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Research Article

Trauma-Specific Suicide Prevention in a Residential Secure care facility: A case study

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ABSTRACT

This study aims to promote research into the Teaching Recovery Techniques (TRT) program as part of suicide prevention in secure residential facilities. TRT, based on cognitive-behavioural theory, addresses the symptoms of posttraumatic stress disorder, arguably a driving force underpinning suicidal behaviour. The case study involved a program worker and her suicidal 15-year-old female client, who, prior to TRT, presented with daily self-harm and suicidal ideation, and frequent suicidal attempts. A qualitative design involved two 45-minute semi-structured interviews, with the program worker and adolescent, at three months post-treatment. A 6-step quasi-qualitative systematic analysis was used to identify the codes of meaning, their frequency, and the themes from participants' statements. An independent female researcher provided a measure of inter-rater reliability. Following TRT, self-harm, suicidal ideation, and suicidal attempts ceased and the adolescent was moved from a secure residential facility to a foster placement. Only one relapse occurred in the 3-month follow-up period. Both adolescent and program workers perceived TRT to have had a significant contribution towards change. The adolescent emphasized the importance of a trusting relationship while the program worker emphasized that TRT needed to be delivered within a suicide aware environment. Future research needs to utilize rigorous experimental designs to evaluate TRT for at-risk adolescents in secure residential facilities.

Keywords: Adolescents; Suicide; Prevention; Trauma recovery

INTRODUCTION

Suicide among adolescents is a serious mental health concern. Despite a global decrease in the number of suicides among adolescents, data suggest there has been an increase in suicide and suicide attempts over the last decade in the United States [1-5]. "Suicide is the second major cause of death for adolescents from 2010 to 2019 based on data from the Center for Disease Control and Prevention (CDCP, 2019). Males are at greater risk of death by suicide, while females have higher rates of attempted suicide (CDCP, 2019),[5]". Certain populations are known to be more at risk of suicide than others, such as adolescents from ethnic minoritized groups who do not possess the same privileges and rights as the dominant ethnic group in the United States, such as African Americans and Latinxs, and those who are gay or lesbian [6-8]. These studies do not represent every ethnic minority group, which can be better-understood studies on resilience [9]. The intersections of identity and institutional space are compounded when we consider the relationship between suicides amongst adolescents who are in restrictive institutions. In relation to the current study, adolescents in juvenile detention in the US have been found to be three times more likely to die by suicide than adolescents in the general population [10,11]. Indeed, suicide is the main cause of death for detained young people [10,12]. A third of young people already come into secure provision with a history of attempted suicide and suicidal ideation [11]. Once in secure accommodation, this figure increases to over fifty percent [13,14]. Furthermore, a majority of incarcerated youth arrive at the facilities having experienced physical, sexual, and/or emotional abuse, unmanaged substance abuse, and an array of behavioural health diagnoses prior to incarceration [15]. The importance of screening on admission has been highlighted, however, there is uncertainty with regards to the extent suicidal ideation is caused by incarceration. The efficacy of prevention strategies on suicide rates is also unclear [5,7,16,17].

A wide range of factors has been identified that increase the risk of suicide for young people in detention. These include previous traumatization, histories of abuse, cumulative loss, familial suicide,

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mental health difficulties, self-harm, substance misuse, solitary confinement, family separation, impulsivity, depression, and accessible means of suicide [18-20]. Additionally, many psychiatric disorders are known predictors of suicide amongst incarcerated youth, with major depressive disorder and generalized anxiety disorders as stable and consistent predictors [21]. One of the more important considerations for incarcerated youth is the relationship between thoughts of death and the risk of suicide. Although thoughts of death are an important predictor of suicidal ideation among the general population, thoughts of death are also highly correlated with the high exposure to violence and trauma that characterizes many incarcerated youth [21]. Relatedly, this heightened exposure to violence, trauma, and victimization significantly increase the prevalence of suicidal ideation in youth [22]. Careful consideration of the complex interactions between youth trauma (e.g., exposure to violence and victimization), thoughts of death, and suicidal ideation should be considered by juvenile corrections staff so that "typical talk" about the death of some youth is not disregarded as inconsequential. In fact, lack of staff awareness of these comments could be especially problematic as the majority of incarcerated youth do not directly disclose their suicidal ideation to corrections staff [22]. There are also risk factors associated with the conditions of confinement including separation from loved ones, crowding, isolation, and solitary confinement [21].

There are important observable signs that staff should observe and that require a rapid response. Hopelessness, withdrawal from people and activities, talking about killing oneself, and gaining access to a means of suicide are some critical cues to suicide risk [23,24]. Additionally, youth who have required any special precautions at any time during confinement should be continued to be monitored and assessed regularly. It is important that staff do not rely solely on youth statements nor contracts or agreements for safety as suicidal youth may present manipulative behaviours as part of emotional imbalance [15]. It is, therefore, also critical to understand that feigned suicide attempts can and have resulted in death, so observational vigilance is critical [25].

Not all signs of suicide risk are behavioural. While detecting covert suicidal behaviour among adolescents is challenging within the general population [26]. The situation is exacerbated for incarcerated youth, where the negative impact of disclosing suicide risk can lead to extending the period of incarceration. In turn, this increases the covert difficulty of assessing thoughts of death and responding reflexively for incarcerated youth [20]. In terms of suicide prevention, Jobes (2006) argued that young people want their psychological pain to end, rather than their life [27]. From this perspective, attempted suicide can be seen as a potential way of coping with suffering. Brandon (2008), however, found that the most vulnerable suicidal young people experienced rejection rather than responsiveness from care providers [28]. Low levels of competence for professionals in dealing with suicide led some to fail to recognize signs of risk [29]. Some young people, because of issues of trust and helplessness as a consequence of abuse or dismissive adults, also reject help [28]. In short, it is essential for professionals to recognize that some young people will use suicide as a way of dealing with their psychological pain and that services, need to be well trained to recognize and respond to risk factors in order to keep adolescents safe.

Within Scotland, where the current study was conducted, there are currently, just over 14,000 children, who have experienced neglect and abuse and are in the care of the local authority in foster care, kinship care or residential care [30]. Of these, 42 children died in the period 2015-2018, equating to 1.9% when compared to the total number of Scottish child deaths reported over the same period. A slight increase from the previous 2009-11 report of 1.51% of all child deaths [31,32]. In the recent report, sixteen children died from predictable life-threatening conditions, and fourteen died untimely from risk-taking behaviour. Five died in residential or secure facilities. There were twice as many males compared to females [30,33].

In the Scottish child general population, three times as many males than females commit suicide, with a dramatic increase in deaths for those fifteen years and older. At least two children die every year in care from suicide, with deaths highest in residential settings [31]. The findings of the Mental Health Welfare Commission for Scotland (2012) suggest, however, that a high proportion of young people come into juvenile detention centers already engaging in suicidal behaviour [34]. Thirty-four out of eighty-four young people were placed in short-term juvenile detention centers or psychiatric facilities because of suicide attempts, and in the previous year, there was a peak with forty-five emergency detentions. Two high profile suicide cases in the media appeared to have influenced such action [34].

Despite these alarming statistics, research into suicide prevention in secure residential facilities in Scotland is almost non-existent. Literature is mostly unpublished and contained within legislative consultations, statistical returns, and governmental policy documentation [33]. In contrast, research into the risk of suicide in juvenile corrections settings in other countries is relatively robust. For example, a recent literature review included 25 research articles including 29 discrete samples of incarcerated youth [35]. In Scotland, only one published journal study, to date, has identified suicide as a risk factor for young people coming into secure residential facilities [36]. A subsequent intervention for adolescents reporting posttraumatic stress and depression involved delivery of the group-based Teaching Recovery Techniques program [37]. Cognitive behavioral coping skills were taught to adolescents over seven sessions resulting in reduced subjective internal distress. Some youth, however, needed individualized support. As a consequence, TRT was adapted and delivered on an individual basis.

Unexpectedly, one female adolescent made a dramatic improvement resulting in the cessation of daily suicidal ideation, and self-harm, and incidents of attempted suicide. This change in behavior was sustained following leaving the secure facility. The current study, therefore, sought to explore and understand this unexpected and unique suicide prevention outcome of individually-delivered TRT (i-TRT). A qualitative case study approach was utilized to explore the experience of the adolescent female and her program worker as well as their perceptions of what may have facilitated the reduction in suicidal ideation, self-harm, and suicide attempts. The study is also the first to research the impact of TRT delivered on an individual basis. While group-based TRT has a growing empirical base for reducing symptoms of PTSD for youth who have experienced a wide range of trauma exposure, such as disasters, refugees, and cumulative domestic violence [37-39]; no studies have evaluated individual delivery of TRT.

METHODS

Research design and ethics

A case study design was used to explore the efficacy of i-TRT with a suicidal young person in a secure residential facility. In general,

the purpose of utilizing a case study design is to obtain an in-depth understanding of the real-life contexts of a phenomenon of interest [40]. Relatedly, this case study was conceptualized due to the recent introduction of TRT into a number of facilities to address traumatization underlying youth behaviour difficulties. While TRT is a well-researched cognitive-behavioural intervention [41]. TRT has not been well-researched in the context of suicide prevention. As a result, a case study was needed to understand the unique experiences of individuals involved with TRT inside a suicide-prevention framework. This study will explore what role (if any) i-TRT served in assisting the treatment of a female adolescent with suicidal ideation, self-harm, and suicide attempts.

The program worker applied i-TRT in an attempt to address youth with recurring suicidal ideation and suicide attempts. The rate of self-harm, suicidal ideation, and suicide attempts were recorded before, during, and after TRT. Qualitative semi-structured interviews were conducted with (i) the youth and (ii) the program worker who delivered i-TRT. Ethics permission, approved by a University Research Ethics Committee, required active informed consent by the Chief Executive Officer of the secure facility, the program worker, parent, and active informed assent by the youth, who were informed they could leave the study at any point without consequence. To ensure the research did not impact a continuing relationship between a program worker and youth, the study was conducted after the contact between a program worker and youth had ended.

Participants

The study involved purposive sampling as this was a unique application of i-TRT (i.e., due to the utilization of TRT for an adolescent who was experiencing pervasive suicidal ideation). The case study focused on a female adolescent aged 15 years, anonymously identified as C., who was approached by her program worker to participate in the study because of the positive outcomes of C had achieved related to her suicidal ideation and self-injurious behaviour. C had been held in a secure residential facility for 12 months because of her suicidal behaviour. The average length of stay was three months. The facility had a maximum of eighteen young people, aged 12 to 17 years of age, and consisted of three residential housing units that each accommodated six young people, supported by care, education, and therapeutic staff. Youth were placed in the facility because of the risks they posed to themselves and others. Youth in the facility had experienced a range of abuse, neglect and other traumas. C had a history of self-harm (daily cutting and suicidal ideation) and frequent suicide attempts (e.g., overdoses and ligatures). The program worker, who delivered i-TRT sessions, was female, a qualified senior program worker with a social care background, in her thirties, and was C's primary program worker. She had 15 years' experience working in residential secure settings. The program worker delivered a wide range of social, emotional, and behavioral programs to C and other youth in the secure care facility.

Program

TRT is a manualized program that provides session by session scripted protocols, based on cognitive behavioral theory and includes psychoeducation on the nature of traumatic events, trauma symptoms and triggers, as well as teaching coping strategies for post-traumatic stress symptoms (intrusions, hyperarousal, and avoidance) [42]. TRT is a promising empirically based treatment for youth in detention and has been found to produce clinically and statistically significant reductions in a myriad of trauma-related symptoms in adolescents, such as dissociation post-traumatic stress, and depression [39,43]. TRT, however, has no specific suicide prevention content or strategies and, therefore, was embedded within a suicide aware environment which had strategies in place for suicide prevention and response. TRT was designed as a group approach that can be adapted for individual delivery. Adaptations to the group protocol for i-TRT included the program worker sharing experiences, in place of adolescent group contributions, e.g. what types of trauma exposure and resultant symptoms adolescents' experience as well as adolescents coping strategies. The seven i-TRT sessions were delivered weekly as part of the facilities daily routine including educational lessons and behaviour change programming. A booster session occurred one month after i-TRT ended. The program worker received three days of training in TRT as part of a 12-program worker cohort. The training was delivered by Professor William Yule, a world leader in child trauma recovery and one of the TRT authors. Three half-day group supervision sessions were provided by the researcher, an educational psychologist who was trained in TRT and who had previously delivered TRT and i-TRT. The program worker was instructed to follow the TRT protocols during their sessions and received on-going supervision regarding the adaption of protocols for i-TRT. Supervision was cognitive-behavioural in approach and mirrored TRT activities including modelling, role-play and feedback. The program worker also brought the case to weekly supervision sessions with a facility staff supervisor.

Interviews

Forty-five-minute telephone digitally recorded interviews were conducted with the youth and the program worker three months following TRT. Interviews were conducted by telephone because of the geographical distance between the researcher and the residential facility, and the youth's new location. Questions, adapted from a study on the effectiveness of a brief exposure program delivered in residential secure settings in Scotland [43], involved a 0-10 rating scale, where 0 equalled no change and 10 equalled maximum change, followed by open-ended questions. Program worker and youth questions covered: (i) the benefits of i-TRT; (ii) how motivating i-TRT was; (iii) the extent to which traumatic memory processing occurred (iv); any changes in stress levels; (v) or changes in the avoidance of high-risk situations; (vi) how the youth felt before, during, and after i-TRT; (vii) whether there were any negative consequences; and (viii) what advice the youth and program worker would give regarding the use of TRT in secure residential facilities. Prompts were minimal and focused on reiterating the question or asking for elaboration, "can you tell me more about that."

Analysis

Analysis of interview data was conducted by the researcher, who had considerable experience of program efficacy research. Digital recordings were transcribed verbatim and for voice tone by a private company. A 6-step quasi-qualitative systematic analysis was used to identify the codes of meaning, their frequency, and the themes from participants' statements [44]

- each participant script was read repeatedly and key issues gradually identified

- codes were named and reviewed
- another review of codes resulted in the identification and naming of themes
- codes and themes were compared between youth and program worker scripts for similarity and difference
- quotes were then identified to evidence the participant meanings. To better capture participants' own perspectives, participant codes and themes are reported as much as possible in participants' words
- finally, summaries are provided of the main findings and set in a narrative style for meaning and accessibility. Questions were analyzed using an inductive approach where the meanings emerged from participant words, rather than being driven by theory. Meanings covered how participants made sense of i-TRT, the context in which i-TRT occurred and the interaction of these factors. To obtain a measure of inter-rater-reliability of codes, themes and exemplar statements, data were analyzed independently by the researcher and a co-researcher, the latter, a female social science researcher in her fifties. The two analyses were compared in order to identify shared understandings and differences in codes and themes.

RESULTS

There was a high level of agreement of inter-rater analysis for codes and themes 87% agreement. Discussion, centered around (i) participant bias and the need to temper assertions accordingly; (ii) researcher judgment regarding the severity of risk from participant statements. To address this, more quotes are provider to enable the reader to make their own judgment; and (iii) uncertainty regarding the efficacy/contribution of TRT in suicide prevention. As such, the paper sought to make explicit the limitations of study design.

Perceived impact of i-TRT

Eight codes were identified in relation to work. Codes were: coping with triggers and emotional dysregulation; increased self-confidence; specific strategies for difficult situations; triggered by brief exposure; setting and therapist relationship important; risk of the non-secure environment; strategies for other environments; moving to a lower level of care. C rated the overall impact of TRT as 8 out of 10 (Table 1) explaining "it's helped me cope so much more. I'm not going back to my old ways." C described her increased capacity to cope with stress, "I can deal better with what people say to me, like before I was really sensitive, whereas now I can turn round, and think you don't matter that much to me, so it's built up a lot of self-confidence." C noted that "specific coping strategies" helped, especially "the safe place is one I still use." C, however, did not like "the one you had to imagine on a TV picture frame and it going away." This technique "brought too many memories back." i-TRT was seen as making "a lot" of difference because of the "mixture of being insecure and i-TRT." The latter meaning C didn't just attribute the change to the program, but also to the setting in which it was delivered. C also noticed others commenting on her progress, "The psychologist I was seeing was saying she noticed a big difference in me. She says that I can talk to people, and I feel surer of myself because it brought a lot of self-confidence in me." Table 1 provides a comparison of adolescent and program worker ratings, themes, and codes.

Supporting C's perception of progress, the program worker also rated the overall effectiveness of TRT as 8. The program worker noted that program impact included C having techniques to use, such as "giving techniques to manage difficult situations. C responded well and some of the techniques seemed to be really helpful for her." A specific example was in relation to managing intrusions. "C was better equipped and able to manage some of her nightmares of attempted suicide helped her to manage that better than has been previously." The program worker highlighted that despite the structure of the secure facility, there were ongoing risks: "C learned and applied techniques to manage in this environment. It's a well-managed and highly supervised environment; however, there are still opportunities for young people to resort to previous behaviours." For the program worker, the secure context provided C and other young people "the opportunity to remind them of the techniques and to support them within that environment."

The program worker, as well as C, also reported that care staff had "recognized there had been improvements." The program worker, however, was unsure if it was the interaction of the setting and program that had improved C's ability to manage self-harming behaviour, that is, "whether that's to do with the fact it's a secure setting and the added bonus of different techniques to manage difficult situations." Interestingly, the program worker perceived i-TRT as part of enabling C to move to "foster care." Further gains included having effective strategies to pass onto C's new care setting, "I've passed the safe place, positive self-talk, relaxation strategies and other strategies onto the foster carer so that she can help C when she requires it."

Increased awareness and motivation

Identified codes were "awareness of the consequences on self and others; looking forward to a future, and awareness of change and persistence". C's awareness of traumatic events, particularly the consequences for others, increased by 7 out of 10: "I was aware of what I was doing before but I was not aware of the consequences it was having on me and other people." C's motivation was also self-reported as significantly increasing by 9. "I'm looking forward to stuff in life, whereas before I didn't think about it much because I just thought about suicide." The program worker affirmed C's rating and perception of motivation and gain, "C was committed, persisted with activities, and was aware of the progress she was making." The program worker also reported on her own gains in awareness and understanding of trauma as an 8. This appears to have been a result of talking with colleagues about trauma and TRT across other secure facilities, "I am more aware through talking to the other secure facilities about young people's trauma and what they were working with."

Avoiding high-risk situations

Identified codes were: "imagining a hopeful future; small goals and steps; new identity-'self as healer'; and conscious of risky situations; and using coping skills than self-harm".

Imagining a better future was rated as 9 out of 10 for C, evidenced by a new vision for working in a helping profession. C stated, "I'm hoping to be a mental health program worker to help children in my situation." Avoiding high-risk situations for triggering suicidal thoughts was rated by C the highest at 10. She elaborated on this by stating "I avoid them as much as possible, because I feel I have something to live for now." Knowing that choices have consequences and making better choices was an 8 "because I think

Table 1: TRT Youth and program worker perception: Ratings, codes and themes.

Key Issues		Ratings out of 10		Codes	Themes
		Youth	Worker		
1)	Impact of TRT	8	8	Coping with triggers and emotional dysregulation (Y)	Reduced emotional regulation and improved confidence (Y)
				Increased self-confidence (Y)	
				Specific strategies for difficult situations (W)	Strategies for coping with community environments (W)
				Setting and therapist relationship important (W)	
				Strategies for other environments (W)	
				Moving to a lower level of care (W)	Risk in non-secure monitored environment (W)
				Triggered by brief exposure (W)	
				Risk of non-secure environment (W)	
2)	Awareness (Motivation)	7(9)	8(8)	Growth of awareness of consequences on self and others (Y)	'Other' centered insights and hope (Y)
				Looking forward to "a future" (Y)	Consequences on others and hopefulness (Y)
				Client awareness of change and persistence (W)	
				Worker shared language (W)	Common language and understandings among workers (W)
				Encouraged worker peer support (W)	
3)	Avoiding High Risk Situations	9	10	Imagined hopeful future (Y)	Hope, action and positive identity (Y)
				Small goals and steps (Y)	
				Emerging new identity-self as healer (Y)	
				Conscious of risky situations (W)	Increased awareness of risky and skills for risky situations (W)
				Reduced Self harm (W)	
				Applying positive coping skills (W)	
4)	Reduced Stress and Trauma Memories	10	8	Stress reduction; increased affect tolerance (Y)	Reduced stress and shame (Y)
				Reduced body shame (Y)	
				Aware of consequences of suicide on others (Y)	
				Glad to be alive (Y)	Reduced emotional dysregulation (W)
				Increased sense of safety (W)	
				Affect tolerance (W)	
				Application of strategies (W)	
5)	Feelings Before, During, and After TRT	n/a	n/a	Daily suicidal ideation (Y)	Process of negative to positive emotion (Y)
				Initially negative feelings (Y)	
				Recognizing achievements (Y)	
				More confidence (Y)	Need for longer-term check-ins (W)
				Recognizing the impact on others (Y)	
				Apply strategies in context (W)	
				Continued check-ins post-TRT (W)	
6)	Challenges with TRT	n/a	n/a	Triggering (Y)	Significant gains, yet, risk of serious triggering through the process (W)
				Need for support (W)	
				Self-harm/attempted suicide ceased (W)	
				Gains outweighed risks (W)	
				Adapting materials; and support team in place first (W)	
7)	Worker Benefits	n/a	n/a	Increased trauma knowledge (W)	Potential organizational gains (W)
				Organizational change (W)	
				Share with community services (W)	
				Self-help (W)	
				Social and economic gains for society (W)	
8)	Future Use of TRT	n/a	n/a	Beneficial (W)	Integration of programming essential (W)
				Embedding in programs (W)	
				Frequency of use (W)	
9)	Advice for Secure Facilities	n/a	n/a	Build on quality of relationship (Y)	Relationship and motivational engagement (Y)
				Motivational engagement (Y)	
				Strategies to help the wider community (W)	Choice of programs factors important to aid long term change (W)
				Choice/flexibility of program (W)	

Y=(Youth) ; W=(Program Worker).

of the impact on other people even after thinking of the effects on me." C's perspective appeared to have gone beyond managing risks to focusing on making a better life and the identification of specific goals and strategies, e.g., "I'm not thinking about risky stuff anymore, I'm trying to make my life better. I'm just trying to think how things will benefit me, the pros and cons of what I'm doing. At the moment I get pocket money and I'm hoping to save up to take my brothers out.". The program worker rated C's capacity to deal with future challenges as an 8. The main future challenges were seen as "self-harm ... and going back over to that bridge." The program worker considered that using i-TRT helped change C's coping strategies. The program worker elaborated on this by stating when "...faced with anything difficult, rather than resorting to self-harm like cutting, it was about using techniques she had learned."

Reduced stress and trauma memories

Identified codes were: "Reduced stress; increased affect tolerance; less shame of body; aware consequences of suicide on others; and glad to be alive". TRT was reported as leading to a significant reduction in stress for C: "definitely a 10. I'm not stressing about hiding anything anymore. I can wear my short sleeve tops. I can talk to people and not worry about them seeing cuts or letting something accidentally slip because I've nothing to hide anymore." In terms of resolving traumatic memories, "I feel a lot better. I can look back on them and I don't wish I had died. I think I could have ruined so many people lives ... it was about people in secure who actually thought about my future and paid attention to me." The latter comment emphasizes the importance of a quality relationship as well as a safe responsive context.

The program worker reported C's stabilization and affective tolerance increased by about an 8. "C settled down, and was using some of the techniques. She was using safe place, and was better at coping and managing things." The program worker rated C's capacity to deal with traumatic memories at 7. "C was able to deal with one of the big things for her, the jumping off the bridge scenario, which she had coming back in nightmares, and she used some of the techniques to help with that." The stopping of nightmares, using the i-TRT strategies for dealing with intrusions, was reported as a significant clinical change for C.

Feelings before, during, and after i-TRT

Identified codes were "before-daily suicidal ideation; during-initially negative feelings; after-recognizing achievements; more confidence; recognizing the impact on others; apply strategies in context; and continued check-ins post-TRT". Before TRT C reported that she was constantly thinking of suicide, "there wasn't a day I didn't. I would sit with my family at meals and watch TV, and think about different ways to kill myself." During TRT, C's feelings were negative at first but changed over the sessions, "at first I hated it because it was just bringing up so many bad memories. But after the sessions, I realized it was doing good, so thought I might as well try it, and it helped me a lot." Feelings after TRT improved for C. "I felt a lot better, more self-confidence, and I realized my actions, and the effect it had on people." An example of the latter was "one of the things I used to think about was how my brothers would cope if their sister committed suicide ... a place was where my brothers would have to go past every day to go to school."

The program worker emphasized that it was important that contact with C continued after i-TRT, "I was still involved with C and doing small check-ins with her. It helped to keep establishing 'remember to use' certain skills, and techniques that had been helpful." Indications are then, that i-TRT needed follow-up to program completion to promote continuous safety through reminders of effective strategies such as safe place, reconnecting to strengths, relaxation techniques, and dealing with intrusions.

Challenges with i-TRT

Identified codes were 'triggering; the need for support; self-harm/attempted suicide ceased; gains outweighed risks; adapting materials; and support team in place first". Challenges with i-TRT were identified for the young person, program worker and the secure facility. As C noted "It was remembering some of the stuff I'd done. It got quite upsetting at times. However, the way the program worker responded appeared to be attuned to Cs needs. "The program worker I had was really good, she just hugged me. I'm a very contact person. I like to have human contact." The program worker also identified the risks of upset for C: "some of it could be upsetting" and it was important to "provide C with extra support at that time". The program worker went on to describe the specific reason for upset, it was when: "C had to draw out her experience (not a part of the TRT program), she did that extremely well but found it quite upsetting, and it triggered her back to the home situation. But then it was about saying, ok, use your safe place, and giving her the techniques to bring her back quite quickly", e.g. being present in the room. One serious consequence of upset was apparent in a care staff report to the program worker, i.e., "C went into a period of self-harm, where she tried to use a ligature, but we were quick to get back in and say, let's find out what that's all about. We got her to use the techniques again to manage that (safe place, dual attention, imagery and distraction).

Despite this experience, and being explicitly asked, C and the program worker both reported there were "no negative consequences, as TRT led to a dramatic reduction in suicide attempts." Likewise, the program worker reported there were no drawbacks with TRT for care and education staff, and the other young people in contact with C in the secure facility. Staffs were no longer having to respond to crisis incidents with C.

For the program worker and the secure facility challenges included "having to adapt the material and deciding which visualization techniques to use." The program worker also set this within a wider context of delivery, that is, "it's going to be different for each young person you work with."

Challenges for the facility focused on "embedding TRT into the wellbeing support team." Firstly, there was a need to "have more young people to undertake i-TRT" and secondly: "it's about making sure it's a quiet area and there is no disruption." Thirdly, "it might depend on the client group we have at the time". Finally, the program worker recommended "continued training and support for i-TRT to be implemented" and that it was "helpful to get together with secure facilities and see how it's going."

Program worker benefits

Perceived benefits from i-TRT were not only identified for C but also for the program worker. There were six codes indicating that i-TRT built onto the program workers existing knowledge and skills. These codes/benefits were:

- Increased awareness and understanding of trauma-

"Delivering i-TRT has given me a better understanding and reading through the material has increased my knowledge. You have more awareness of trauma and you know how trauma can affect them. That helped specifically in sessions with young people"

- Creating an emotionally safe environment-The program worker highlighted gains in "how to set up a more relaxed and comfortable environment to help the young person talk through some of the difficult issues they need to talk about"
- An increased range of techniques, i.e. "TRT gave me a better understanding of the range of techniques to use with C," including psychoeducation, safe place, and ways to process intrusions as well as the use of a script for both program worker and youth to follow in learning coping skills
- Learning how to negotiate TRT with young people-"Talking to the young person in terms they can understand." Increased knowledge of i-TRT was perceived as useful during referral meetings as "any trauma-related issues, we could be discussed in terms of using strategies from TRT to support young people," such as coping self-statement, imagery and breathing techniques.
- Focused report writing-"The report now included how C participated, the nature of her engagement as well as "what she covered in i-TRT, what was helpful" along with conclusions, and recommendations.
- Structure for talking to parents and staff about trauma- "I could talk quite well about i-TRT to parents. The program worker referred to giving feedback on the activities and progress C was making as well as suggesting to staff and parents which strategies worked best.

Benefits for managers, agencies, and parents

Identified codes were increased trauma knowledge; organizational change; share with community services; self-help; and social and economic gains for society. Perceived benefits were identified for secure facility managers, social program workers, and parents. Secure managers were thought to have increased their knowledge of trauma, "It gave the institution a better understanding of trauma" so it was more "up to speed with developments in trauma recovery." i-TRT also provided an intervention that enabled techniques to be transferred to the community setting *via* social work. "This young person is now in foster placement, and the techniques have been discussed to support C in the community" (safe place, positive coping statements, distraction, breathing etc.). The program worker also perceived gains for C's parent in terms of awareness of strategies that can help. "I think it was good for the parent to know the different techniques that C could do. It's beneficial for them to know she was coping and using these different techniques to manage." Finally, the program worker anticipated future benefits for the wider community. Society, for example, was imagined to gain economically and socially though C no longer having "police involvement and hospital emergencies." The program worker reasoned that "because C is more able and equipped to manage more difficult situations, she may not resort to self-harming and over-dosing." In short, it would seem for the program worker and C, TRT was part of generating a more hopeful view of the future.

Future use of i-TRT

The program worker rated 8 out of 10 for the likelihood of using i-TRT in the future. Identified codes were: beneficial; embedding in programs; and frequency of use. "I found it a good program and the young person I worked with benefitted from it. It's about how we feed that into our programs of work." The importance of frequent use of i-TRT was seen as essential to develop familiarity and discover how to deliver i-TRT in the most effective way. "It would need to be delivered regularly for program workers to get familiar with it and know the best way to run it. We usually do two sessions a week, but I think one session might be enough for some young people."

Advice for Secure Facilities

Identified codes were: build on quality of relationship; motivational engagement; strategies to help wider community; and choice/flexibility of programs. Different types of advice were given by the young person and program worker for using i-TRT in secure facilities. C focused on the quality of relationship with the program worker and how to motivate young people to engage in i-TRT. "The program is really good but it depends who does it. If I had someone else, I wouldn't have enjoyed it as much. With the stuff you talk about, it has to be someone you trust." C also reported that she was motivated to enable support to be provided to other young people. "i-TRT does help but it may not seem like it at first. In the end it's worth it. I'm going to see if I can get my district, my council to diagnose depression and trauma. I'm going to do a lot of research first. I think, getting diagnosed before your 16, your whole life could be saved." The program worker, in contrast, focused on having choice and flexibility within different types of programs to respond to the diversity and complexity of needs in secure care. "The ideal would be a mixture of brief exposure therapy and i-TRT. From my perspective, it's about having options to deliver different types of programs with young people with complex trauma."

DISCUSSION

This case study highlights the potential value of providing a trauma-specific program as part of suicide prevention to address a young person's psychological pain [28]. i-TRT, although not designed as a suicide prevention program, resulted in the cessation of self-harm, suicidal ideation, and suicide attempts and led to a lower level of institutional care (foster care). In addition, a range of perceived gains was reported by the program worker and adolescent. The highest rated gains were in the reduction of stress, increased self-confidence, and the avoidance of risks that triggered self-harm and suicide attempts. Prior to TRT, C had engaged in daily obsessive thoughts of suicide. Sessions involving brief exposure led to some emotional dysregulation, whereas later sessions (e.g. relaxation, systematic desensitization) involved C's experiencing empathy for others close to her with regard to the consequences of suicide. Similarly, adolescents in another secure facility in Scotland, many of whom were suicidal, reported reduced internal disturbance from the same program delivered on a group basis [43].

C's perceived progress was reported by the program worker and adolescent as an interaction of the secure residential context and i-TRT. The secure setting was seen as providing high levels of control, monitoring, and responsivity from care staff, especially the program worker. Watchfulness and rapid responding for emotional dysregulation, occurred not just during but also following i-TRT

delivery. Such social support and coping skill factors are potentially protective for suicidal adolescents [19]. In light of the emotional dysregulation, the importance of embedding a prevention program within a trauma and suicide aware environment cannot be overemphasized [28,45]. Although the secure setting provided a context to reduce the means of suicide, this was not eliminated, a finding highlighted in previous studies [10,46].

What could be referred to as person factors also appeared to be part of the process of perceived change [47]. C reported the ability to:

- create a compelling vision for the future,
- utilize coping skills to manage distressing emotions and intrusive thoughts
- develop a plan of action for a better future for herself and her family. C emphasized both her new appreciation of the impact of her suicide on family members as well as her shift from anticipating risk to focusing on what she wanted for her life. C also emphasized relational factors as part of the change process. A good quality relationship with the program worker included a high level of trust, being believed in, and enjoying the company of the program worker [48]. The program worker was described as "someone you could talk to, who would listen, and take you seriously." Such relational factors underpinning therapeutic success have been reported in the research for many years [49] and are as important, if not more so, in secure residential settings with suicidal youth.

In comparison to the relational factors identified by C., the program worker emphasized organizational factors for facilitating i-TRT and suicide prevention. Training and supervision in i-TRT and suicide prevention were seen as core for the program worker and care staff. Contact with staff from other facilities widened the learning of "what works." Attending to the organizational impact for both the creation of risk and prevention are also important factors for supporting suicidal adolescents [35].

As challenges for i-TRT, C identified the related issues of the quality of relationship with a program worker and an adolescent's motivation for change, whereas the program worker again identified organizational issues. The latter included the importance of frequent communication between program worker and care staff, close monitoring for signs of concern, and the capacity to respond quickly. The program worker noted that there needed to be sufficient numbers of young people receiving i-TRT in order to build program worker familiarity with the program. In turn, this was perceived as developing program worker judgment in program adaptation for different youth with complex problems. The importance of quiet spaces within busy environments was also highlighted. Finally, the program worker concluded there needs to be a sufficient range of programs available in secure facilities, such as suicide prevention and coping skills programs, in order to respond to the diversity and changing nature of young people's needs. Not surprisingly, managers in secure facilities have identified more strategic challenges such as overcoming a political context of competitive tendering for contracts, a lack of understanding of trauma for parents and agencies, and the need to reorganize facilities for trauma-informed program delivery [50,51].

Limitations

This was a single case study and, therefore, findings are exploratory and limited in generalizability in terms of client and intervention. The wider benefits identified were perceptions and, therefore, open to confirmatory bias, especially by the program worker, perhaps, who was invested in the treatment. Interviews were followed i-TRT and as such, there was no measure of stress levels, or how the youth felt before i-TRT. This kind of post hoc analysis ignores the malleability of memory. As the youth and program worker were both females, responses may not match that of male clients and therapists. The telephone interviews were limited to verbal and para-verbal analysis, with the omission of exploring congruence between non-verbal and verbal responses. With only two participants, a saturation of themes may not have been achieved. As other interventions and care occurred within the secure facility, there is no way of knowing if it was i-TRT that caused the decrease in suicidality, or any (or the combination) of the other interventions.

CONCLUSIONS

The current study was the first to analyze the outcomes of TRT delivered individually, for a suicidal youth in a secure residential facility in Scotland. Suicidal ideation ceased, as did suicide attempts, bar one incident, leading to a reduced level of care (foster care). For C., i-TRT was described as resulting in increased hope, motivation, knowledge, skills, and improved confidence. Indications are that i-TRT, a trauma-specific program delivered within a trauma aware secure environment, may be of value in supporting suicidal adolescents. Because of the cessation of self-harm, suicidal ideation, and suicide attempts, further investigation of i-TRT as part of suicide prevention in secure residential settings is warranted.

Recommendations for future research

Further research is needed to assess the safety and effectiveness of i-TRT with suicidal youth in secure residential facilities. The next step would be to conduct a quantitative effectiveness study in a larger sample. i-TRT needs to be evaluated as part of a context of support tailored to the needs of suicidal young people. Contextual and interacting factors for future research could include the quality of the relationship between the young person, program worker, and care staff; the impact of gender of the young person and program worker; what constitutes an effective suicide aware environment for i-TRT; and what are the effective features in close monitoring and responsivity.

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