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ORIGINAL ARTICLE

Mindfulness Training as an Intervention for Substance User Incarcerated Adolescents: A Pilot Grounded Theory Study

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Mindfulness-based treatment for adolescents is a clinical and research field still in its infancy. Literature is needed to address specific subclinical populations to expand this growing field. Further, minimal literature addresses the process of teaching mindfulness to adolescents. The current study investigated how to effectively teach mindfulness to 10 incarcerated adolescent substance users ($N = 10$) in an urban California detention setting. A grounded theory approach was used to collect and analyze interview data over a 1-year period during 2011 and 2012 in order to develop an initial theory for teaching mindfulness to incarcerated adolescent substance users. Implications, limitations, and future research are discussed.

Keywords: mindfulness, substance abuse, incarcerated adolescents, juvenile offender, substance use, alcohol abuse

INTRODUCTION

There is a significant need for substance abuse¹ interventions for juvenile offenders. There were, for example, approximately 167,000 drug violations among juveniles in the United States in 2009 (Kroll & Siskind, 2012). Furthermore, the number of cases placed on probation increased 27% from 1983 to 2009 (Lively, 2012) and the daily use of illegal substances such as marijuana for 12th graders is 1 in 15, the highest recorded in the past 30 years (Johnson, O'Malley, Bachman, & Schulenberg, 2012).

There are some evidence-based interventions targeted toward juvenile offenders that have been shown to reduce recidivism, substance use, and behaviors associated with delinquency (Gruen, Kim, & Shover, 2008). Multisystemic family therapy (MSFT; Liddle et al., 2001) targets substance-abusing adolescents and their families. Research on MDFT has been conducted since 1985 and suggests that the intervention significantly reduces substance use among adolescents (Liddle et al., 2001; Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008; Rigger et al., 2013). Further, Multisystemic Therapy (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009), another evidence-based multiple system approach, has been shown decrease substance use and behaviors often associated with substance use such as delinquency and incarceration (Henggeler et al., 2009; Schaeffer & Borstein, 2009). Although the above two interventions have a prolonged history of evidence, they require a substantial amount of resources (such as prolonged clinical training with noncriminal cases) that juvenile detention facilities and the families of incarcerated adolescents often do not have. Given the lack of financial resources, and because adolescent substance use interventions that do not require such resources (e.g., Motivational Interviewing) have shown limited and mixed efficacy with adolescents (Barnett, Sisson, Smith, Koldbach, & Sprague, 2012; Dine, Rigg, Langenbach, Oldham, & Brown, 2000; Mason, Palen, Zickler, & Speer, 2009), there is a strong need for efficacious substance use

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The journal style follows the category *substance abuse* as a diagnostic category. Substances are used or misused. Living organisms are and can be about 100% human.

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TITLE

- Acts as a description of the work
- Tells the reader what the researcher(s) investigated

ABSTRACT

- Summarizes the major sections of the article
- Helps readers determine if the article is appropriate for an assignment and/or likely to help them answer their research question(s)

INTRODUCTION

- Explains the relevance of the topic
- Summarizes the field's current understanding of the problem being investigated
- Identifies gaps in the current understanding and indicates which of these the study tried to fill
- Notes the general approach the author(s) took and gives a rationale for the approach
- Often includes a statement of purpose noting what the researcher(s) hoped to discover
- Sometimes includes a hypothesis identifying what the researchers thought they would find

METHODS

- Expands on the general approach identified in the introduction
- Explains how the study was carried out
- FREQUENTLY ANSWERS:
 - Who were the subjects in the study?
 - When and where did the study take place?
 - What occurred during the study?
 - What data was collected?
 - How was data collected?
 - How was the data analyzed?

RESULTS

- Reports the findings or results of the study

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see critical factors in treatment delivery within this population (Ginsburg, Mann, Rosen, & Winters, 2002).

The Current Study

The primary focus of the current study was to develop (1) a preliminary conceptual model for teaching mindfulness to incarcerated adolescent substance users and to conceptualize how the practice of mindfulness may affect the lives of the target population. This was done using a grounded theory approach, a qualitative methodology of developing theory based on participant opinions, perspectives, and experiences (Corbin & Strauss, 2007; Strauss & Corbin, 1990). Our goal was to develop a conceptual framework culminating in two hypotheses that could be tested empirically in future research: (1) that mindfulness introduced with clear objects and a short period of time may increase client receptivity, and (2) that mindfulness-based interventions have the potential to reduce substance use and recidivism among substance using juvenile offenders. Further, we wanted to investigate effective teaching methodology in order to provide clinicians who work with justice-involved substance using adolescents and similar populations a framework for helping their clients via mindfulness practice.

METHOD

Qualitative research methods are particularly well suited to uncover the meaning participants assign to their experiences (Polkinghorne, 1991). Qualitative methods are also effective for generating conceptual frameworks that can be used to develop theory, future research, and clinical interventions (Strauss & Corbin, 1990). Therefore, we chose to use the grounded theory approach (Corbin & Strauss, 2007; Strauss & Corbin, 1990), a method that involves collecting interview data on a particular topic, developing initial codes, refining codes into themes (open coding), identifying a central phenomenon (axial coding), and developing a theoretical framework from which a process occurs (selective coding). The grounded theory approach was chosen given that no studies were found that progress the process of teaching mindfulness to youth, let alone incarcerated adolescent substance users. Further, we felt that an initial theory would be needed in order for it to be tested in future research.

been researched with adults that may not be applicable to incarcerated adolescents. Thus, we felt it necessary to use this research as a platform to advocate for the perspectives and experiences of the participants themselves.

Participants

Research participants were recruited from a larger study investigating the efficacy of mindfulness on locus of control, impulsivity, and emotion regulation (Himelein & Saul, 2012). Participants were incarcerated male adolescents at a California juvenile detention camp who were court-mandated to attend substance use treatment and consent criteria for mandated substance user treatment is determined by (a) being under the influence while committing a crime, and/or (b) the nature of the crime was drug-related. A total of 10 participants consented to take part in this grounded theory study. The participants ranged in age from 15 to 18 and self-identified ethnically as, Latino ($n = 4$), Pacific Islander ($n = 2$), Caucasian ($n = 2$), African American ($n = 1$), and Hispanic ($n = 1$).

Procedure

The adolescents who participated in this study were court-mandated to participate in the detention camp's drug and alcohol psychotherapeutic intervention. As part of the larger study (Himelein & Saul, 2012), participants were randomly assigned to either a treatment condition in which they received mindfulness training in individual therapy, or to a control condition in which they received therapy as usual without mindfulness training. Participants who agreed to participate in the study and who were randomly assigned to the treatment condition were asked prior to participation if they would be willing to be interviewed about their experiences learning mindfulness. The research ethics committee at Sofia University approved the current study. Because of the time of incarceration youth are worth of the court, the court's presiding juvenile judge consented to the research. The adolescent participants' work at the facility, limited about the nature of the study and assent was obtained.

Mindfulness Meditation

Participants who consented to the study were taught 6 mindfulness-based exercises once a week for 10 to 15-week period. Only 10 to 15 weeks were allotted for treatment given the nature of the substance user program at the detention camp and the time at which participants were released. These meditations included: (1) counting the breaths (12 mindfulness of the breath), (2) the body scan, (4) deep breathing, (5), a body scan in which participants were asked not to move, and (6) an informal, cognitive-based, acronym mindfulness technique entitled S.T.I.C. (e.g., stop, take a breath, imagine the future consequences, and choose). Mindfulness exercises lasted from 2 to 20 min and participants were encouraged but not mandated to practice between sessions. Mindfulness sessions were taught by two facilitators each with 150 or more

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TABLE 1. Mindfulness exercise protocol

Session	Mindfulness Exercise	Main instruction (in brief)
1	Introduction to the practice of mindfulness in the detention camp	Mindfulness of the breath: 3 to 5 min.

years of meditative experience (including daily meditation practice and numerous silent retreats). Table 1 summarizes the order and duration in which mindfulness techniques were presented and practiced.

Data Collection

Data collection consisted of semi-structured interviews. Semi-structured interviews were conducted upon completion of the mindfulness training and ranged in time from approximately 10 to 20 min. Two central research questions guided data collection: (1) what are the most effective methods for teaching mindfulness meditation to incarcerated adolescent substance users? and (2) what is the impact of mindfulness meditation on the lives of incarcerated adolescent substance users?

Participants were queried about their experiences with the mindfulness activities, if they thought they were beneficial, and aspects of the mindfulness meditations that may shed light on how to approach meditation with the target population. Table 2 summarizes the semi-structured interview protocol.

Interviews were audio-recorded and stored on the lead author's computer in a password-protected file for security purposes. All interviews were assigned participant numbers and stripped of any identifying information prior to transcription. The first, third, and fourth authors transcribed all interview verbatim. Upon completion of transcription, our research team met for data analysis.

Data Analysis

Keeping in alignment with Corbin and Strauss's (2007) grounded theory approach, we analyzed our data through three distinct methods of coding: open coding, axial coding, and selective coding. First, each author used verbatim transcriptions of all of the interviews and developed initial codes, refined those codes, and grouped those codes

into themes to identify the major categories in the data (e.g., open coding). Our research team constructed a number of codes to compare and contrast our codes and themes until we came to a group consensus of the major categories that represented the participants' experiences with learning and practicing mindfulness meditation. Next, each author identified a central phenomenon, a major theme or group of themes from which the majority of the data seemed to gravitate around (e.g., axial coding). Finally, our research team conceived and constructed a "map" and flow chart of the underlying processes of the central phenomenon (e.g., selective coding). From this we were able to derive a pilot theory of an effective methodology for teaching mindfulness and how it may be beneficial to incarcerated adolescent substance users.

RESULTS

Results of this study include major themes from the open coding, the identified central phenomenon from axial coding, and the major pivot points associated with teaching mindfulness to incarcerated adolescents from selective coding.

Open Coding: Major Themes

Five major themes were identified from the data. These included enhanced psychological mindfulness and well-being, development of worldview, novel experiences, challenging experiences, and future use of mindfulness. Table 3 illustrates the five major categories and subcategories that comprise each category.

Because our research questions focused primarily on the process of how to teach mindfulness and secondarily on the experience and impact it had on participants' lives, full quotes for each major category and subcategory are not presented in this manuscript. Rather, the quotes were collated around the initial theory developed within this research, which is presented in the section on selective coding.

Axial Coding: Central Phenomenon

After identifying the major themes within the data, it became clear that participants most often referenced the major theme of enhanced psychological mindfulness and well-being. Most data revolved around this theme in some form. We identified this theme as the central phenomenon, with causal conditions influencing the phenomenon of enhanced psychological mindfulness and well-being, and the

TABLE 2. Questions asked during semi-structured interview with incarcerated adolescents

1. Who was your overall experience with the mindfulness meditations you learned? Were they helpful? Not helpful? If so, how?
2. How long do you think is a good amount of time to teach mindfulness meditation to incarcerated youth?
3. How would you explain what mindfulness is to other youth in the detention camp?
4. Do you feel that mindfulness could help you obtain from sleep and help you stay out of jail once released? If so, be specific.
5. What stands out most about your experience learning and practicing mindfulness?
6. Is there anything else about your experience I haven't covered with these interview questions that you'd like to add about your experience? If yes, what?

Table with 2 columns: Main Categories and Subsections. Includes: Enhanced Psychological Mindfulness and Well-being, Development of Mindfulness, New Experiences, and Future Use of Mindfulness.

impact that this experience may have on the lives of the participants as positive consequences. Selective Coding: Teaching Mindfulness to Incarcerated Adolescent Substance Users. The result of our selective coding of the data was an initial theory on how to approach the participants in this study with the teaching of mindfulness and how mindfulness interventions may be beneficial in their lives.

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Already know I was going to do something, drink, or something... I used ETC. I think I had a lot of trouble with that, and I was like, "damn man, it's good to see you." But at the same time it was really hard... "I was like, 'uh, I'm not sure, um, doing me, I'm like, 'uh, I'm not sure...'"

DISCUSSION

Creswell (2007) suggests that the end result of a grounded theory is a substantiated level theory with a flow chart and/or a "story" illustrating the conceptual framework of the theory. Therefore, the culmination of the data presented above is summarized in the following data-driven passage developed by the authors of this study.

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Struss & Corbin, 1990. In alignment with such methods, our research team continued to interview participants to discuss the implications of the results and possible test hypotheses. This resulted in the identification of two hypotheses.

Study Implications: Although this study is in its infancy, it is not without limitation. Grounded theory approaches such as Corbin and Strauss's (2007) often employ samples sizes considered extremely large by qualitative research standards (30-60 participants).

CONCLUSION

Although there are limitations to this study, the results suggest there is a conceptual framework for the teaching of mindfulness to incarcerated substance-abusing adolescents. Supporting past research, the data also suggests that mindfulness is a feasible intervention for adolescent inmates in general (Black et al., 2009) and incarcerated youth specifically (Hemlestein et al., 2012c, 2012b).

Declaration of Interest: The authors report no conflicts of interest. The authors also are responsible for the content and writing of the article.

RESULTS continued

- Frequently organized around charts and/or tables
Indicates the statistical significance or lack of statistical significance of the results

DISCUSSION

- Places the work in context of the broader field
Indicates how the results advance, contrast with, or clarify previous ideas
Explains whether or not the results are consistent with other studies and/or dominant thinking in the field
Explains how the results support or do not support the hypothesis or hypotheses
Uses the results to provides a clear (if tentative) answer to the research question(s)
Highlights strengths or unique features of the study
Indicates limitations or weaknesses in the study design or implementation
Explains how the results can be applied in the field, often through change in policy or practice
Suggests areas for further research

CONCLUSION

- Summarizes the major findings of the article
Sometimes included as the last paragraph of the discussion section

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