Journal of Anxiety Disorders 68 (2019) 102154

Contents lists available at ScienceDirect

Journal of Anxiety Disorders

journal homepage: www.elsevier.com/locate/janxdis

Commentary

Getting effective intervention to individuals exposed to traumatic stress: Dosage, delivery, packaging, and profiles

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A B S T R A C T

There is strong evidence for the efficacy of empirically supported treatments (ESTs) for posttraumatic stress disorder (PTSD). However, treatment non-completion remains a considerable problem. Of concern with a high dropout rate is that Holmes et al. (2019) found that clients who attended more sessions improved at a greater rate and clients who completed all 12 sessions had the best outcomes. In addition to dropping out of treatment, there are a number of issues related to getting effective intervention to those exposed to traumatic stress. This commentary will discuss dosage and early treatment responders, delivery and packaging, and the need to go beyond diagnosis to build from the findings of Holmes et al. to foster the delivery of effective treatment.

As Holmes et al. (2019) point out in the Focus Article of this issue, there is strong evidence for the efficacy of empirically supported treatments (ESTs) for posttraumatic stress disorder (PTSD). In their study, the authors examined patterns of dose response for clients who complete all or part of a cognitive processing therapy (CPT) protocol. CPT is a treatment modality with a strong recommendation for the treatment of PTSD in adults from the American Psychological Association. However, as Holmes and colleagues also note, treatment non-completion remains a considerable problem. The results were consistent with previous research showing a high dropout rate, with 42% not completing the full course of treatment. Of concern with a high dropout rate is that the authors also concluded that clients who attended more sessions improved at a greater rate and clients who completed all 12 sessions had the best outcomes. In addition to dropping out of treatment, there are a number of issues related to getting effective intervention to those exposed to traumatic stress. This commentary will discuss dosage and early treatment responders, delivery and packaging, and the need to go beyond diagnosis to build from the findings of Holmes et al. to foster the delivery of effective treatment.

1. Dosage and early treatment responders

On one hand, individuals in the Holmes et al. (2019) study who completed all 12 sessions had the best outcomes. For example, from Table 2, the percentage of individuals who dropped out and who were below the clinical cutoff on the Posttraumatic Stress Disorder Checklist was 20.0% of those early, 38.1% mid, 47.6% late, and 65.7% who completed all sessions. Early drop out was defined as before session 4, mid-treatment as between sessions 4–8, end of treatment was after session 8, and then those who completed all 12 sessions. On the other hand, these same results show that many clients were able to achieve favorable outcomes without completing the protocol—they were "early responders". Moreover, the data from this report do not show how many had favorable outcomes early but choose to stay the course in treatment. Holmes et al. (2019) acknowledge the fact that clients were able to achieve favorable outcomes without completing the protocol and that this is consistent with the results of other studies (e.g., Szafranski, Smith, Gros, & Resick, 2017).

One important take home on the positive side, therefore, is that a small dose may work for some as an effective intervention. Research efforts are needed identify clinician friendly predictors of favorable outcomes at smaller dosages of psychosocial intervention and/or assessable predictors of those who might benefit from abbreviated protocols. Such abbreviated interventions have had success for other mental health issues and may be more palatable and/or more easily deliverable in certain situations, such as after disaster. Importantly, it may not be dosage at all but, instead, essential ingredients or mechanisms that may be different for different individuals.

2. Delivery and packaging

Research shows that there is not seamless translation from treatment protocols developed in controlled research environments to community settings. While many ESTs exist, the data suggest that many clients get something else (Beidas & Kendall, 2010). In terms of PTSD, exposure techniques have extensive evidence for efficacy with numerous randomized studies (Foa et al., 2009). Indeed, the ISTSS guidelines for treating PTSD recommend interventions, such as CPT, that include exposure as the "first line" of treatment (Foa et al., 2009). However, Borntrager, Chorpita, Higa-McMillan, Daleiden, and Starace (2013) found that while exposure

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https://doi.org/10.1016/j.janxdis.2019.102154

Available online 30 October 2019

sessions were the most common element of EST manuals for traumatic stress, they were used in less than a quarter of usual care cases. Many reasons for this exist and include therapist training, therapist anxiety, and concern that the therapeutic alliance may be harmed. For example, Becker, Zayfert, and Anderson (2004) surveyed licensed clinical psychologists about their use of exposure therapy for PTSD and found that 69% had not received any formal training in conducting exposure for PTSD and only 17% of indicated they used exposure to treat PTSD. Research on the delivery of components of therapy may help address this. Specifically, are there different ways to approach the packaging and delivering of exposure techniques that are more palatable to both therapist and clients?

Drawing from my first point, can existing protocols be modified into effective abbreviated protocols, emphasizing one or more of the core mechanisms of action? That is, could CPT of 12 sessions be packaged into two to three abbreviated protocols of 4 to 6 sessions? These abbreviated protocols could still be combined to deliver a full protocol. Such an idea for packaging the delivery of interventions for PTSD is similar to a treatment distillation and matching model that fosters the clinician finding treatment components with evidence for favorable treatment outcomes that map onto the individual needs of their clients (see Chorpita & Daleiden, 2009).

3. Beyond diagnosis to develop effective treatment profiles

PTSD expression is highly diverse. For example, Kerig (2019) recently developed a model of posttraumatic risk-seeking which emphasizes the diverse expression of the consequences of exposure to traumatic stress both across individuals and within individuals over time. The point here is that an individual client's need for effective intervention components will depend in part on the major presenting problem, which may differ not just across individuals but within individuals across time depending on where they are in their evolution of symptoms following trauma (or multiple traumas). PTSD is not a static thing—its expression undergoes developmental progression that can be largely unique to each individual.

Network-based models of PTSD are emerging as a theoretically compelling alternative to traditional latent factor-models of diagnosis and may help emphasize these symptom progressions. A traditional view, characterized by a diagnosis, is that PTSD is a latent construct comprised of latent symptom clusters (e.g., re-experiencing, hyperarousal) that are comprised of observable symptoms (e.g., exaggerated startle response). A network approach emphasizes patterns of associations between symptoms with the aim of identifying "central" symptoms and critical between/among-symptom associations. For example, within a symptom network, some symptoms may be more critical or "central" to the network in that they are related to or serve to influence a larger number of other symptoms (Weems, Russell, Neill, & McCurdy, 2019).

The network approach can also be used to identify patterns of associations between symptoms and other outcomes (e.g., posttraumatic risk-seeking, dissociation, suicidality) with the aim of identifying "central" outcomes and reactions and critical symptom to "other reaction" associations. The network model of PTSD fits with a diverse outcomes perspective whereby a cascade of symptom associations emerge over time, leading to one set of symptoms for some (such behaviors then being "central" to the outcome network for those individuals). The network approach also provides an opportunity to identify related subgroups of symptoms (or specific "central" symptoms) associated with the various neurological, functional, and structural networks implicated in PTSD (Weems et al., 2019). In terms of functional brain activation, PTSD generally can be characterized by a weak or hypoactive default mode network (resting state activation) and an executive network (the emotion regulation executive control connections) that is unable to put an emotional regulation break to an overactive or strongly connected salience network (the threat identifying functional connections; see Weems et al., 2019 for discussion).

The effects of trauma on brain network function emerge over time and may have corresponding symptom expression changes (Weems et al., 2019). For example, a cascade of symptoms following trauma may begin with uncontrollable hyperarousal leading to self-harming in order to control inefficient executive control of physiological arousal. Alternatively, or later over time, hyperarousal may lead to emotional numbing with altered or overactive default mode numbing of emotion; in this case, risky behavior serving to generate "feeling" after experiencing numbness. These symptom associations may cascade over time and suggest that various components of ESTs may have differential effect on these functional connections at different points in an individual's symptom progression following trauma. This, in turn, highlights the potential to address individual client's predominant symptom expression with targeted treatment components.

Research efforts are needed identify clinician friendly predictors of favorable outcomes at smaller dosages of psychosocial intervention and/or assessable predictors of those who might benefit from abbreviated protocols. Drawing from my first two points, research efforts are needed to: a) identify favorable brain function changes to specific psychosocial intervention techniques, and, then b) identify clinician friendly predictors of those who show favorable brain function changes to specific psychosocial intervention techniques. Emerging research has suggested that this may be possible. For example, Garrett et al. (2019) found that a significant decrease in amygdala activation to emotional faces was associated with improvement in symptoms of dissociation but not PTSD and that improvement in symptoms of PTSD was associated with decreasing activation to emotional faces in the posterior cingulate, mid-cingulate, and hippocampus. Integrating and understanding of procedures that effect functional networks may identify novel techniques or serve to better package and deliver existing techniques to address symptoms.

4. Conclusion

Holmes et al. (2019) note that the timing of written account (i.e., the main exposure component of CPT) was associated with the majority of treatment discontinuation. They point out that patterns of drop out may have been different given that new versions do not require this and note the issue of therapist experience. My perspective is that the findings on dosage and early treatment responders suggest that, in fact, portions of therapy can be effective and that work on delivery and packaging is needed to match therapist and client characteristics to essential ingredients/mechanisms. Moving beyond the diagnosis to profile models and network models of symptom expression as well as the neuro-functional correlates of traumatic stress exposure may facilitate building on findings such as those of Holmes et al. to foster the delivery of effective treatment to those in need.

Acknowledgements

Dr Weems is supported by grants from the National Institute of Justice award: NIJ 2019-R2-CX-0013 & Office on Violence against Women Award 2017-SI-AX-0004; the State of Iowa; Child Support TrainingBOC-18-003 & Service TrainingFOSU- 20-001 - prime sponsor HHS-US Department of Health & Human Services; and the Youth Policy Institute of Iowa.

References

Becker, C. B., Zayfert, C., & Anderson, E. (2004). A survey of psychologists' attitudes towards and utilization of exposure therapy for PTSD. *Behaviour Research and Therapy, 42*(3), 277–292.

Beidas, R. S., & Kendall, P. C. (2010). Training therapists in evidence-based practice: A critical review of studies from a systems-contextual perspective. *Clinical Psychology Science and Practice, 17*(1), 1–30.

Borntrager, C. F., Chorpita, B. F., Higa-McMillan, C. K., Daleiden, E. L., & Starace, N. (2013). Usual care for trauma-exposed youth: Are clinician-reported therapy techniques evidence-based? *Children and Youth Services Review, 35*(1), 133–141.

Chorpita, B. F., & Daleiden, E. L. (2009). Mapping evidence-based treatments for children and adolescents: Application of the distillation and matching model to 615 treatments from 322 randomized trials. *Journal of Consulting and Clinical Psychology, 77*(3), 566–579.

Foa, E. B., Keane, T. M., Friedman, M. J., & Cohen, J. A. (Eds.). (2009). *Effective treatments for PTSD: Practice guidelines from the International society for traumatic stress studies*. New York: Guilford Press.

Garrett, A., Cohen, J. A., Zack, S., Carrion, V., Jo, B., Blader, J., ... Agras, W. S. (2019). Longitudinal changes in brain function associated with symptom improvement in youth with PTSD. *Journal of Psychiatric Research, 114*, 161–169.

Holmes, S. C., Johnson, C. M., Suvak, M. K., Sijercic, I., Monson, C. M., & Stirman, S. W. (2019). Examining patterns of dose response for clients who do and do not complete Cognitive Processing Therapy. *Journal of Anxiety Disorders, 68*(c).

Kerig, P. (2019). Linking childhood trauma exposure to adolescent justice involvement: The concept of posttraumatic risk-seeking. *Clinical Psychology Science and Practice*. https://doi.org/10.1111/cpsp.12280.

Szafranski, D. D., Smith, B. N., Gros, D. F., & Resick, P. A. (2017). High rates of PTSD treatment dropout: A possible red herring? *Journal of Anxiety Disorders, 47*, 91–98. https://doi.org/10.1016/j.janxdis.2017.01.002.

Weems, C. F., Russell, J. D., Neill, E. L., & McCurdy, B. H. (2019). Annual research review: Pediatric Posttraumatic Stress Disorder from a neurodevelopmental network perspective. *Journal of Child Psychology and Psychiatry, 60*, 395–408.