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FROM THE FIELD

Integrated Brief Intervention for PTSD and Substance Use in an Antepartum Unit

Neeta Shenai[1,2] · **Priya Gopalan**[1,2] · **Jody Glance**[1,3]

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Abstract
Purpose To evaluate the efficacy of a brief education session affecting patient perspectives on follow up care of substance use and trauma treatment in pregnant women admitted to a medical hospital. *Description* Participants (N = 31) were recruited from the antepartum unit at Magee-Women's Hospital at the University of Pittsburgh who had current substance use and history of trauma. A voluntary individual educational session was offered that discussed the diagnosis and treatment of substance use and trauma, fundamental coping skills, and local resources. Utility of the session, knowledge of PTSD, and barriers of care were evaluated through a pre- and post- session questionnaire. *Assessment* All participants found the session improved their knowledge of PTSD, substance use, safe coping skills, and increased their likelihood of pursuing further follow up treatment. *Conclusion* Brief educational interventions that are integrated in the medical hospital are found to be useful by patients and reported to influence their decision to seek further treatment. Further studies are needed to analyze the long-term outcomes of brief interventions.

Keywords Trauma · PTSD · Substance use disorders · Substance use · Seeking safety · Integrated care · Consultation-liaison · Perinatal psychiatry

Significance

Integrated care models have shown to improve follow up care for psychiatric illness. Data from our pilot study supports feasibility of screening and education of PTSD and SUDs in the antepartum unit.

Introduction

Pregnancy is a critical period for women afflicted with psychiatric illness. For women with posttraumatic stress disorder (PTSD) and substance use disorders (SUDs), the perinatal period is a time of both great risk and opportunity for change. Compared to the general population of women, the prevalence of PTSD rises from 4–5% to 6–8% in the pregnancy with women in urban, predominately public-payer sites at higher risk of increase symptoms (Seng et al. 2010, 2011). By contrast, comorbid SUDs decrease steadily as pregnancy progresses with resumption of use following childbirth (Substance Abuse and Mental Health Services Administration, Office of Applied Studies 2009). Data from 2002 to 2007 show alcohol use was lowest in women in their third trimester of pregnancy (6.2%) compared to women who were not pregnant and had no children at home (63%) (Substance Abuse and Mental Health Services Administration, Office of Applied Studies 2009). These statistics suggest pregnancy is a motivating factor for change.

Both PTSD and SUDs in pregnancy can lead to higher rates of obstetric complications and poorer neonatal outcomes (Seng et al. 2010; Havens et al. 2009). Preterm birth, lower birth weight, neonatal abstinence, and neurodevelopmental delays are associated with illicit drug use (Havens et al. 2009). Pregnancy inherently causes alterations in the hypothalamic-pituitary-ovarian (HPO) and hypothalamic–pituitary–adrenal (HPA) axis subsequently affecting mood, sleep, and cognition with the combined effects

✉ Priya Gopalan
gopalanpr@upmc.edu

[1] Western Psychiatric Institute and Clinic, University of Pittsburgh Medical Center, Pittsburgh, PA 15213, USA

[2] 3520 5th Ave; Lower level suite 1, Pittsburgh, PA 15213, USA

[3] 3501 Forbes Ave, 9th floor, Pittsburgh, PA 15213, USA

possibly intensifying the expression of PTSD symptoms (Vermetten and Bremner 2002). Active PTSD symptoms could be associated with a higher risk of ectopic pregnancy, spontaneous abortion, hyperemesis, and preterm delivery (Rogal et al. 2007; Seng et al. 2001). Comorbidity with both disorders carries higher rates of suicide attempts, suicidal thoughts, and illness severity resulting in poorer psychosocial functioning (Moylan et al. 2001; Harned et al. 2006).

Available research on brief interventions for substance use in pregnancy shows promising results on decreasing drug use (Farr et al. 2014). Najavits developed an evidence-based treatment manual, "Seeking Safety: A Treatment Manual for Trauma and Substance Use," to address both PTSD and SUDs and has been found to be effective in numerous settings with measurable improvements in functioning and coping skills (Najavits 2002). We adapted this manual to a brief session targeting women in an antepartum medical unit to determine how patient perspectives to outpatient follow up changed with education of each disorder.

Materials and Methods

Participants

Participants included women admitted to the antepartum unit at our women's hospital for methadone conversion, buprenorphine dose adjustment, or detoxification from benzodiazepines or alcohol with a history of at least one lifetime traumatic event. Participation was voluntary. The study was approved by our institution's Quality and Research Board.

Study Design

We utilized a simple interrupted time series intervention design. Participants were identified by the unit social worker through admitting diagnosis and trauma screen. The trauma screen was adapted from the Trauma History Questionnaire (THQ), which is a validated 24 item self-report used to assess types of traumatic events experienced or witnessed (Hooper et al. 2001). Participants were recruited from November 2014 to July 2015. We did not have access to medical records of those participants who declined.

Those identified were offered an individual brief session which utilized handouts from "Seeking Safety." The structure of the session included discussion of diagnosis and treatment of PTSD and substance use disorders, comorbidity, safe coping skills, and available resources. In the "What is PTSD" handout, specific symptoms of PTSD were reviewed and participants had the opportunity to assess any symptoms they were experiencing. Through "The link between PTSD and SUD" handout, participants examined the high comorbidity and cycle of how each disorder influenced the other. Lastly, in the "Safe coping skills" handouts, participants discussed the coping skills they have successfully used and which they would like to practice in the future.

The session lasted approximately 20–30 minutes and participants had the opportunity to ask questions about the material. Participants kept the handouts from "Seeking Safety" and were provided a list of local resources including dual diagnosis clinics, women's shelters, and 24-h crisis lines. As the session was standardized, the same intervention was delivered to each participant, and by one individual (i.e., the primary author). Having one person administer the intervention helped to ensure the fidelity of the intervention between patients.

Outcomes Measured

Types of trauma experienced, barriers to care, knowledge of diagnosis of PTSD and substance use disorders, and efficacy of the session were measured through a pre- and post- session questionnaire and trauma screen.

Results

Fifty-one patients were identified by the social worker and 31 agreed to participate in the session. The most common reasons for non-participation included physical complaints from withdrawal such as nausea or fatigue, redundancy of information through prior treatment, or the patient was out of the room for testing. Though 39% (N = 20/51) of patients were not able or declined participation, the integrated setting likely reached a larger breadth of patients, including those who may not readily utilize outpatient psychiatric services.

We performed an analysis of barriers to care to better understand challenges to follow up treatment (Table 1). Transportation and money were reported as the most common barriers to treatment. This is especially significant in this population given the daily and weekly dosing of methadone and buprenorphine respectively. Negative social supports, fear of treatment, and time commitment were reported to a lesser extent. None of the women reported that they thought absence of a problem as a reason for not pursuing

Table 1 Barriers to care

Transportation	14
Money	11
Time commitment	6
Privacy concerns	1
Fear of treatment	4
Absence of problem	0
Negative social supporters	5
Other	3

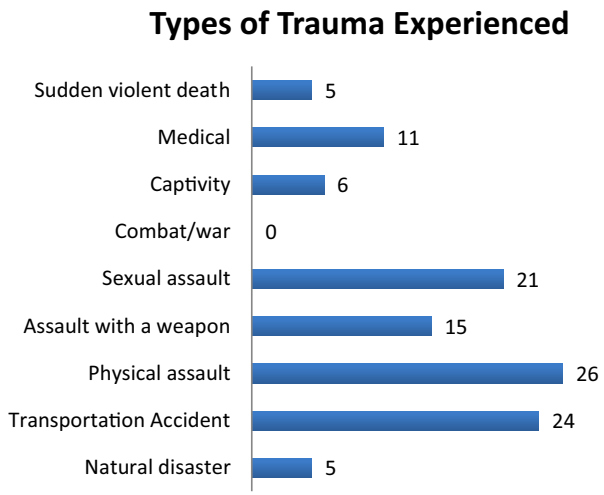
treatment, which shows this is contrary to common misperceptions of this population. All participants reported the session helped influence their decision to further pursue treatment or indicated that they were already engaged in treatment (23%; N = 7/31).

An overwhelming majority of women indicated that they had experienced at least two distinct types of trauma implicating the possible higher prevalence of complex PTSD in this population. Data from the trauma screen showed that transportation accidents (N = 24), physical assault (N = 26), and sexual assault (N = 21) were the most commonly experienced traumas (Table 2). Despite the high prevalence of multiple traumas, 10% (N = 3/31) of participants were in treatment for both PTSD and SUDs perhaps implying the need for dual treatment to obtain better outcomes.

All participants reported that the session was overall helpful and improved their knowledge of the diagnosis and treatment of PTSD. Twenty-nine out of thirty-one participants felt that the session increased their knowledge of the diagnosis and treatment of substance use disorders and safe coping skills. Overall, the sessions were well received by participants and perceived to be useful shown by comments such as "I am very excited to find out about PTSD and the knowledge that I do have a lot of the symptoms." This comment and data point to the utility of brief individual sessions to aid the process of recovery.

Regarding knowledge of the disorder, prior to our intervention, 23% (N = 7/31) of women reported that they had no prior knowledge of the diagnosis and treatment of PTSD. Eight out of thirty-one women either did not know or did not think there was a link between PTSD and substance use. 77% (N = 24/31) of women knew that PTSD is classified as an anxiety disorder according to DSM-IV and 94% were able to identify the symptoms of PTSD. On the post session questionnaire, all of the participants were able to classify the symptoms of PTSD and appreciate the link between PTSD and SUDs. 90% (N = 28/31) of participants indicated that they felt receiving information on diagnosis and treatment of PTSD, SUDs, safe coping skills, and resources would be useful.

Table 2 Types of Trauma experienced



Discussion

Studies looking at psychiatric illness in obstetric settings show that large numbers of women with psychiatric and substance use disorders are undiagnosed and untreated (Kelly et al. 2001). PTSD similarly is highly prevalent in obstetrical settings and largely unaddressed in the medical hospital (Gelaye et al. 2017). Available studies in pregnancy focus on the impact of these interventions on SUDs with minimal focus on treatment of trauma despite the high comorbidity and complexity in treatment. Brief interventions for SUDs have efficacy comparable to more intensive treatments (Nilsen 2009; Chang et al. 2000). A paucity of data on the effects of integrated brief interventions in pregnant women with SUDs and a history of trauma is further limited by the ethical implications of randomization in pregnancy, multiple confounders, and small sample sizes. For the physician or other health care provider, the inpatient obstetrical unit is an ideal setting for brief interventions targeting both trauma and SUDs.

Studies that analyzed psychological and educational interventions on the effects of alcohol consumption in pregnancy showed mixed results (Stade et al. 2009). Four randomized studies examined interventions ranging from 10 to 60-min motivational interviewing sessions with follow-up at each prenatal visit. The results are limited by small sample size and high risk of bias (Chang et al. 2000; Stade et al. 2009). Wilton et al. examined differences in telephone versus in-person brief intervention in reducing the risk of alcohol exposure in pregnancy and found that both methods reduced alcohol use and increased use of contraceptives (Wilton et al. 2013). A comparison study analyzing the differences in infant outcomes with and without specific substance use treatment found that infants were less likely to have low birth weight or pre-term delivery when mothers were engaged in substance use treatment in pregnancy (Sweeny et al. 2000). Brief interventions in pregnant women with SUDs show promising results in reducing substance use and improving fetal outcomes.

To our knowledge, this is the first study investigating the application of a brief educational intervention in an integrated inpatient setting for pregnant women with SUDs and a history of trauma. Moylan et al examined the psychosocial functioning and psychiatric illness profile in pregnant women diagnosed with opioid or cocaine dependence with and without PTSD. Results suggested that pregnant women

with PTSD had higher psychiatric illness severity including higher rates of prior suicide attempts compared to those without PTSD (Moylan et al. 2001). Another study used secondary analysis to examine the relationship between trauma history, PTSD, coping, and smoking, found that pregnant smokers had higher rates of lifetime PTSD and were more likely to use other substances to cope compared to nonsmokers (26% vs. 5%) (Lopez et al. 2011). Hien et al conducted a multi-site randomized trial in women comparing twelve sessions of Seeking Safety to a health education group and found substance use outcomes did not change over time. However, both interventions were associated with reduction in PTSD symptoms (Hien et al. 2009). As pregnancy can be a period of high motivation for change as well as increase in psychiatric symptom burden, further studies are needed to guide clinical practice.

In our population, all women reported multiple lifetime traumatic experiences and many women expressed relief that their symptoms were suggestive of PTSD. Women experienced more logistical barriers to care such as difficulty with transportation and money, which highlights a lack of access to mental health services rather than a lack of desire for treatment. All participants felt the session improved their knowledge and indicated education on the diagnosis, treatment, coping skills, and resources were beneficial. Additionally, all participants felt the session increased their likelihood of pursuing further dual treatment, illustrating the value of education using brief sessions in the medical setting.

Our study had several limitations including a small sample size and possibility of response bias. We did not have access of medical records for those participants who declined, thus could not perform a sensitivity analysis. We did not track PTSD symptoms, which could provide additional data on more specific treatment targets in this population. Further, given the design of the study, we did not gather data on the short-term outcomes of the session. Specifics of treatment participants may have been engaged in at the time of the intervention were not assessed. In the future, follow-up phone calls after one month with a short questionnaire could be helpful to assess retention of knowledge, follow up rates to treatment, and barriers to care. Based on results of this data, establishing programs for brief sessions in the medical setting is an appropriate time to provide PTSD and SUD education. Data from the post questionnaire showed that even for women in acute withdrawal the intervention led to knowledge gained of each disorder.

Conclusion

"Seeking Safety" can be effectively adapted to a brief session in the medical setting and found to positively influence the decision for further treatment. As data has shown women reduce substance use in pregnancy, interventions during this period potentially could have more long-lasting changes. Integrated care models have proven themselves to be a cost-effective way of improving adherence and outcomes for treatment of psychiatric conditions such as depression (Katon and Seelig 2008). The antenatal care setting provides the ideal opportunity for screening and intervention.

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