Implementing Staff Education in Dialectical Behavior Training to Improve Staff Response to Client Self-Harm

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Abstract

Direct-care staff at a residential treatment center in Oregon require evidence-based training so that they can respond to dysregulated clients at high risk of Non-Suicidal Self-Harm (NSSI) in a way that is effective, patient-centered and trauma-informed. Dialectical Behavioral Therapy (DBT) has been implemented in similar settings and client populations to the project site, is trauma-informed and focuses on development of skills that staff can use to coach clients. Project aims included direct-care staff's acquisition and understanding of DBT skills via in-person and pre-recorded video training sessions. Measures of the intervention's success included percentage of staff trained and rate of perceived change in acquisition, knowledge and utility of DBT skills. In order to assess unintentional outcomes of the intervention, staffing levels and frequency of turnover were analyzed. Data was limited due to a high rate of survey non-response but showed modest improvements in skills acquisition and perceived utility following in-person training. This project adds to an under-represented topic in the literature, and which could benefit from future improvement efforts.

Introduction

Problem Description

Juvenile-justice involved youth are at increased risk of Non-Suicidal Self-Injury (NSSI). This relationship is likely mediated by neurocognitive alterations in executive function and emotion regulation attributable to early trauma exposure (Choi, 2016; Joyal et al 2020; McCuish et al., 2017; Puszkiewicz & Stinson, 2019; Ruch; 2019; Seto & Lalumière, 2010; Yoder et al., 2020; Yoder et al., 2019; Yoder & Precht 2020). NSSI peaks in adolescence with pooled rates of 18% in community samples, over 40% in clinical samples, and over 44% within the juvenile-justice system (Koposov et al., 2021; Lüdtke et al., 2018; Zetterqvist, 2015). NSSI predicts a 30 times increase in risk of dying by suicide within a year, making it a critical target for intervention **(**Anestis et al., 2013; Bahji et al., 2021; McReynolds et al., 2017; Witt et al., 2021; Zetterqvist, 2015). Despite working with high-risk clients, direct-care staff often receive limited training in relevant evidence-based therapeutic skills. Insufficient training increases rates of staff burnout and turnover, stigma towards clients and use of punitive measures, all which compromise quality of care (Menne et al., 2007; Institute of Medicine 2001, 2006; Tomar et al., 2017).

This paper will describe a quality improvement project's process and findings in which evidence-based skills training was developed and provided for direct care staff who work with clients at high risk of NSSI. The project site is a 14-bed non-profit residential treatment facility in Multnomah county, Oregon, which provides rehabilitative services to adolescents who are adjudicated for sexual offenses and are under the jurisdiction of Oregon Youth Authority. Anecdotal evidence suggests that client dysregulation and NSSI is frequent, and that staff's lack of evidence-based skills to use in response impacts staff morale and turnover.

Available Knowledge

Oregon Health Authority's (OHA) Youth Suicide Intervention and Prevention Plan (YSIPP) identifies suicide prevention as a priority goal for health systems in Oregon, with "special attention paid to protect those known to be at high risk" (Oregon Health Authority, 2016). OHA and National Center for Injury Prevention and Control guidelines support an integrated organization-wide approach to workforce training that increases the delivery of efficient and effective NSSI and suicide-related care (Oregon Health Authority, 2016; Stone et al., 2017). Despite these guidelines, best practices addressing training direct-care staff in effective NSSI and suicide response and prevention are lacking, as the majority of relevant research involves individual-level interventions focused on on "problem-behaviors". (Irvine et al., 2012; Malin et al., 2014). The limited evidence related to training direct-care staff in NSSI and suicide response suggests that augmenting staff education more generally with relevant on-the-job training - particularly regarding managing difficult behaviors - may have a significant impact on job satisfaction and turnover, increasing staff retention and ability to meet the complex needs of residents (Dakin et al., 2011; Menne et al., 2008).

Rationale

The theoretical treatment model currently utilized at the project site is Positive Peer Culture (PPC). PPC targets generalized developmental needs of juvenile justice-involved youth, including autonomy and social reciprocity with the overall goal of moral judgement development (Martin & Osgood, 1987; Sherer, 1985). The data regarding the efficacy of PPC is mixed, with modest improvements in social skills, pro-social behavior and reduced recidivism, though available studies exhibited low methodological quality (Bendtro & Caslor, 2019; Helmund et al., 2015; Leeman et al., 1993; Martin & Osgood, 1987; Nas et al., 2005; Sherer, 1985; Steinebach & Steinebach; 2009). Studies assessing PPC's efficacy among teens with a history of childhood

maltreatment found higher rates of subsequent arrest, and several studies noted a lack of pre and post-test change in moral judgement or social skills (Helmund et al., 2015; Nas et al., 2005; Ryan, 2006). Taken as a whole, the data indicates that by itself, PPC falls short of addressing the trauma-related symptoms that predict self-harm, suicidality and poor outcomes among juvenile offenders, as it neglects the ongoing impact of trauma on the developing brain.

Dialectical Behavior Therapy (DBT) is an evidence-based therapy with desirable outcomes related to frequency and severity of NSSI and chronic suicidality (Groves et al, 2012; Kothgassner et al., 2020; Krantz et al., 2018; MacPherson et al, 2013; Mehlum et al., 2019; Plener et al., 2018; Rizvi et al., 2021; Witt et al., 2021). It is trauma-informed and has been successfully implemented in residential settings with adjudicated adolescents (Berk et al., 2020; Cook & Gorraiz, 2016; DeCou et al., 2019; Groves et al., 2012; Kothgassner et al., 2020; MacPherson et al., 2013; Rizvi & Fitzpatrick, 2021). Evidence suggests the most critical ingredient of DBT to implement is skills training. This finding supported a focus on training direct-care staff so that the individuals who spend the most time with clients can coach them to utilize DBT skills in situ (Linehan et al., 2015).

The Model for Improvement developed by the Institute for Healthcare Improvement (IHI) was used to design the implementation methodology for this project. Short Plan-Do-Study-Act (PDSA) cycles have demonstrated efficacy in facilitating sustainable organizational change through iterative stakeholder-driven modifications to the status quo, which results in continuous and sustainable quality improvement (Langley et al., 2009).

Specific Aims

The project aims for direct-care staff who work in long-term residential treatment with Juvenile Sex Offenders (JSOs) to acquire evidence-based skills to use with dysregulated clients

at high risk of NSSI. This will be the first step in a long-term goal of developing effective, sustainable, evidence-based and trauma-informed continuing education for direct-care staff.

Methods

Context

The project site is part of a larger 501(c)(3) public charitable organization that runs a wide array of community-based programs that serve children, youth and families in Oregon and Washington State. It is funded by grants and contracts with various county, state and federal departments, with most of the funding from departments and agencies within Oregon. The project site is a residential treatment facility that provides rehabilitative services to male JSOs age 13-19 who are under the jurisdiction of Oregon Youth Authority. Each site houses clients over the course of their 2 year sentence and provides education support, psychiatric medication management, and mental health treatment; specifically: individual, group and family counseling within the PPC therapeutic model. The site employs seven clinical staff (therapists, case managers and supervisors), and 14 direct care staff. Turnover has been historically high, requiring frequent training and onboarding. Eight out of 14 direct-care staff were hired in the last year; half of the staff who quit had been employed 6 months or less. While clinical staff have prior training in therapeutic interventions relevant to NSSI intervention - including DBT skills - direct care staff receive training exclusively related to the program's primary therapeutic modality and program expectations. Direct-care staff spends most of their time providing face-to-face client care around the clock.

Intervention

The DBT Skills training curriculum was developed through an iterative process based on best available evidence and informed by DBT Skills Training Manual developed by Rathus &

Miller (2016). Content inclusion was guided by staff and supervisors. Training topics included psychoeducation related to emotional dysregulation, initiation and maintenance of NSSI; skills for staff to utilize in the milieu; and integration of DBT skills into existing PPC framework. The PDSA cycle 1 training consisted of one in-person 2-hour workshop. The PDSA cycle 2 format included three pre-recorded 35-45 minute training videos. The training plan was introduced to staff at clinical and direct-care staffing meetings, and iteratively refined based on feedback from staff and supervisors.

Utilizing the PDSA model, data related to the training implementation was reviewed pre and post-implementation as well as at 1 and 2 months. Prior to cycle 1 training a pre-intervention survey was distributed to assess perceived need for training in behavioral skills for dysregulated clients. A post-intervention survey was distributed immediately following training to assess staff's immediate perception of knowledge acquisition and engagement with the material. Updated pre and post surveys were distributed prior to cycle 2. Additional post-intervention surveys were distributed monthly after each intervention to assess staff implementation of skills, perception of training utility and barriers to utilization. Cycle 1 surveys were distributed by email and in-person, cycle 2 surveys by email; all were accessible by link and QR code (Appendix B).

Study of the Intervention

The study of this intervention included evaluation of pre and post-intervention survey responses. Data was gathered on potential effect modifiers including staffing levels, staff turnover and leadership support for intervention implementation. This monitoring facilitated evaluation of the DBT skills trainings' impact on staff's knowledge and skills acquisition and established whether observed outcomes were due to the intervention.

Measures

This project's primary outcome measure was percentage change in staff's perception of relevant skills acquisition. Data related to this outcome was gathered and analyzed pre-intervention, immediately and monthly post-intervention using anonymous surveys. This allowed us to evaluate whether DBT skills training resulted in a change in perceived skills acquisition, which was the primary aim of the project. Process measures included percentage of staff trained and rate of perceived change in knowledge and utility of training. Staff turnover was considered as a balance measure and evaluated via staffing levels pre and post intervention.

Data Analysis

This project was implemented over three months between April 2022 and July 2022. Data was collected and analyzed after staff training in May. The rate of change in staff perception of skills acquisition, perceived change in knowledge and utility of training were calculated and analyzed at these same intervals. Qualitative data regarding barriers to implementation and impact of training material type on skills acquisition was gathered via survey and analyzed for themes. Pre and post intervention data was sought for three months pre and post intervention to assess staffing levels and turnover.

Ethical Considerations

All staff at the project site were informed of the project during staffing meetings and by email and informed that participation was voluntary and all survey responses anonymous. They gave their approval to participate by participating in surveys. No identifying information connected to incident reports was collected. No identifiers, characteristics or demographics of clients with NSSI or suicidal behaviors were collected; limited staff demographic information was collected and de-identified. The clinical site signed a letter of support, which gave consent to

participate in this improvement project. The project was submitted to the OHSU Institutional Review Board (Study #00023431), deemed not to be research and did not require further review.

Results

The goal and scope of this project shifted several times, as did availability of coordinating staff (Appendix A). Initially, an agency was to train all staff in DBT skills followed by implementation of in-situ DBT skills support for direct-care staff. Because of funding, the project site ultimately prioritized training for only clinical staff. Direct-care staff training was added into the scope of the project and skills implementation was de-prioritized until after training was complete. The house manager was asked to distribute pre-intervention surveys to staff; none were returned. A 2 hour on-site training session was developed and implemented. Pre and post surveys (Fig. B1, B2) were distributed immediately before and after training. Four out of 14 (28%) direct care staff were trained, one left early in response to urgent client needs. All staff surveyed identified as male (100%). Two (50%) were employed less than 6 months, one (25%) more than 6 months but less than 1 year, and one (25%) longer than 1 year. Staff requested materials to access outside of training, so a supplementary DBT training video series was created. Future training sessions were cancelled due to COVID-19 exposure protocols and project site non-response; it became advantageous to proceed with the video series rather than future in-person training. Videos were distributed to be watched over a month with updated pre and post intervention surveys (Fig. B2) to be taken immediately and 1 month post training. Multiple attempts at follow-up were made by email. No surveys were returned, nor videos viewed by the end of the project.

Data from the initial in-person training showed staff skills acquisition increased 50%, knowledge acquisition decreased 33% and perceived utility of training increased 20% (Appendix

C). Qualitative data regarding impact of different training modalities on knowledge and skills acquisition, and staff-reported barriers to implementation were sought but unavailable due to survey non-response. Anecdotal barriers were elicited from supervisors and included time and staffing constraints. Staff turnover leading up to project implementation was 9 out of 14 (64%). Of those, four staff (50%) had been hired fewer than 6 months prior to leaving. Data related to turnover post-implementation was sought, but unavailable due to site non-response.

Discussion

Summary

Direct-care staff working in community mental health responded to DBT skills training with modest increases in perceived skills acquisition and utility, though a small inverse relationship with knowledge acquisition was noted, likely attributable to survey design. These findings represent the potential for training to drive improvement in evidence-based skills that staff use to support clients at risk for NSSI, though paucity of data limits internal validity. We observed numerous barriers that may inform future innovation efforts, including funding constraints, readiness for change and disrupted communication. This project adds to the evidence base regarding training direct-care staff, a topic critically under-represented in the literature (Dakin et al., 2011; Menne et al., 2008).

Interpretation

In any improvement process, we must reflect on why innovations fail. Funding constraints (common in state-funded community mental health) impacted staff's availability and access to training, and changed the project's scope and focus. They may have indirectly impacted staff accessibility as chronic understaffing impacts work burden and is relevant given the

COVID-19 pandemic exposures during this project. Understaffing is well-known to limit organizational readiness for change by reducing intrinsic motivation, and may contribute to burnout (Griffiths et al., 2021; Kaufman, 1971, Shin et al., 2018). Despite the economic barriers, supervisors reported they plan to use the videos for continuing education and onboarding. Given the frequency of staff turnover, this unexpected cost-savings may impact the intervention's appeal, though a Cost-Effectiveness Analysis would be prudent to provide data related to cost-savings, and future analysis is recommended to ensure the interventions impact on primary training outcomes (Bensink et al., 2013; Moullin, et al., 2019).

Readiness for change and miscommunication were additional barriers. While initially all levels of the organization showed interest in the intervention, a group of supervisors (representing innovators and early adopters) uncovered a need for updated PPC training. This pivotal group prioritized this unexpected need, which shifted both their focus and organizational readiness for change (Rogers, 1983). While unexpected needs arising is part of any implementation effort, the change in plans was not proactively communicated to project leads. Additionally, training and survey distribution were scheduled with supervisors, but upon arrival staff were unaware of both impending training and surveys, creating delays that impacted project implementation. While failures in communication are by no means unusual, they are relevant to future innovation, and represent an opportunity for improvement efforts.

Finally, an alternate implementation model may be beneficial for projects in similar settings. While PDSA cycles' iterative structure and focus on sustainability were strengths of this project, the literature suggests the Exploration, Preparation, Implementation, Sustainment (EPIS)

Framework's emphasis on understanding outer and inner system contexts and identifying the impact of barriers and facilitators prior to implementation may have an advantage in community mental health settings (Becan et al., 2018; Moullin et al., 2019).

Limitations

The small sample size and low response rate limit the internal validity and generalizability of the project. It is unlikely responses are representative of a larger population given half (50%) of the respondents had been employed fewer than 6 months, and all respondents (100%) identified as male. We cannot rule out the possibility that these factors impacted the results, nor determine whether findings would hold true among a more heterogenous population. Survey design changed between iterations, but as no updated surveys were returned it is unlikely to have impacted results. Efforts were made to minimize limitations by attempts to train all staff, making surveys anonymized and easily accessible via both link and QR code, and gathering as much data from staff in-person as possible. The shifting nature of the COVID-19 pandemic and scheduling conflicts limited opportunities for on-site interaction, and systemic barriers to communication sharply curtailed response rates.

Conclusions

This project contributes evidence to the benefits of evidence-based training for direct care staff, and suggests future projects include in-depth analysis of facilitators and barriers to improvement. More data is needed regarding the primary aims, as is data on the sustainability and perceived utility of video training across various roles within the organization. Related topics of interest include the impact of high staff turnover on perceived time burden and burnout, and innovations targeting interdepartmental communication.

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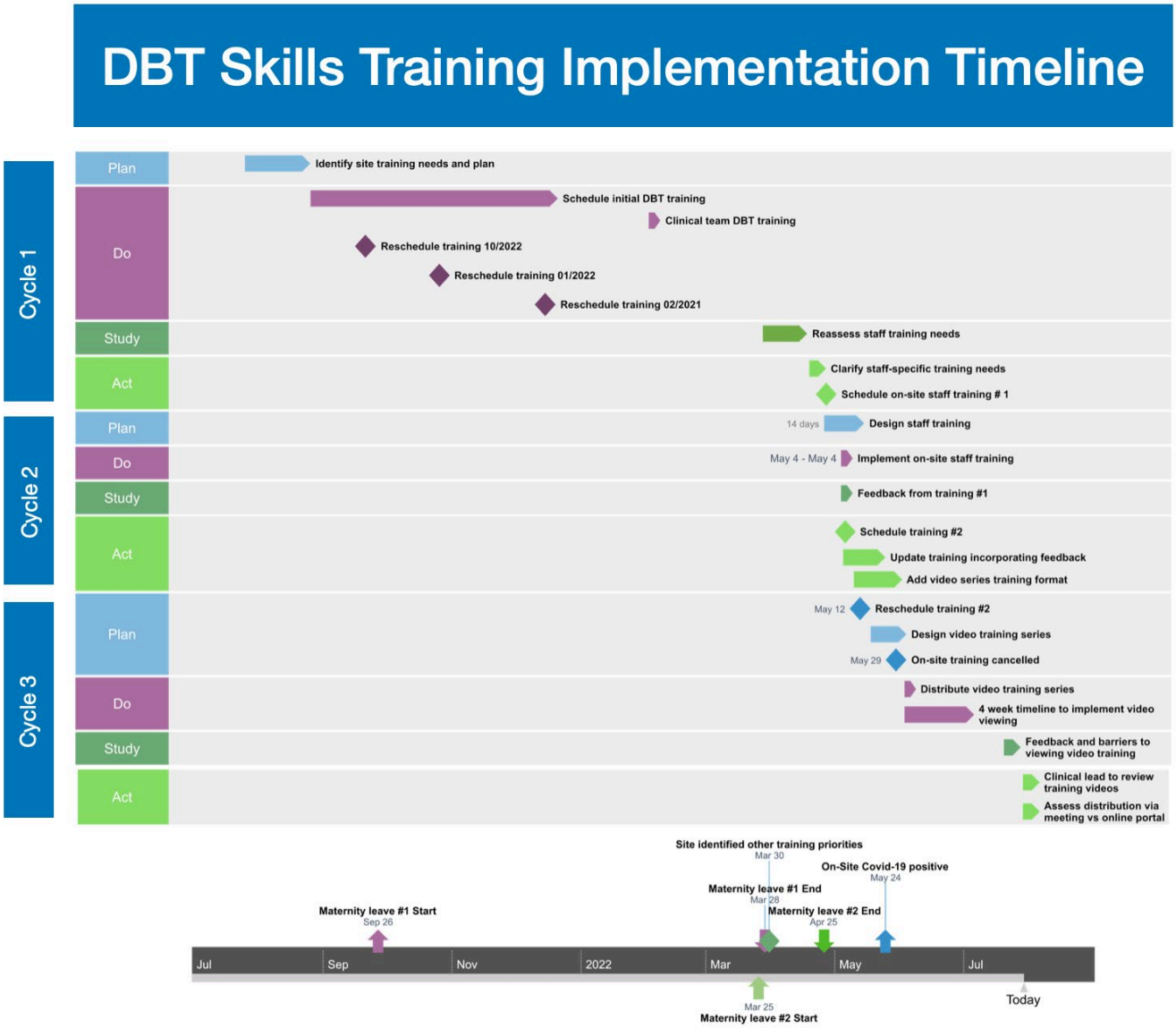
Appendix A: Project Timeline



Appendix B: Tools

Figure B1

Pre-Intervention Survey

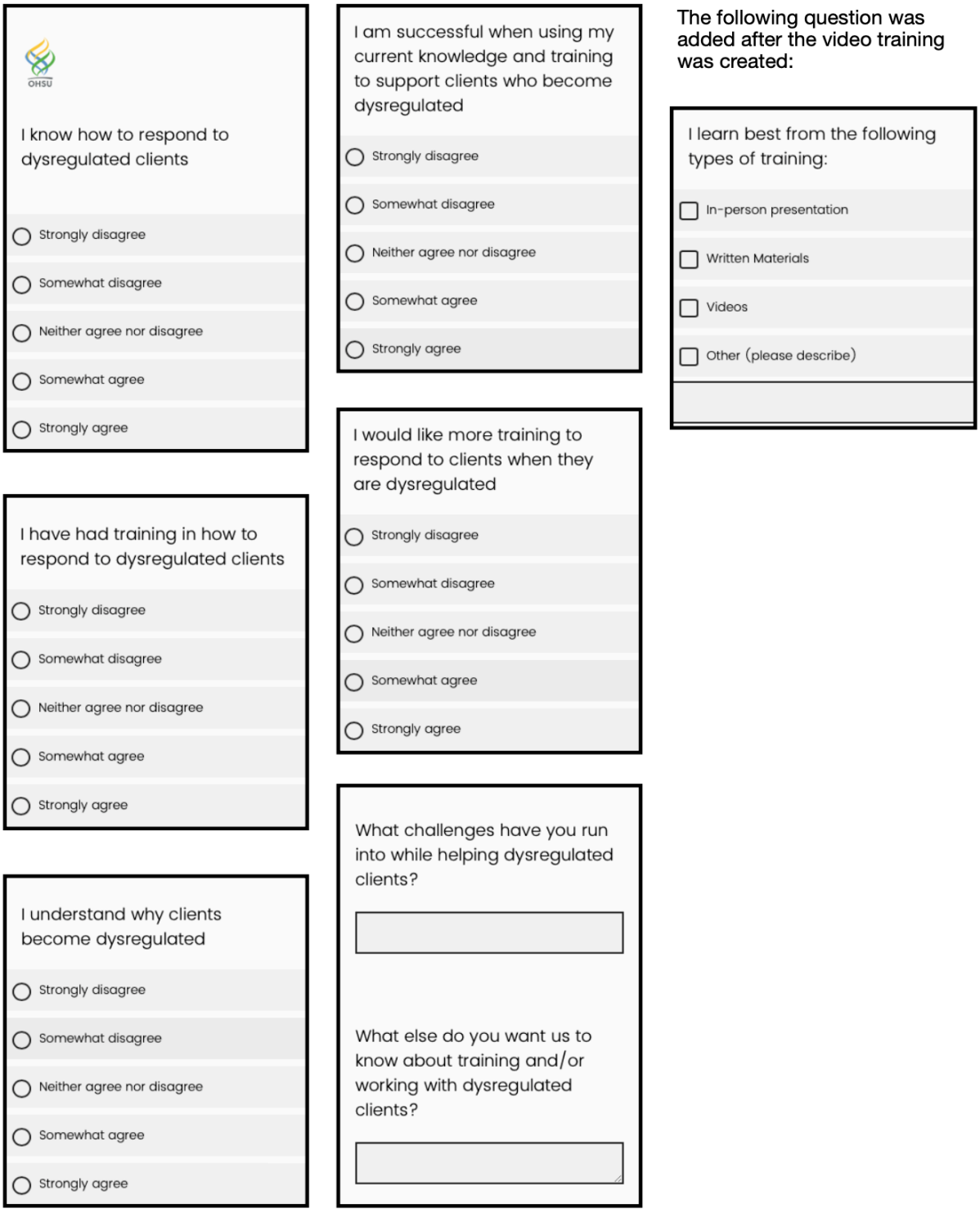


Figure B2

Post-Intervention Survey

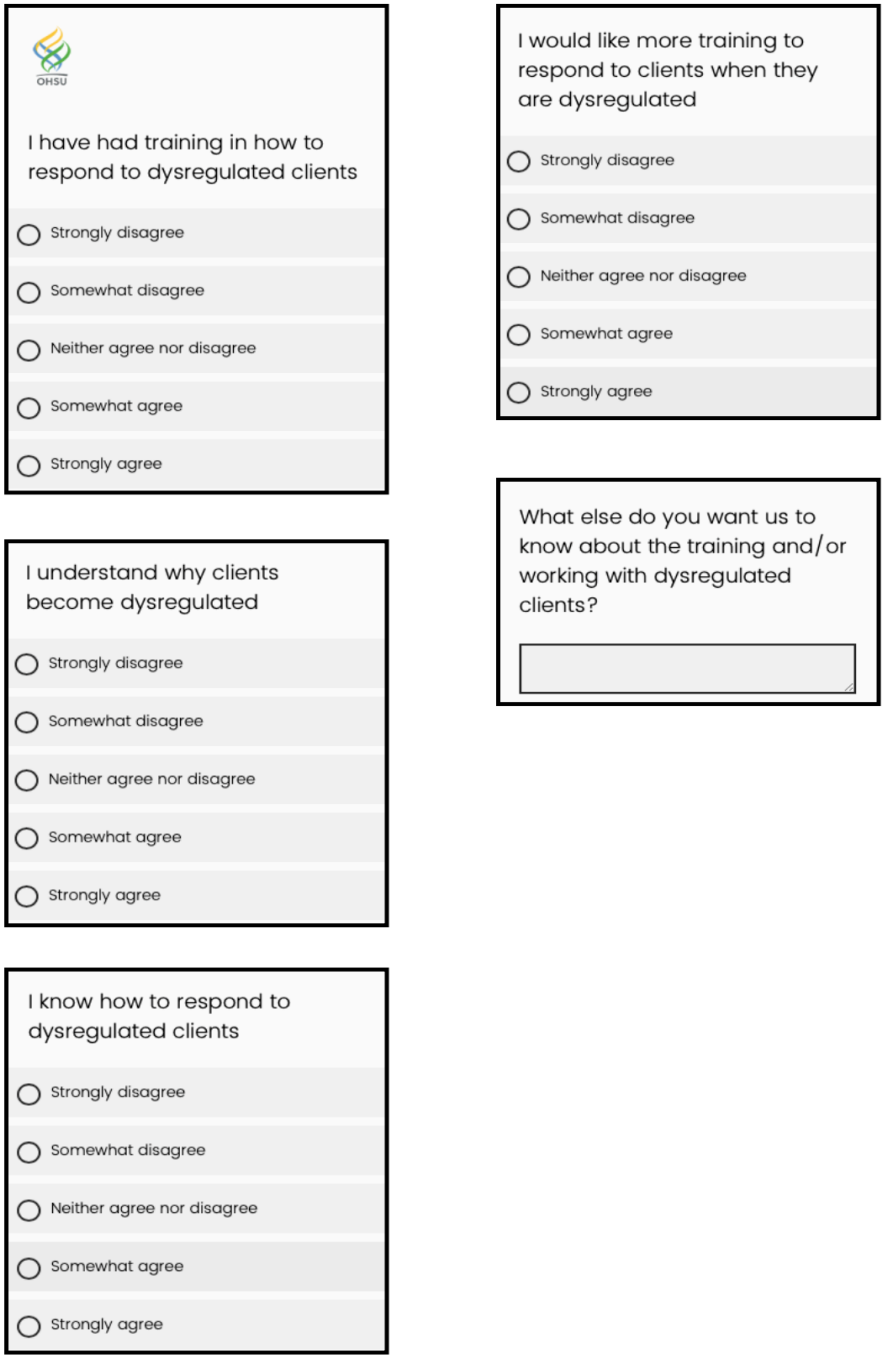
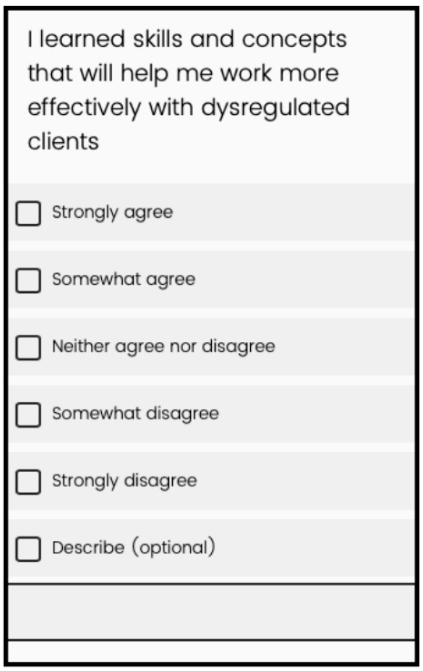
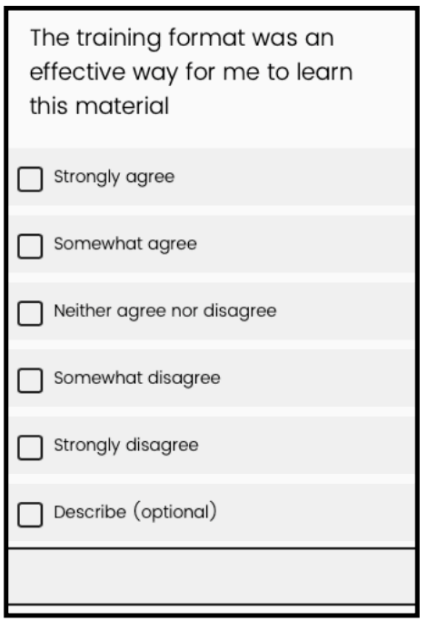


Figure B3

Additional Post-Intervention Survey Questions

The following questions were added after the video training was created:





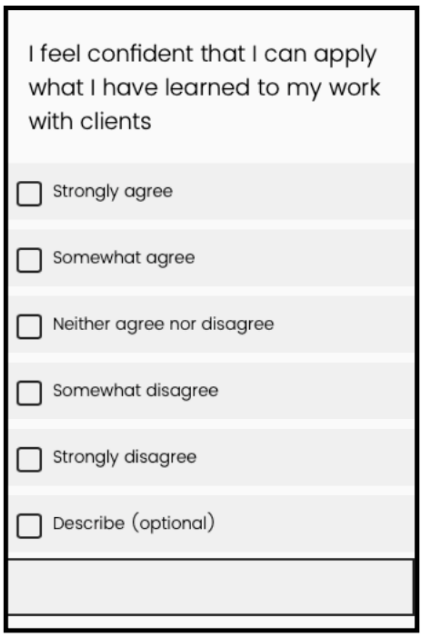
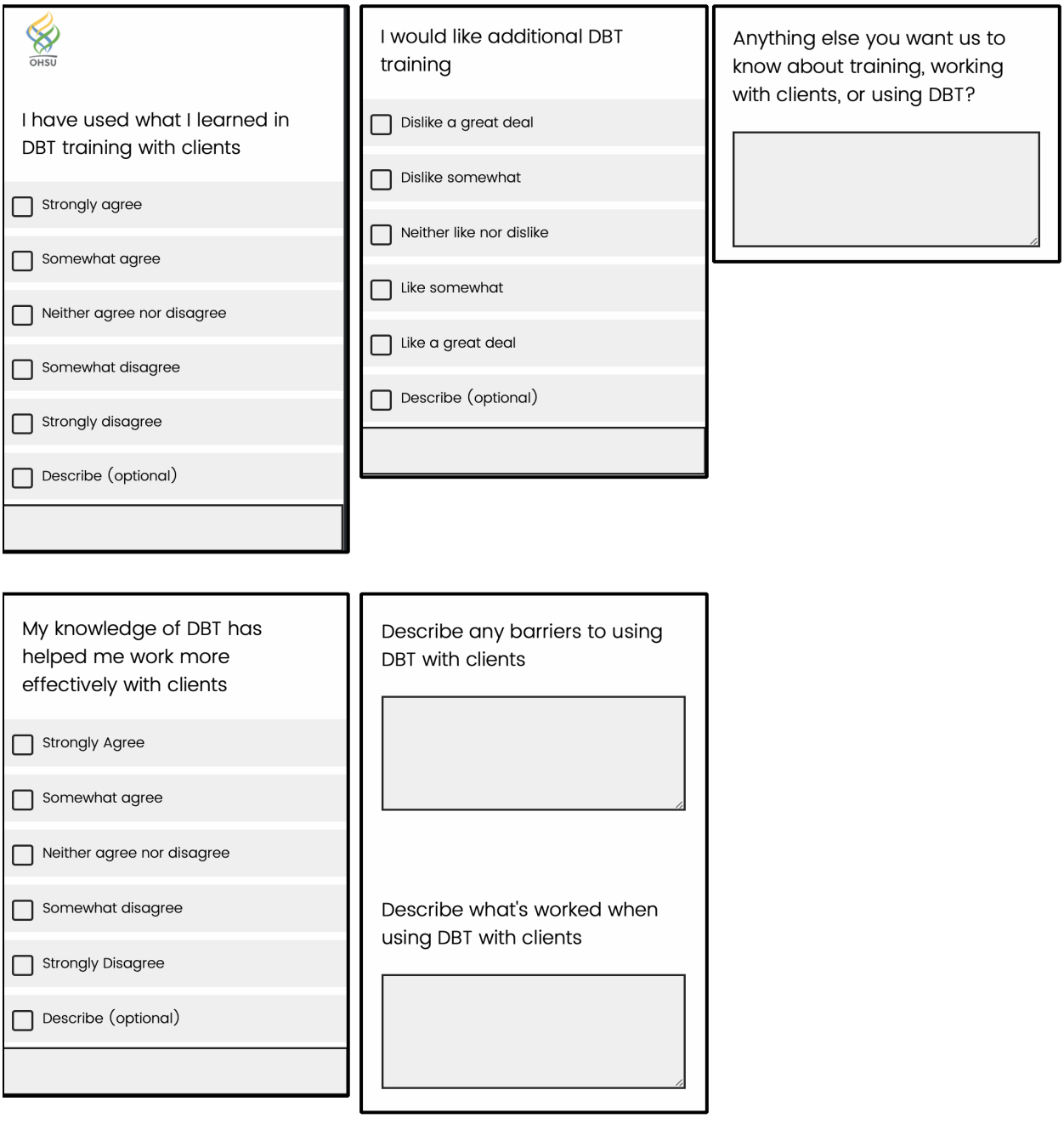


Figure B4

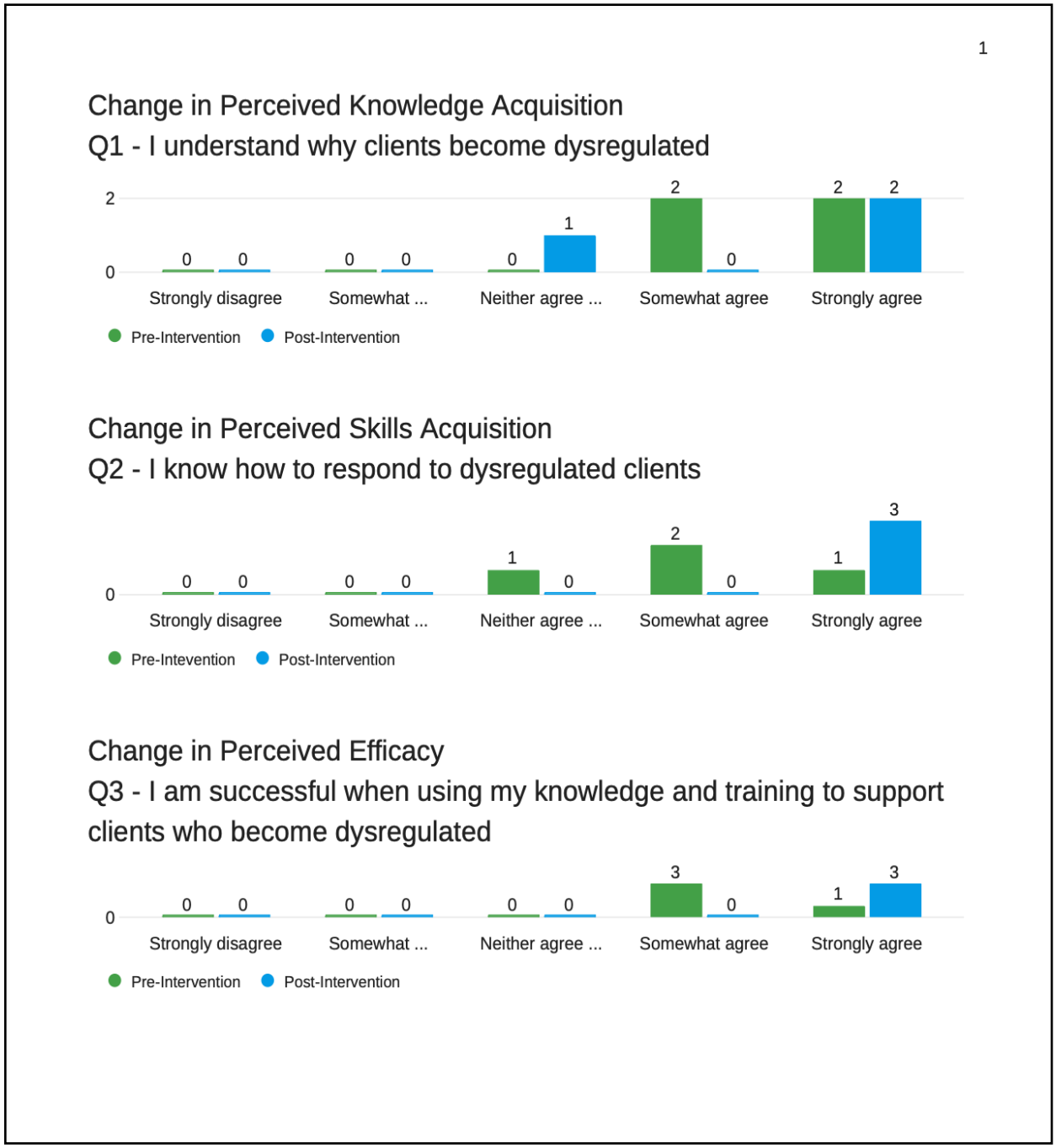
1 and 2 Month Post-Intervention Survey



Appendix C: Survey Results

Figure C1

Comparison of pre and post intervention survey responses after initial in-person DBT training



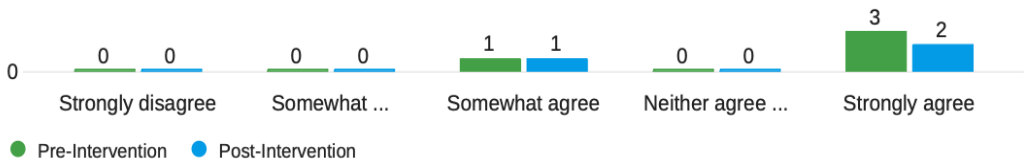
2

Staff Perception of training

Q4 - I have had training in how to respond to dysregulated clients

Staff Desire for Additional Training

Q5 - I would like more training to respond to clients when they are dysregulated



Appendix D: IRB Application for Determination

IRB MEMO

Research Integrity Office
3181 SW Sam Jackson Park Road - L106RI
Portland, OR 97239-3098
(503)494-7887 irb@ohsu.edu

NOT HUMAN RESEARCH

August 23, 2021

Dear Investigator:

On 8/23/2021, the IRB reviewed the following submission:

Title of Study:	Implementing Staff Education in Dialectical Behavior Training to Improve Staff Response to Client Self-Harm: A Quality Improvement Project
Investigator:	Molly Goddard
IRB ID:	STUDY00023431
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

Appendix E: Letter of Support from the Project Site

Letter of Support from Clinical Agency

Date: *8/30/21*

Dear Jean Sterry,

This letter confirms that I, Sarah King, LCSW, allow Jean Sterry, BSN, RN (OHSU Doctor of Nursing Practice Student) access to complete her DNP Final Project at our clinical site. The project will take place from approximately December, 2021 to April, 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)**: Cordero House, 8212 SW Locust Street, Tigard, 97219.
- **Project Plan:** Direct-care staff at Cordero House report feeling unsure of how to respond to client Non-Suicidal Self-Harm (NSSI) and suicidality in a way that is effective, patient-centered and trauma-informed. Dialectical Behavioral Therapy (DBT) has the best outcomes for therapeutic modalities related to decreasing frequency and severity of NSSI and chronic suicidality. It has been successfully implemented in similar settings and client populations to Cordero, is trauma-informed and focuses on development of skills that can be used by staff to coach clients who engage in NSSI. Evidence suggests behavioral skills training is the active ingredient in DBT, making a focus on staff training to support clients as they apply DBT skills an effective priority. This project aims to improve staff skills acquisition when responding to clients engaged in NSSI. In order to achieve this aim, direct-care staff will receive a 1-day DBT training provided by Portland DBT institute. Measures of intervention's success include how frequently staff are using DBT skills while addressing client NSSI. This data will be gathered from incident reports over four months pre and post intervention, subcategorized by staff gender, which treatment team they are on and type of NSSI, and analyzed using a run chart. Additional measures include change in staff knowledge which will be assessed by semi-structured staff interviews and frequency of incident report completion. In order to assess unintentional outcomes of the intervention, frequency of staffing levels and turnover as well as NSSI will be gathered, and impact of addressing NSSI on staff mental health will be assessed by interview. No identifying information related to clients or client demographics will be gathered, all staff data will be de-identified, all data will be password-protected and encrypted.

  To enable the completion of this improvement project, the study site agrees to grant access to behavioral reports and incident reports and provide data on staffing levels and turnover for four months pre and post intervention, and to allow staff participation in the aforementioned semi-structured interviews. Counseling and resources will be provided to staff as needed to mitigate distress related to addressing client NSSI.

During the project implementation and evaluation, Jean Sterry 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 Jean Sterry,. BSN, RN and Molly Goddard, DNP, PMHNP (student's DNP Project Chairperson).

Regards,