Local resources were included. A formal needs assessment was felt to be less necessary in a novel circumstance such as a pandemic and could have become a barrier to the timely completion of this project. A letter of support was received from the implementation site (Appendix B).

The training module was emailed to all staff, providing a wider range of recipients and included all providers, nurses, medical assistants, and office staff in all Lane County Health and Human Services sites, approximately 150 employees. The intervention began on 2/14/22. Participants were able to complete the online module within one week of receiving the links. The first data analysis occurred on 2/22/22.

A project timeline can be found in Appendix C. Participants were able to complete the online module on their own time in the setting of their choosing. This flexibility allowed for the intervention to be executed without contributing to on-site workload burden and burnout. The training itself was trauma informed and in line with trauma-informed theory (Harper & Neubauer, 2021). A pre-intervention/post-intervention format was used to assess perceived knowledge and comfort levels (Appendix D). As an incentive for participation, a \$5 donation to a local organization that worked with pediatric mental health was donated for each pair (pre/post) of surveys returned. This was both an indirect incentive for data collection purposes and a gesture of real-life support to local organizations who may be struggling to keep up with the increased demands placed on them by the pandemic.

Study of the Interventions

These indices were measured on a Likert scale before the intervention and immediately following the intervention. To understand the impact of the intervention, questions related to how burdensome it felt and the amount of time it took for the participant to complete the intervention were included.

Measures

The primary outcome measures for this project were perceived increases in provider knowledge of 1) the impact of the COVID-19 pandemic on pediatric mental health, 2) of relevant trauma-informed care approaches and interventions, and 3) mental health resources available. Comfort level with engaging these patients and resources was also assessed. The main process measures were provider time and number of completed surveys. Balancing measures included self-reported burden on providers. Burden was considered to be either emotional or time. These

were measured via a post-intervention survey which was collected and analyzed by the project lead.

Analysis

Data was collected before and immediately following the intervention. A combination of quantitative and qualitative approaches were used to analyze data. The questionnaire contained both rating scale elements and free text boxes for feedback. Data were analyzed by the project lead by comparing percent change in responses before and after the intervention. Feedback was collected and may be used to modify the design for future iterations of this intervention.

This intervention did not increase clinic cost and, in fact, may improve the clinical environment for children and families affected by the COVID-19 pandemic. Deepening providers' understanding of mental health effects in the pediatric patients may improve their quality of care, engagement, and access to services, thus increasing revenue for the clinic.

Ethical Considerations

There were no conflicts of interest to report. The name of the organization to which the \$5 donation was given was not made known to participants. This information was withheld in case participants also worked, volunteered, were on the board of, or were involved financially in any way with the organization. Participation was voluntary and uncoerced. One potential area of concern was the possibility of triggering participants by presenting information that may be upsetting. A disclaimer was provided on the second slide of the online training module. Participants were made aware of appropriate resources including employee assistance programs (EAP) and local mental health resources. An optional debrief participants could self-select for with the project lead was offered and email contact information was provided. This

project was submitted to the OHSU Institutional Review Board and deemed to not be human research and therefore IRB approval was not required (Appendix E).

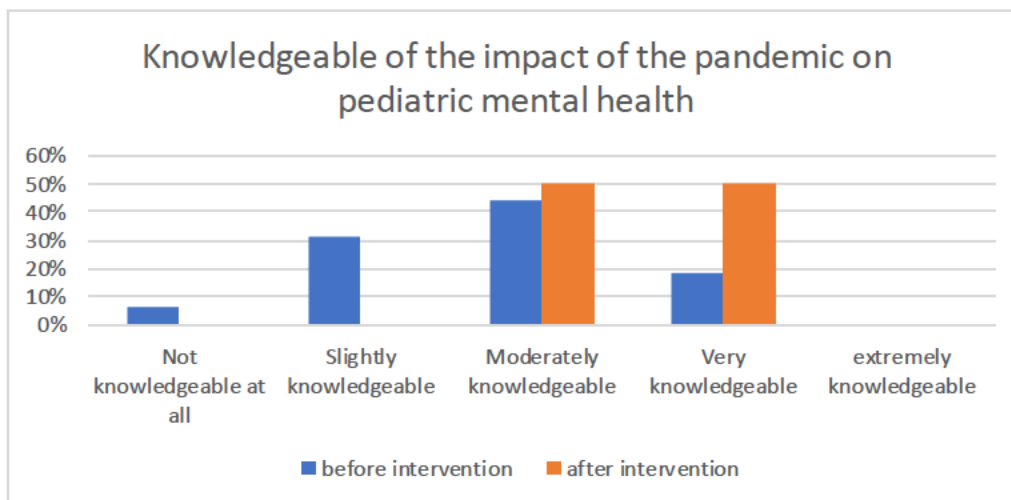
Results

Sixteen pre-intervention surveys were completed, and four post-intervention surveys were completed. All of the responses collected were received in the first three days of the one-week time period given.

Before the intervention, 6.25% of participants rated themselves as “not knowledgeable at all,” 31% as “slightly knowledgeable,” 44% as “moderately knowledgeable,” and 19% as “very knowledgeable” about the impact of the pandemic on pediatric mental health. These numbers increased to 50% for “moderately” and “very knowledgeable” representing a 6% and 31% increase respectively. No one self-rated as “not knowledgeable at all” or “only slightly knowledgeable” after the intervention (figure 1).

Figure 1

Percent of participants: Knowledge of pandemic impact

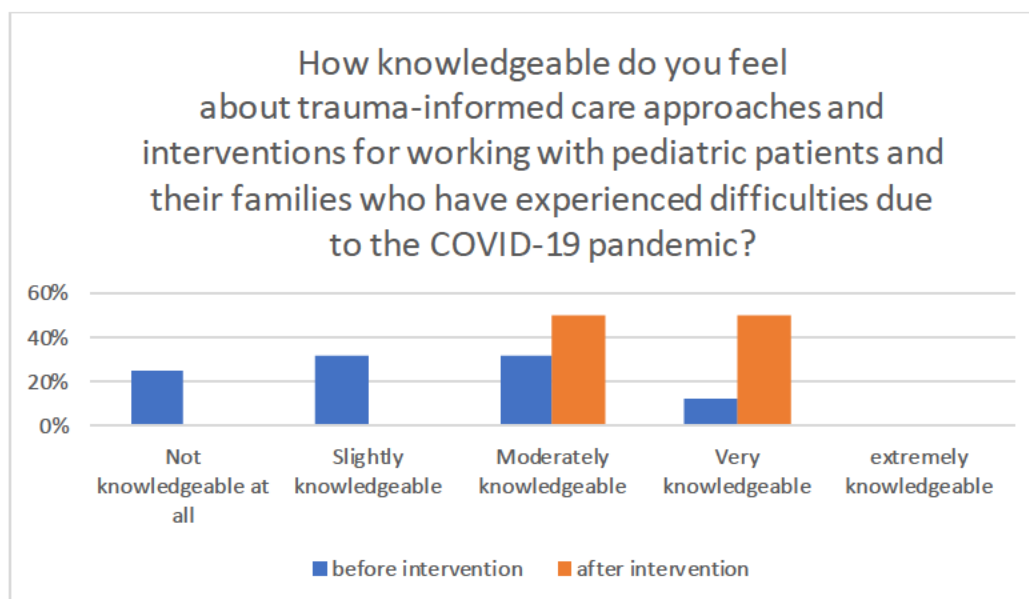


Question 2 on the survey was, “How knowledgeable do you feel about trauma-informed care approaches and interventions for working with pediatric patients and their families who

have experienced difficulties due to the COVID-19 pandemic?” The pre-intervention survey revealed 25% of participants reported no knowledge at all, 31% reported feeling “slightly knowledgeable” or “moderately knowledgeable.” After the intervention, no one self-identified as “not knowledgeable at all.” “Slightly knowledgeable” and “moderately knowledgeable” ratings increased by 19% after the intervention (figure 2).

Figure 2

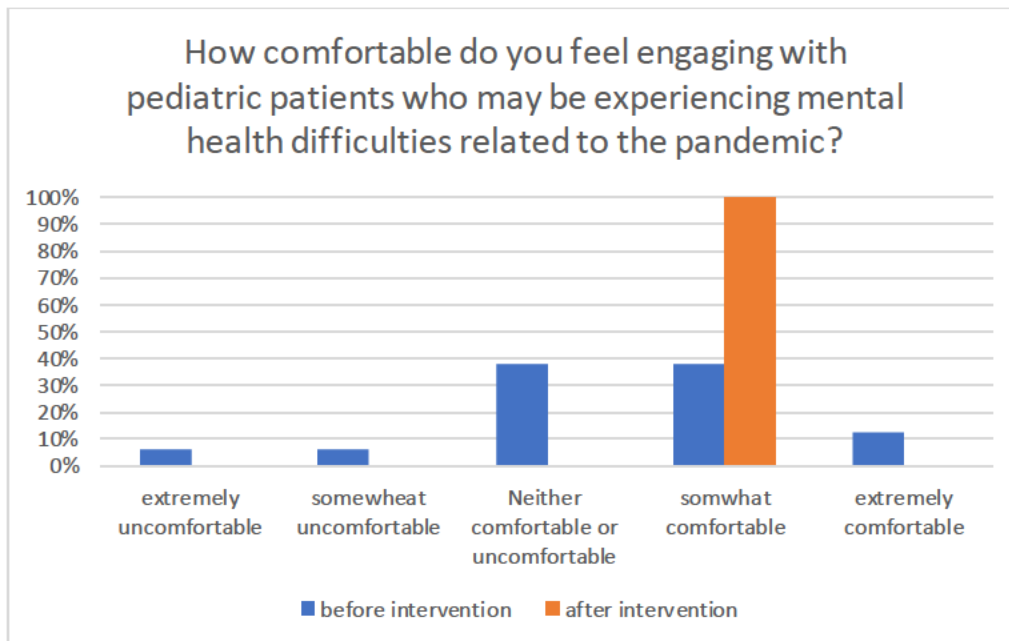
Percent of participants: Knowledge of trauma-informed care



Question 3 was, “how comfortable do you feel engaging with pediatric patients who may be experiencing mental health difficulties related to the pandemic?” Before the intervention, 12.5% selected “extremely uncomfortable” or “somewhat uncomfortable,” 37.5% selected “neither comfortable or uncomfortable,” and 37.5% were “somewhat comfortable.” 12.5% of participants were “extremely comfortable.” After the intervention, 100% selected “somewhat comfortable” (figure 3).

Figure 3

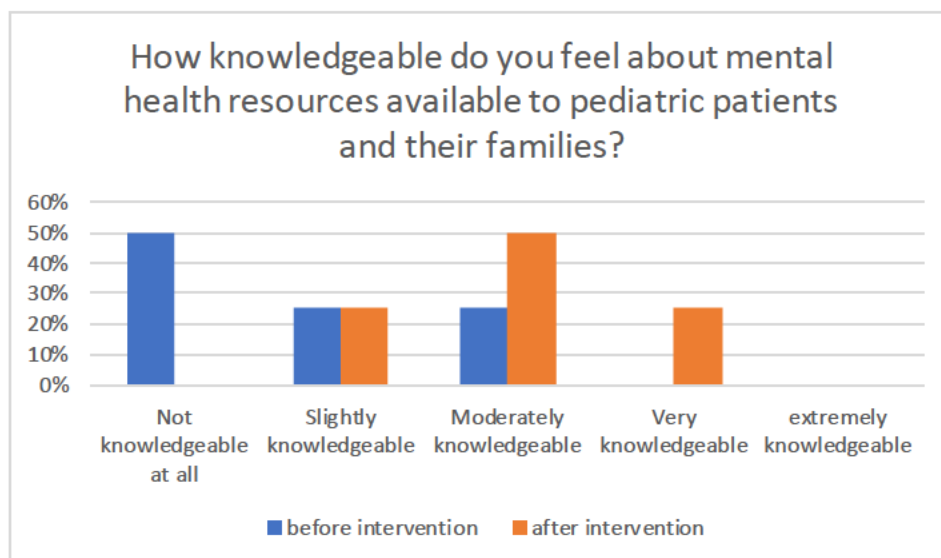
Percent of participants: Comfort engaging with pediatric patients



The final self-rating question addressed how knowledgeable participants felt about mental health resources available to pediatric patients and their families. Pre-intervention, 50% selected “not knowledgeable at all,” 25% “selected slightly knowledgeable,” 25% selected “moderately knowledgeable” and none selected “very” or “extremely knowledgeable.” Post-intervention no one selected “not knowledgeable at all,” 25% selected “slightly knowledgeable,” 50% “moderately knowledgeable,” and 25% “very knowledgeable” about mental health resources available to pediatric patients and their families (figure 4).

Figure 4

Percent of participants: Knowledge of resources



In regard to time spent on the training module, 50% reported 21-30 min., 25% reported 31 to 40 min and 25% reported > 40 min. The total run time of the pre-recorded module was 28 min. Post-intervention, 75% of respondents reported that the training was not burdensome, 25% reported that it may have been, and no one reported yes it was burdensome. The participant who responded “maybe” to the question of feeling burdened by the intervention further elaborated with free text, “Hard to find time to watch this video in its entirety during working hours.”

Question 11 of the post-intervention survey asked participants if they felt the module will help to improve patient care. 100% responded yes.

Discussion

Summary

Primary outcome measures were met. Knowledge of 1) the impact of the pandemic on pediatric mental health, 2) trauma-informed approaches and interventions, and 3) mental health resources increased as a result of this intervention. Also, as a result, participant comfort level for engaging with pediatric patients who may be experiencing mental health difficulties related to the pandemic was increased. This increased knowledge and comfort may lead to improved

patient care. Participants unanimously selected that they felt that it would. More research is necessary to determine this. Refinement of this improvement project is warranted.

In terms of balancing measures, it is not known if viewers became triggered by the material, though no one reached out to debrief as offered in the module and there was no such feedback on the post-intervention survey.

Interpretation

Average perceived knowledge and comfort increased after the intervention. A recent Cochrane Library review found with moderate-certainty evidence that, compared to no meetings (including courses, seminars, and workshops in a variety of formats), healthcare professionals were more likely to implement practices recommended to them after educational meetings (Forsetlund et al., 2021). Authors found moderate-certainty evidence to suggest that this probably slightly improved patient health (Forsetlund et al., 2021). An educational intervention such as this could be part of future efforts to improve the mental health care of pediatric patients.

In terms of the impact of this project on staff and patients, there are several unanswered questions. Will feeling more knowledgeable and comfortable translate to improved patient outcomes? Will it decrease healthcare provider burnout? Given the low rate of survey completion and methodology used, conclusions could not be drawn. This quality improvement project could be the beginning of a process to more directly incorporate components of behavioral health into the scope of practice of primary care providers and to study if patient outcomes are improved. This is relevant because behavioral health resources can be difficult to access, and therefore patients increasingly rely on their PCP for these services.

Observed outcomes include a low response rate. The context of the COVID-19 pandemic may have limited the ability of providers to seek out new information. This was part of the impetus for this intervention and a suspected limitation. Reassessment of methods is warranted.

Limitations

The main limitations in implementing this project were related to the COVID-19 pandemic. The pandemic created staff shortages, restrictions on in-person meetings, and increased stress on healthcare workers. This was anticipated and was an important consideration in the design and execution of this project. A live, interactive, discussion-based presentation would have been the most engaging platform, however that was not possible. The limited number of surveys returned, especially post-module surveys, may be related to one of several factors including participants' time constraints, forgetfulness, disinterest, or unclear instructions. A final slide on the presentation reminding participants to complete the post-module survey could have addressed this. Embedding the surveys into the training video may have also increased post-module survey return but due to technical difficulties, was not done. Personal incentives could also have improved response rates. Making the module a requirement could contribute to burnout and therefore was not considered. Another major limitation was that time did not allow for re-implementation of this quality improvement project based on initial data analysis. There were major administrative changes at the clinical site occurring as the project was in development and the first implementation did not occur as early as expected. Finally, an outdated electronic medical record system (EMR) limited data acquisition and analysis involved in module development.

Conclusions

There were several implications related to this project and the context it occurred in. One is that rapid development of educational material and dissemination of resources is important in an evolving situation. Materials could be tailored to the community and setting. Moving forward, it is worthwhile to improve and expand upon this project as mental health repercussions of the pandemic may be felt by patients for some time into the future. Given the shortage of behavioral health, particularly in rural areas, continuing to develop training and support for primary care providers is a worthy investment.

Other information**Funding**

There was no outside funding secured for this intervention. The monetary donation to a local organization that works with pediatric mental health was provided by the project lead. This amounted to \$20 and was made on 2/28/22.

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Appendix A

Module Objectives Slide

Objectives

- Increase provider knowledge of the impact of the COVID-19 pandemic on pediatric mental health
- Note social determinants of health & COVID-19
- Discuss best practices (trauma-informed care) and increase provider knowledge of and comfort level with implementing these
- Note signs/symptoms of burnout and note mitigating strategies
- Review resources

Appendix B

Clinical Site Letter of Support

Letter of Support from Clinical Agency

Date: 07/19/2021

Dear Vanessa Remhof,

This letter confirms that I, Patrick Luedtke MD, MPH, allow Vanessa Remhof, OHSU Doctor of Nursing Practice Student, access to complete her DNP Final Project at our clinical site. The project will take place from approximately July 19th, 2021 to March 18, 2022.

This letter summarizes the core elements of the project proposal, already reviewed by the DNP Project Preceptor and clinical liaison (if applicable):

- **Project Site(s):** Delta Oaks Lane County Community Health Center, 1022 Green Acres Rd, Eugene, OR.
- **Project Plan:**
 - **Identified Clinical Problem:** The psychological toll of the COVID-19 pandemic on our pediatric population is a concerning and evolving issue.
 - **Rationale:** Gathering and disseminating the most up-to-date statistics, relevant interventions, and resources can assist providers in mitigating pandemic-related adverse health outcomes. The framework for this project is based on key assumptions and principles from the Substance Abuse and Mental Health Services Administration's (SAMHSA) trauma-informed approach.
 - **Specific Aims:** The goal of this project is to increase provider knowledge of the impact of COVID-19 on pediatric mental health in Lane Co. and to increase awareness of approaches and interventions that may help to mitigate negative sequelae.
 - **Methods/Interventions/Measures:** Given the context of COVID-19 and social distancing, an online learning module will be used. A pre-test and post-test format will be used to assess knowledge and confidence rated on a Likert scale.
 - **Data Management:** Data will be collected at baseline, immediately following the intervention and then again at one- and four-weeks post-training. No patient specific data will be gathered.
 - **Site(s) Support:** Site support will consist primarily of access to providers for the educational module and pulling of statistical data from the EMR (eg. COVID-19 rate among the adult and pediatric populations). Site support will be provided by Briana Axline, FNP.

During the project implementation and evaluation, Vanessa Remhof will provide regular updates and communicate any necessary changes to the DNP Project Preceptor.

Our organization looks forward to working with this student to complete their DNP project. If we have any concerns related to this project, we will contact Vanessa Remhof and Jonathan Soffer (student's DNP Project Chairperson).

Regards,

Briana Axline, FNP
I

Family Nurse Practitioner, Delta Oaks CHC
Job Title

8/12/21
Date Signed

Patrick Luedtke, MD, MPH
S

Medical Director, Community Health Centers of Lane Co.
Job Title

8/9/2021
Date Signed

Appendix C

Project Timeline

Project Timeline

	May 2021	Jun 2021	Jul 2021	Aug 2021	March 2022
Finalize project design and approach		X			
IRB determination			X		
Letter of approval from site				X	
Training disseminated by clinic contact					X
Final data analysis					X

Appendix D

Pre- and Post-intervention Survey Questions

Q1 - How knowledgeable do you feel about the impact of the pandemic on pediatric mental health?
Q2 - How knowledgeable do you feel about trauma-informed care approaches and interventions for working with pediatric patients and their families who have experienced difficulties due to the COVID-19 pandemic?
Q3 - How comfortable do you feel engaging with pediatric patients who may be experiencing mental health difficulties related to the pandemic?
Q4 - How knowledgeable do you feel about mental health resources available to pediatric patients and their families?

Figure C1: Pre-intervention survey (without likert response scales)

Q1 - How knowledgeable do you feel about the impact of the pandemic on pediatric mental health?
Q2 - How knowledgeable do you feel about trauma-informed care approaches and interventions for working with pediatric patients and their families who have experienced difficulties due to the COVID-19 pandemic?
Q3 - How comfortable do you feel engaging with pediatric patients who may be experiencing mental health difficulties related to the pandemic?
Q4 - How knowledgeable do you feel about mental health resources available to pediatric patients and their families?
Q5 - Did you feel the training was burdensome on you (in terms of time or emotion)?
Q6 - If you responded yes to the last question, please explain. This will help us craft a better training in the future.
Q7 - About how much time did you spend on the training module?
Q8 - Do you feel this module will help to improve patient care?
Q9 - Do you have any other feedback you would like to share with us?

Figure C2: Post-intervention survey questions (without likert response scales)

Appendix E

IRB approval not required



IRB MEMO

Research Integrity Office

3181 SW Sam Jackson Park Road - L106RI
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NOT HUMAN RESEARCH

August 25, 2021

Dear Investigator:

On 8/25/2021, the IRB reviewed the following submission:

Title of Study:	COVID-19 & Pediatric Mental Health, A Provider Update
Investigator:	Jonathan Soffer
IRB ID:	STUDY00023468
Funding:	None

The IRB determined that the proposed activity is not research involving human subjects. IRB review and approval is not required.

Certain changes to the research plan may affect this determination. Contact the IRB Office if your project changes and you have questions regarding the need for IRB oversight.

If this project involves the collection, use, or disclosure of Protected Health Information (PHI), you must comply with all applicable requirements under HIPAA. See the [HIPAA and Research website](#) and the [Information Privacy and Security website](#) for more information.

Sincerely,

The OHSU IRB Office

