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Original contribution

Depression and treatment with inner city pregnant and parenting teens

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Summary

Background: Between a quarter and half of pregnant adolescents are estimated to be depressed (Beardslee et al. 1988). Two recent open clinical trials found significant drops in depression levels among pregnant and newly parenting inner city teenagers after 12 weeks of Interpersonal Psychotherapy modified for pregnant teenagers (Miller et al. submitted). The current study addresses the nature of and contributors to participants' depression, and the active ingredients in their healing.

Method: Qualitative analyses of therapy sessions, clinical notes and post hoc interviews of clinicians were integrated with questionnaire data.

Results: The most common symptoms of participant depression ($n = 80$) were anger/irritability and sadness and the cluster of depressive symptoms with the greatest variance was characterized by shame and guilt. Participants attributed symptoms of depression to feeling trapped or wronged, when family members were sad or rejecting and when the symptoms functioned to help participants meet their needs. Experiences associated with symptom relief were validation of pregnancies, successful use of self-advocacy and boundary setting skills and recognition of passage through important transitions. Support from participants' mothers was instrumental.

Conclusions: Interpersonal contexts may be pivotal in contributing, maintaining and/or alleviating depression among poor urban pregnant and newly parenting adolescents.

Keywords: Pregnant; adolescent; interpersonal psychotherapy; depression

Introduction

Often in clinical trials only outcomes are reported while data that might offer inroads into understanding treatment mechanisms are overlooked. A recent study on the use of Interpersonal psychotherapy (IPT) to prevent and treat depression in pregnant and newly parenting teens found significant reductions in depressive symptoms between pre and post treatment assessments (Miller et al. submitted). The current mixed methods study integrated data from therapy sessions, clinical notes, questionnaires and post hoc interviews of clinicians to explore the nature of the participants' depression and the factors that helped them to feel better.

Rates of depression among pregnant adolescents have been found to be between 26 and 44% with the upper range among poor urban minorities (Beardslee et al. 1988). Depression during pregnancy is linked with pregnancy and delivery complications and postpartum depression (Beck 1996; Da Costa et al. 2000). Postpartum depression is associated with less positive engagement and more negative affect in interactions with infants as well as an increased risk for infant insecure attachment (Campbell et al. 1992; Goldberg 2000).

Interpersonal psychotherapy (IPT) is a short-term validated treatment for depression which conceptualizes and treats depression within an interpersonal context (Klerman et al. 1984; Weissman et al. 2000). Formulated within the four ''problem areas'' of role transitions, interpersonal disputes, interpersonal deficits or grief, clients are helped to clarify and then renegotiate their current interpersonal problems. Recently, Dr. Miller and colleagues conducted two pilot open clinical trials on the effectiveness of IPT to reduce and/or prevent

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depression among inner city pregnant and newly parenting teenagers (Miller et al. submitted). One of our study goals was to assess the use of group IPT specifically modified for pregnant adolescents (IPT-PA). In developing IPT-PA, Dr. Miller drew on three sources: Mufson and colleagues' (2000, 2004) manualization of IPT-A for treatment of depression in adolescents, Spinelli and colleagues' (2001, 2003) manualization of IPT-P for treatment of depression in pregnant adults, and Dr. Miller's own work (2004) on IPT within a spiritual framework (IPT-S). Additionally, stressors common in low socioeconomic status urban neighborhoods were taken into account when designing the treatment.

Mufson's core formulation highlights the need for adolescents to develop negotiating skills to advocate for their needs with adults. Of potential relevance to pregnant girls, Mufson posits a fifth interpersonal problem area, ''single parent family,'' suggesting that under limited resources and attenuated parental social support, adolescents need to assume more responsibility, self-advocate, and find guidance from adults other than parents. Spinelli identifies motherhood as an interpersonal transition, usually accompanied by social, familial and/or economic changes. IPT-PA encourages pregnant women to identify gains and losses in their role transitions, to generate alternative ways to assume the new role, to negotiate relationships surrounding the transition and to identify social and material supports. Touching on teen pregnancy, Spinelli also defines a fifth interpersonal problem area: ''complicated pregnancy,'' which include ''unplanned, untimely or overvalued'' pregnancies.

Adhering to the basic IPT framework, Miller suggests an augmentation of IPT that spiritually oriented therapists may use with spiritually inclined clients. Her understanding of spirituality includes a sense of awe and connection to a Higher Power as well as a draw to make choices and maintain relationships with honor and respect for self and other. Unlike many forms of psychotherapy, IPT-S allows space for discussion about and motivation from a sense of spirituality. Relationships are viewed as opportunities for spiritual growth. Relevant to pregnant adolescents, IPT-S places high value on transitions through life stages – such as from childhood to adulthood or the transition to motherhood. When changing roles are not accurately recognized or supported by oneself or significant others, symptoms of depression function to bring awareness to the incongruities. IPT-S was integrated into IPT-PA because a spiritual perspective was voiced by participants.

Miller et al.'s pilot Study I provided IPT-PA as treatment or prevention for participants ranging from those with few depression symptoms to those with severe depression. The mean score on the Beck Depression Inventory (BDI) among the 14 participants decreased significantly from 9.1 ($SD = 6.9$) at pre-intervention to 4.8 ($SD = 4.4$) at post-intervention ($z = -2.42$, $p < 0.05$), as did scores on the Edinburgh Postnatal Depression Scale (EPDS) (pre $M = 8.8$, $SD = 4.7$ versus post $M = 4.8$, $SD = 4.1$; $z = -2.80$, $p < 0.01$). Effect sizes were 0.86 on the BDI and 0.89 on the EPDS. Study II was a treatment study only including participants with a DSM IV depressive disorder as assessed by a clinical evaluator. Post intervention, 8 of the 11 participants no longer met criteria for a DSM IV diagnosis. The mean score on the BDI decreased significantly from 18.6 ($SD = 9.9$) at pre-intervention to 10.3 ($SD = 6.4$) at post-intervention ($z = -2.58$, $p < 0.05$), as did scores on the Hamilton Rating Scale for Depression (HRSD) from $M = 15.1$ ($SD = 7.8$) to $M = 9.1$ ($SD = 5.2$) ($z = -2.27$, $p < 0.05$), and the EPDS from $M = 13.1$, ($SD = 5.6$) to $M = 7.0$ ($SD = 6.5$) ($z = -2.41$, $p < 0.05$). Effect size on each measure was as follows: 1.19 on the BDI, 0.76 on the HRSD and 0.94 on the EPDS. Treatment gains were maintained at a 20-week follow-up assessment. At least a quarter of the participants substantially altered their living situations to improve physical safety for themselves and their infant. Examples included moving out of a boyfriend's house who is dealing drugs into her mother's house and moving out of a foster home where physical and emotional needs were denied to a government funded home for young mothers.

While the above clinical trials document changes in the participants' scores and lifestyles, two important questions remain that we will attempt to answer in the current study: 1) What were the characteristics and correlates of the participants' depression? and 2) Which aspects of the treatment and/or participants' broader lives were associated with symptoms relief? These two questions are combined in one paper because the unique presentation of depression in a specific population informs how that population is best treated.

Method

Overview

The current study relies heavily on data collected during two pilot clinical trials assessing Interpersonal Psychotherapy for prevention and treatment of depression among pregnant and parenting adolescents (IPT-PA; Miller et al. submitted). Re-analysis of the data did not violate the permission originally granted

by the participants. All identifying information has been changed or removed to insure confidentiality.

For the current study, all clinical-scientists (referred to here as clinicians) who worked on the study were interviewed. The clinicians had cumulatively spent hundreds of hours with the participants in the clinical sessions described below as well as in the cafeteria, at school assemblies, new student orientations and on the phone during the design and recruitment phases of the clinical trials. Therefore, they had the opportunity to observe a broad range of behavior among the participants as well as gather non-verbal data which was important for evaluating depression. The unconventional use of interviews with clinicians had two purposes: to tap this additional source of information and to triangulate the data. Use of varied sources and kinds of data strengthen and enrich findings about which they concur. When sources disagree, further investigation can shed light on context specific phenomenon or highlight measurement limitations. The technique of using clinicians' subjective experiences while running a clinical trial has been explored by the authors in a previous study (Shanok and Miller, in press) and was found to provide ''broad, nuanced information with substantial validity''.

Participants

Participants in the current study included 80 adolescents ages 13–19 attending a public school serving pregnant and parenting teenagers in an impoverished section of New York City. Seventy-six percent were pregnant and 24% were parenting, all with their first child. Forty-nine percent self-identified as Hispanic, 38% self-identified as Black and 10% self-identified as Black and Hispanic. Demographic information is presented in Table 1. However, not all participants participated in all parts of the study. Of the 80 participants, all of whom filled out the standardized depression scales, 42 were present in the therapy groups and 41 responded to the life theme questionnaires. Tables 2 and 3 provide demographic information on the therapy group attendees and the questionnaire respondents, respectively. The clinicians who worked on the study ($n = 4$) ranged in age from 26 to 35. One was pregnant and parenting and the other three did not have children. Two clinicians self-identified as Caucasian, one as Hispanic and one as Middle Eastern.

Data were gathered from three domains: 1) therapy sessions and clinical interviews ($n = 42$), 2) self-report measures ($n = 80$) and 3) perspectives of all clinicians who worked on the study ($n = 4$). From each domain, information was gleaned in several ways. For therapy sessions and diagnostic interviews: 1) video tapes of sessions were transcribed and 2) process notes were

Table 1. Demographic characteristics of pregnant and parenting adolescent study participants ($n = 80$)

Characteristic	*n*	%
Gender		
Female	80	100
Race		
Hispanic	39	49
Black	30	38
Black and Hispanic	8	10
South Asian	1	1
Undisclosed	2	2
Age		
13	6	8
14	10	13
15	19	24
16	28	35
17	11	14
18	4	5
19	1	1
Pregnancy status		
Pregnant	61	76
Parenting	19	24

Table 2. Demographic characteristics of pregnant and parenting adolescent therapy group participants ($n = 42$)

Characteristic	*n*	%
Race		
Hispanic	18	41
Black	19	43
Black and Hispanic	4	9
Undisclosed	3	7
Age		
13	4	9
14	7	17
15	10	24
16	10	24
17	8	19
18	2	5
19	1	2
Pregnancy status		
Pregnant	39	93
Parenting	3	7

Table 3. Demographic characteristics of pregnant and parenting adolescent questionnaire respondents ($n = 41$)

Characteristic	*n*	%
Race		
Hispanic	20	48
Black	15	36
Black and Hispanic	3	7
South Asian	1	2
Undisclosed	3	7
Age		
13	3	7
14	6	15
15	9	22
16	14	34
17	7	17
18	1	2
Undisclosed	1	2
Pregnancy status		
Pregnant	30	73
Parenting	11	27

written by clinicians during interviews and after each session. For self report measures: 1) participants responded to two standard depression measures ($n = 80$) and 2) participants answered questionnaires on a broad range of topics ($n = 41$). For clinicians' perspectives: 1) clinicians were interviewed individually and 2) clinicians were interviewed all together in a focus group and all interviews were transcribed.

Procedures

Before commencing Study I, class-wide depression screenings were conducted in two health classes to determine whether offering IPT as an extension of the health program would be appropriate. All students present in two health classes were informed that filling out two self-report depression measures, the BDI and the EPDS, was optional and confidential. Twenty-two students were present, all chose to participate and signed assent forms.

In Study I, IPT groups were conducted as prevention and treatment during health class. The study was described to all students present in two health classes. They were informed routinely that their participation in both the intervention and the assessment was optional and confidential. Students were offered the alternative of taking a study period in the library. Every student present chose to participate in the groups and signed assent forms. There were no exclusion criteria for the in-class groups. These hour long sessions were conducted once per week for 12 weeks and every student present in school on each day that the groups were run participated. During the therapy sessions, themes were identified which informed the creation of a questionnaire. At the end of the study, participants in attendance were invited to fill out the questionnaire. Twenty-eight of the respondents had attended therapy and 13 respondents had enrolled at the school more recently, and therefore had not attended the group. All students were again informed that participation was optional, confidential and that they would be compensated $25 for completion of the questionnaires. All students in attendance chose to participate and again signed assent forms. Questionnaires took roughly 25 min to complete.

In Study II, IPT groups were offered after-school. The 14 students who participated were recruited as follows: clinicians provided information on the group during whole school assemblies, new student orientations, in the guidance counselor's office and informally in the cafeteria. Interested students with EPDS scores above 7 were invited to attend a thorough clinical evaluation once they obtained parental consent and provided assent. Inclusion criteria for the after-school group were: a current depressive disorder with no psychotic symptoms and no suicidal ideation. Three students were excluded from the therapy due to suicidal ideation and referred for more appropriate treatment. Those who attended the after-school treatment were interviewed for approximately two hours three times over seven months using a standard semi-structured interview format. Therapy consisted of 75 min group IPT sessions which met privately at school once weekly for 12 weeks. Studies I and II were conducted between October, 2001 and June, 2003.

For the current study, all four clinicians who worked on the study agreed to be interviewed individually with a standard open interview format and as a group. The clinicians shared the roles of project manager, clinical evaluator and co-therapist. Appendix B lists the interview questions that are relevant to the current study in the order in which they were asked. The interviews were conducted in private offices and each took between 40 and 60 min. After the individual interviews were completed, a focus group was held with all four clinicians addressing study questions that continued to be unclear. This meeting was held in a private office and lasted 90 min. All of the above sessions were recorded and transcribed. Interviews for the current study were conducted from December, 2004 to May, 2005. The intervention studies were approved by the Ethics Committee for Research under the New York City Board of Education and all three studies were approved by the Teachers College, Columbia University Institutional Review Board.

Intervention

Combining elements from Mufson, Spinelli and Miller's own work on spirituality (see Introduction), Miller adapted Interpersonal Psychotherapy for Pregnant Adolescents (IPT-PA). IPT-PA maintains the following four goals: 1) clarity of the interpersonal transition to motherhood within the context of adolescence, 2) identification of social and material resources (''building a nest'') to sustain health and security during pregnancy and as new mothers, 3) establishment of social support from experienced mothers (''finding a guide'') and 4) avoidance of violence and altering social networks that threaten prenatal health or the health of the infant (''safe harbor''). IPT-PA upholds the perspective that despite obstacles to procuring the resources for motherhood in adolescence, motherhood remains a valid and meaningful as well as difficult interpersonal transition. Moreover, motherhood can be experienced as awe inspiring and an opportunity for substantial self-improvements.

Assessments

Depression

The Beck Depression Inventory and the Edinburgh Postnatal Depression Scale were used to measure depression. The BDI (Beck et al. 1988) is a 21 item self-report measure that assesses the presence and severity of affective, motivational, cognitive, vegetative and psychomotor aspects of depression. Among 25 studies on adolescents through adults of varying racial and socioeconomic backgrounds using the BDI, correlations with clinical assessments ranged between 0.55 and 0.96. The EPDS (Cox et al. 1987) is a 10 item self-report questionnaire validated with both pregnant and postpartum women. Sensitivity, specificity and positive predictive values have been measured at 84, 88 and 48%, respectively (Murray and Carothers 1990).

Life themes

The other items on the questionnaire are questions generated by the clinicians about the participants' pregnancies and family planning, their lifestyle practices and transitions and their important relationships. Appendix A lists the questions that are

relevant to the current study. Five point Likert scales were used for most items. For example, the participants were asked: ''How surprised were you to find out that you were pregnant?'' with response options from: ''1 = not at all surprised'' to ''5 = very surprised.'' Other than the depression measures, validated scales were not used for three reasons: 1) appropriate scales do not exist for many of the questions that the investigators wanted to ask, 2) based on the reading level of the students, the time allotted for the survey and the investigators' intent to cover a broad range of areas, simplicity and parsimony were top priorities and 3) from experiences using scales in the semi-structured interviews, many items were not understood because they were not targeted to the dialect of inner city minority adolescents. The questionnaire items had been used orally and were understood by the students. The wording of many questions was influenced by the Social Adjustment Inventory for Children and Adolescents (SAICA) which was piloted in the after-school treatment group. The SAICA (John et al. 1987) is a semi-structured interview schedule that assesses social functioning in family, school, peer and spare-time domains.

Data analysis

Qualitative analyses focused on characteristics and correlates of depression as well as evidence of symptom relief. The recordings of therapy sessions and interviews with the clinicians were transcribed following LeCompte and Schensul's guidelines in Analyzing and Interpreting Ethnographic Data (1999). Behavioral expressions of emotion, such as crying or clapping, were described in parentheses in the text. Next, an inductive qualitative analysis was done on each source of data including the above transcriptions, therapy notes and interview notes. This analysis was run in three stages as described by LeCompte and Schensul beginning with domain analysis to identify units to be coded. For example, words relating to mood and words relating to change were identified and coded. Mood words that were scanned for included: 'sad', 'cry', 'pissed', 'on my nerves', 'excited' and 'happy', among many others. Looking at each unit's relation to the other units, patterns and structures emerged. Following the above example, a pattern emerged when the relationship of mood categories to change categories was consistent across repeated occurrences; for instance, participants reported happiness when they were able to initiate a change in their lives. Structures are complex patterns that take into account context and/or other patterns. When a pattern or structure is applicable across multiple examples without new categories or caveats emerging, the pattern or structure is saturated and the data analysis on it is complete.

On the survey data, Pearson correlations were used to look at the relationships between depression on both the BDI and EPDS and the following questionnaire items: participant's happiness about the baby, her mother's happiness about the baby, her openness to getting pregnant, whether she has one or two special friends, the baby's father's happiness about the baby and community support of the pregnancy. Using Person correlations and ANOVAs, respectively, depression was related to age and ethnicity. A factor analysis was run on all the individual items from the BDI and EPDS excluding items that query about the same concepts. Basket variables were created from the resulting factors with eigenvalues above 1. Correlations were used to relate these new variables with the other questionnaire items. After the data from each source were analyzed, the results were compared across sources. These final findings were then compared to existing literature.

Validity checks and trustworthiness of analyses

Four Columbia University faculty members from different disciplines were consulted repeatedly during the design, data analysis and writing up phases of the study. These consultants included an anthropologist with expertise in ethnographic research who oversaw the qualitative data analysis, an organizational psychologist, a counseling psychologist and a professor of social work. Four criteria commonly used for measuring the trustworthiness of qualitative analysis are: prolonged engagement with the data, credibility, confirmability and transferability (Lincoln and Guba 1985). We achieved the first criteria through multiple reviews of the recorded therapy sessions and interviews in order to transcribe and insure accuracy of transcription. Numerous transcript readings, codings and revisions of codings also added to our familiarity with the data. Credibility was established by triangulating results across sources between self-report questionnaire data, clinical transcriptions and clinicians' perspectives. Results were only included if they were supported by at least two of the sources and not contradicted by the third. Confirmability was accomplished by using recursive as well as confirmatory analyses in all three stages of analysis and by repeatedly discussing the raw data with consultants in a range of fields. The responsibility for transferability lies primarily with those wanting to generalize results to other settings. In order to help readers determine transferability, we have included a thorough Method section.

Results

Questionnaire (n = 41) and depression measures (n = 80)

The mean BDI depression score was 11.61 ($SD = 8.85$, range = 0–41). Using BDI cut-off scores of 10 and above suggested by Beck et al. (1988), 44% of the participants had mild through severe depression symptoms. The mean EPDS depression score was 9.15 ($SD = 5.61$, range = 0–25). Using EPDS cut-off scores of 10 and above (Cox and Holden 2003), 43% of the participants were experiencing or at high risk for postpartum depression. The BDI and EPDS correlated significantly ($r = 0.60$, $p < 0.01$).

Of the questionnaire items that we looked at, only participants' mothers' happiness about the baby correlated significantly with both depression scales (BDI: $r = -0.36$, $p = 0.02$; EPDS: $r = -0.40$, $p = 0.01$). On the BDI, the more a participant reported wanting to have a baby currently and in the past, the lower her depression score (respectively: $r = -0.33$, $p = 0.04$; $r = -0.34$, $p = 0.04$), but not on the EPDS (respectively: $r = -0.09$,

Table 4. Summary of items and factor loadings (with Varimax rotation) on Beck Depression Inventory and Edinburgh Postnatal Depression Scale ($n = 80$)

Item	Factor Loading						
	1	2	3	4	5	6	7
BDI 10. Crying	**0.78**	0.14	0.16	0.08	−0.11	0.08	−0.18
BDI 6. Feeling of being punished	**0.75**	0.15	0.14	−0.02	0.17	0.14	0.14
BDI 15. Difficulty working	**0.69**	0.25	−0.03	0.09	0.01	−0.16	0.41
BDI 4. Less satisfaction	**0.69**	0.19	0.17	0.27	−0.08	0.11	0.25
BDI 8. Critical of self	**0.59**	0.10	0.40	0.04	0.11	0.23	0.37
BDI 3. Feeling like a failure	**0.57**	−0.08	**0.58**	0.00	−0.11	0.06	0.07
BDI 5. Guilt	**0.54**	0.21	0.40	0.26	0.25	0.14	−0.28
BDI 1. Sadness	**0.52**	0.37	0.18	0.28	0.23	−0.05	−0.04
EPDS 4. Anxious or worried	0.01	**0.84**	0.12	0.18	0.09	0.16	−0.09
EPDS 5. Scared or panicky	0.23	**0.69**	−0.19	0.14	0.02	0.14	0.09
BDI 16. Sleep difficulty	0.28	**0.63**	0.34	0.03	−0.05	−0.03	0.17
BDI 17. Easily tired	0.45	**0.53**	0.04	−0.00	−0.15	−0.10	0.24
BDI 2. Discouraged about the future	0.00	0.16	**0.74**	−0.09	0.11	0.18	0.07
BDI 12. Loss of interest	0.30	−0.07	**0.61**	0.09	−0.05	−0.09	0.00
BDI 3. Feeling like a failure	**0.57**	−0.08	**0.58**	0.00	−0.11	0.06	0.07

Eigenvalues >5% of variance. Boldface indicates highest factor loadings.

$p = 0.57$; $r = -0.07$, $p = 0.67$). Neither age nor ethnicity were predictive of depression on either scale (Age: BDI: $r = 0.10$, $p = 0.52$; EPDS: $r = 0.01$, $p = 0.96$; Ethnicity: BDI: $f = 0.92$, df = 38, $p = 0.44$; EPDS: $f = 2.13$, df = 38, $p = 0.11$). The items that were endorsed by two thirds of the participants or more on the BDI were 'irritability' and 'tiredness' and on the EPDS were "blaming myself unnecessarily," "being so unhappy that I have been crying" and feeling "anxious or worried for no good reason". (Irritability and tiredness are not items on the EPDS.)

Table 4 presents results from a factor analysis of BDI and EPDS items. The strongest factor, responsible for 30% of the variance, included the following items: crying, the feeling of being punished, difficulty working, less satisfaction, critical of self, feeling like a failure, guilt and sadness. This grouping will be called Shame and Guilt. The second factor, responsible for 9% of the variance, included: anxious or worried, scared or panicky, sleep difficulty and easily tired; it will be termed Anxious. The third factor, Discouraged, accounted for 7% of the variance and included: discouragement about the future, loss of interest and feeling like a failure.

Table 5 shows the questionnaire items that correlate significantly with the three factors. A negative relationship exists between Shame and Guilt and reported mother happiness about the baby. The higher a participant's Shame and Guilt score, the more likely she is to endorse being teased or bullied. The Discouraged factor correlates negatively with how much the participant reported thinking the baby's father will support the baby emotionally and financially, how much she endorsed wanting to get pregnant, how easily she reported making friends, the degree to which she reported having a steady group of friends and how well she reported getting along with her sister. A positive relationship also exists between participant reports of being teased or bullied and discouraged scores.

Table 5. Significant correlations between depression factors and questionnaire items among pregnant and parenting adolescent study participants ($n = 41$)

Factor	Questionnaire item	Pearson correlation	p
Shame and Guilt	How happy grandmother is about the baby	−0.36	0.02
	How much gets teased or bullied	0.35	0.02
Discouraged	How much thinks baby's father will support baby emotionally	−0.66	<0.01
	How much wanted to get pregnant	−0.48	<0.01
	How easily makes friends	−0.46	<0.01
	How much thinks baby's father will support baby financially	−0.41	0.01
	How much has a steady group of friends	−0.40	0.01
	How well getting along with sister	−0.36	0.03
	How much gets teased or bullied	0.35	0.03

Therapy transcription, clinical evaluation and process note data ($n = 42$)

Anger and sadness were the most frequently articulated components of depression in the therapy transcription,

clinical evaluation and process note data. Anxiety was also referenced often. These emotions were almost always expressed in relation to external circumstances. Either the participants directly identified external circumstances as contributing to their emotions or the emotions were expressed while discussing external circumstances. The circumstances fit into four contextual categories: feeling trapped or powerless, feeling wronged, when a significant family member was sad or rejecting and when anger or sadness served as a form of power. In speaking about her baby's father's family and her mom's treatment of her, 17-year-old Kira alluded to the first three of these contexts:

> [Crying] Yeah, because I live with her [baby's father's mother], she feel that she can do anything she want. She never gave me any money. I went to get a job and she say, 'Oh if you get a job, they gonna take your money away.' *You get money for me?* I lived there for a whole year and I didn't even know she getting money for me. My mother left me in New York. I don't have a father... They [baby's father's family] all put it in my face that my mother left me. They say, you ain't got money, you ain't got nothin', where you gonna go?

On the Shame and Guilt depression factor, Kira's score was two standard deviations above the mean, on the Anxious factor, she scored 1.5 standard deviations above the mean and on the Discouraged factor, her score was one standard deviations above the mean. Examples of being wronged also frequently included taunts or demeaning remarks from strangers on the street, neighborhood peers and guidance counselors at their former schools.

Demonstrating the fourth context of anger as power, 16-year-old Jaquel explained that anger is an effective way to get her boyfriend to follow her requests. In her words, ''My boyfriend only hear me when I get angry. That's how I got him to quit smoking. I'm strict with him. Otherwise it don't work.'' Jaquel's Shame and Guilt factor score was half of a standard deviation below the mean, her Anxious score was close to the mean and her Discouraged score was the lowest score possible: 0.

A thematic content analysis revealed that participants spoke about or expressed feeling good when their pregnancies were honored and validated by others, when they were able to get resources and felt capable of self advocating, when they were able to establish personal boundaries, when the group was supportive and when they recognized their success in passing through necessary transitions. Additionally, references to a Higher Power were connected with purpose, motivation and/or learning. The first condition is illustrated by Feliz, age 15: ''I had a lot of people come up to me and say, 'ya know, I had a child when I was your age.' Doctors make you feel better about being pregnant too.'' The impact of self advocacy and establishing boundaries was demonstrated by 16-year-old Maria in a situation that she initially brought up in therapy the week before Christmas. With pain and anger in her voice, she told the group that her boyfriend was planning to bring his former girlfriend home for Christmas to meet her. The former girlfriend was also pregnant from Maria's boyfriend. ''I saw myself beating the shit out of her,'' Maria shared; however, she did not want to behave this way as she was pregnant and recognized that the two fetuses would be half siblings. Not knowing how to act, she felt ''scared'' and asked for the group's help. The therapist suggested telling her boyfriend how she felt. The following session, Maria described the outcome:

> I talked to him [boyfriend] when I went home that day. I did tell him how I felt. I told him that I didn't want her, what's-her-name [former girlfriend], to come, that I didn't feel comfortable around her, meeting her. He didn't argue with me, nothin'. He just walked away. At the end of the night he was like, 'Ya know, I'm not gonna do that to you, I'm not gonna disrespect you like that. She not comin'... I was like '*really?*' I was so happy.

An example of recognition of successful transitioning came from 14 year-old Melissa. She explained that she used to spend any money she earned on clothes, ''I could not walk by a shoe store without, '*Oh*, I gotta go in.'" Currently, she shared that she was putting her money away for her baby and proudly showed the group that the sole was peeling off of her boot. Other transitions that girls spoke about with pride were the cessation of physical fighting, ''partying'' and hanging out on the street. Several participants referenced a Higher Power with initentionality when speaking about their pregnancies. For instance, one 14-year-old participant shared her belief about why she was pregnant with a girl: ''She'll be all tough like I was to my mom. So now I'll feel all the pain I put my mom through. G-d will make me realize how it feels so now I'm gonna get respect from my mother.'' Another participant, age 16, whose mother had recently passed away felt that she had become pregnant to carry forward her mother's spirit. Participants' mothers and fathers of the babies were frequently spoken about both in the context of symptoms of depression and feeling good.

Interviews with clinicians (n = 4)

All clinicians mentioned ''irritability'' or ''anger'' as the ''feature symptom'' of depression among many of the

participants. Anger was spoken about by all clinicians in the context of their life circumstances, such as anger about the inability to obtain vital resources:

> The energy of the current depression was around arriving into motherhood and not having a nest, not being set up . . . One girl, her baby was coming and she wasn't allowed to take food from the refrigerator in her foster home, ya know, she couldn't get enough to *eat*.

Poor treatment by others, usually related to their youthful pregnancies, was a common explanation offered by all of the clinicians for the participants' anger and sadness. Three clinicians also observed sluggishness among several participants.

When asked what they thought helped the participants feel good, including the ''active ingredients'' of therapy, the clinicians' responses fit into the same categories as those generated from the transcript, clinical evaluation and process note data: when the participants' pregnancies were validated by others, when they obtained needed resources and felt capable of self advocating, when they were able to establish personal boundaries, when the group was supportive and when the participants recognized their success in passing through transitions. The first category is illustrated in one clinician's words, ''a powerful antidepressant was that we honored the arrival of motherhood, supported it as valid and no less valid even though they were young and poor.'' Another clinician said an active ingredient in therapy was ''helping them to think about what's next, how to get child care, how to negotiate with the difficult people in their lives.'' Speaking about the impact of the group and school setting, a third clinician said,

> All the other girls were going through the same experiences at the same time or a little before them so they could know what to expect or a little behind them so they could be in the position of giving advice and helping other people.

Speaking about the importance of transitioning, one of the clinicians said the following: ''There were many changes, structural, interpersonal changes. Many girls were *stuck* somewhere in the transition. Like they needed a midwifery of their relationships in pregnancy.'' Mothers were indicated by all of the clinicians as central in most of the participants' lives and gaining their mothers' support was connected to the participants' mental wellbeing.

One clinician spoke about spiritual understandings that many of the girls held: ''They thought their dreams carried important information about future events, they thought things happened for a reason, thought the child is a creation of G-d.'' She shared her belief that this spiritual connection motivated participants to take up healthier and safer lifestyle practices. In the semi-structured interviews of the clinicians, spirituality was not queried about specifically and none of the other clinicians brought the topic up spontaneously. Another clinician brought up the 'usefulness' of helping the participants to recognize the losses and gains of their youthful pregnancies.

Discussion

A recent intervention study on the use of IPT to prevent and treat depression in pregnant and newly parenting teens found significant reductions in depressive symptoms between pre and post treatment assessments (Miller et al. submitted). The current mixed methods study uses a variety of sources to explore the nature of the participants' depression and the factors that helped them to feel better in the above study. Anger/irritability and sadness were the most common symptoms of depression reported and exhibited by the participants. Anxiety was also prevalent. The three symptom clusters with the largest variance included a Shame and Guilt grouping, an Anxious grouping and a Discouraged grouping. Symptoms were almost always connected with external circumstances and the four contexts that were most frequently discussed were 1) situations in which participants felt trapped and/or powerless, 2) situations in which participants felt wronged, 3) when a significant family member was sad or rejecting and 4) when the symptoms helped them to get what they wanted. Aspects of the therapy, school environment and their broader lives that were associated with symptom relief were validation of the participants' pregnancies, development and successful use of self-advocacy and boundary setting skills and recognition of passage through important transitions. Participants' mothers' reactions to their pregnancies and roles in their lives was a pervasive theme. Spiritual beliefs may have also been a central source of motivation for some of the girls.

Depression rates and features

Comparable to findings from other samples of poor urban minority pregnant teenagers (Beardslee et al. 1988), over 40% of the participants endorsed enough items to suggest at least mild symptoms of depression and high risk for postpartum depression. Transitions, even positive ones, can lead to depression (Weissman 1995), and these participants are taking the giant step from girlhood to motherhood, many of them with scarce resources and

abundant stressors. Anger was a common feature symptom of their depression and often revolved around difficulty getting necessary resources, from food to validation, to support the transition to motherhood. Though depression connotes pathology, in many cases the participants' symptoms (particularly anger) helped them to establish a domain of control or to leave a living situation if their boundaries were not being respected.

A factor analysis distinguished clusters of items from depression measures that tended to be grouped, suggesting that there may have been different types of depression. Responsible for 30% of the variance was a factor termed Shame and Guilt which included crying, feelings of being punished, difficulty working, less satisfaction, feeling self critical, feeling like a failure, guilt and sadness. The items making up this factor mirror the discriminatory views experienced by the participants and reflected in the literature (Schultz 2001): they have failed as members of society, are incapable, have done something wrong and therefore should feel guilty and suffer the consequences. In other words, this factor may be the internalization of public biases about poor, minority pregnant teenagers. Indeed, prejudice affronts from both strangers and loved ones were common experiences among participants. Using this internalization interpretation of the factor, the two questionnaire items that correlate significantly with this factor follow logically: 1) the happier that participants reported their moms were about the baby, the lower their Shame and Guilt scores and 2) the more that participants reported being teased or bullied, the higher their Shame and Guilt scores. It is possible, therefore, that a mother's approval of her teenage daughter's pregnancy protects her daughter from internalizing discriminatory perceptions of herself.

The Anxious and Discouraged factors, responsible for nine and seven percent of the variance respectively, are also worth mentioning. The Anxious factor embodies classic symptoms of anxiety including: feeling scared or panicky, sleep difficulty, feeling easily tired and feeling anxious or worried. The Discouraged factor includes discouragement about the future, loss of interest and feeling like a failure. Questionnaire items correlating with the Discouraged variable suggest that this constellation of depression symptoms may be associated with low social efficacy. Specifically, participants with high Discouraged scores also indicated less expectation of emotional and financial support from the baby's father and less ability to make friends or to have a steady group of friends. Furthermore, they reported getting along with their sisters less well, were more likely to report being teased or bullied and indicated having had less desire to get pregnant.

Factors in symptom reduction

The four most common reasons associated with the symptoms of depression were all socially embeded: feeling trapped or powerless, feeling wronged, when a significant family member was sad or rejecting and when symptoms aided in goal achievement. Likewise, the central factors in symptom reduction were also socially embeded.

Validation of the pregnancy may have been particularly important in this sample given frequent experiences of invalidation that many of the participants reported. As adolescence is a time of identity formation, they may have been especially vulnerable to messages about their personal qualities and worth. The strength of the Shame and Guilt constellation in this sample highlights their need for positive regard. In the context of therapy, the therapists' regular use of validation was partially due to their clinical styles as well as more specifically related to the spiritual component of the intervention. The therapists each owned a sense of awe and respect for the processes of conception, fetal development and birth. They allowed space for discussion on these matters and appreciated the participants' decisions to keep their babies. Positive regard in therapy also emerged from the group context. Group members joined around the unique experiences and stressors of youthful pregnancy in poverty and the choice that all had made to keep the baby. They listened to the details of each others' lives, validated each others' challenges and helped each other problem solve. The unique school setting likely also validated their pregnancies and sheilded them from social ostricism that some may have experienced had they stayed in their regular schools. Reinforcement from doctors, family members and other significant adults in their lives was also reported by many of the participants to positively impact their mood.

Another factor in participants' healing was the development of self-advocacy and boundary setting skills. Mufson's formulation of IPT-A for adolescents from ''single parent families'' is particularly relevant with the current sample; not only are most of them from single parent families, but they are becoming single parent families. Therefore, the need to take on increased responsibility and find external sources of support is multiplied. The emergence of an Anxious factor from the factor analysis of depression items suggests that some of the participants' depression may have been characterized

by uncertainty about their abilities to alter their environments to meet their new needs. The Discouraged factor suggests that other participants may have felt unable to do so. One main focus of the IPT-PA was to help participants recognize that they could often impact their environments, to think through various options, to choose and try out strategies and then to evaluate outcomes. Here again the group setting was useful, as the participants pooled ideas and experiences about how to have their and their babies' needs met. When participants shared successes, this likely gave other group members the confidence to try new strategies.

Recognition of passage through important transitions was also connected with participant healing. A goal of the IPT-PA was to clarify participants' role transitions to motherhood in the context of adolescence. This included helping participants to identify gains and losses in this transition and to explore different ways of taking on the new role. Clarifying the role transition seemed to help participants to define what they were striving towards and know when they took steps forward. For many participants, recognition of successes in transitioning meant acceptance of certain losses. For others, it meant developing and then seeing in themselves qualities of the mothers that they aspired to be. Changes in their relationships with significant family members also helped to demark their transitions.

In sum, the aspects of IPT-PA most directly connected with participant healing were clarifying interpersonal transitions, self-advocacy and boundary establishment. Another component of therapy and the participants' surrounding environments was validation of the participants and their choices to keep their babies. In particular, mother support of her daughter's pregnancy was a theme that ran through all sources of data and may be protective against depression. Appreciation of the conception, gestation and birth process by the therapists from a spiritual perspective may have also been useful for some participants. The predominant characteristics of a participant's depression may dictate which of these strategies would be most helpful to her. For example, an individual presenting with the Shame and Guilt constellation might particularly benefit from validation. Figure 1 displays a summary of clinical suggestions for treating pregnant and parenting teenagers based on the results of the current study.

Medical staff who work with young pregnant women may be in a position to validate their patients' pregnancies, as they would adult women. As several participants reported about their experiences with medical staff, a few words of encouragement or validation can go a long way. Going a step farther, mental health workers who have repeated contact with young pregnant women may facilitate symptom reduction by helping them manueaver in their social settings to obtain the support and material resources that they need. In particular, assisting pregnant teens and their mothers to find their way to a mutually respectful relationship in support of the baby may protect participants against depression.

Limitations and future research

A main goal of the study is to understand what helped to reduce participants' depression. As isolation of each component of therapy is not possible, psychotherapy research requires finding less direct means of answering this question. Our decision not to have a control group for ethical reasons increases this challenge. Not having questionnaire and therapy session data from every participant, as a result of conducting an effectiveness study

- Validate young mother and her pregnancy
- Help young mothers increase self advocacy and sense of self efficacy:
  - Identify own and babies' needs
  - Generate strategies to advocate for needs
  - Choose and implement strategies
  - Evaluate outcomes
- Help young mothers establish and maintain personal boundaries and security
- Facilitate clarity of life transition:
  - Acknowledge and process gains and losses
  - Explore different ways of taking on new role and define attributes to strive towards
- Assist young mothers and their mothers to find their way to a mutually respectful relationship in support of the baby

Fig. 1. Suggestions for treatment of pregnant teenagers generated from mixed methods analysis of two open clinical trials of Interpersonal Psychotherapy for reduction and prevention of depression (Miller et al. in press)

with a hard-to-reach population, is also not ideal. Furthermore, reliance on clinicians' views of what helped to reduce depression may introduce potential bias. As the clinicians were using IPT, they were probably more likely to assume that aspects of the IPT model were the active ingredients in therapy and less likely to think about other aspects of the therapeutic process and participants' life circumstances. Because of the above mentioned limitations, multiple sources of data are combined and results from at least two sources are required to be present in order for a finding to be reported. Future psychotherapy research with pregnant and parenting teenagers could include external evaluators trained in a variety of theoretical orientations who would watch video taped sessions and rate active ingredients in therapy. (Our consent forms did not grant us permission to do this.) Additionally, in the current study we hypothesize that participants with certain symptom clusters may be most helped by particular components of therapy. Directly testing this theory would require randomly assigning participants with various symptom clusters to therapy groups with different emphases. Such a study could help clinicians to maximize treatment effectiveness.

Another potential critique of this study is that the interviews and focus group with the clinicians were done retrospectively. However, progress notes taken by the clinicians after each session, most of which were done at the school in between sessions, help to neutralize recall bias from this source. As a general guideline, we have found that increasing emphasis on process oriented data generated during clinical trials helps to advance understanding about the mechanisms of action in treatment. Finally, the current study emphasizes interpersonal and psychological contributers to and treatments for depression. Naturally, during both adolescence and pregnancy physiological changes are stimulated which can also influence depression. These factors are outside the scope of the current study. Increased knowledge about the connections between interpersonal, psychological and physiological components of depression could lead to significant improvements in treatment through strategic integration of modalities.

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Appendix A

Questionnaire items for pregnant and parenting teenagers who participated in health class IPT groups (accompanied by Likert scales or multiple choices on the questionnaire).

Please circle the best answer or fill in the blank . . .

- Your own birth date:_____
- If you are pregnant, what is your baby's due date:_____
- If you have already delivered, how old is your baby:_____
- Your ethnicity:_____

- How are you getting along with your mother?
- How are you getting along with your father?
- How are you getting along with the baby's father?
- How are you getting along with your brother(s)?
- How are you getting along with your sister(s)?

- How much did you want to get pregnant?
- Were you surprised when you found out you were pregnant?
- Right now, how much do you want to have a baby?
- How does your *mother* feel about the baby?
- How does the *baby's father* feel about the baby?
- How much does your *community* support you for being pregnant?
- How much do you think the baby's father will support the baby *financially*?
- How much do you think the baby's father will support the baby *emotionally*?

- Do you have a religion? What is it?_____
- Do you consider yourself spiritual?

- Do you make new friends easily?
- Do you have one or two special friends?
- Do you have a steady group of friends?
- Do you get teased or bullied by other kids?
- Have you used any of these since you got pregnant? (drugs, alcohol, cigarettes, coffee)

Appendix B

Standard interview format for clinical-scientists ($n = 4$) who participated in two open clinical trials of Interpersonal Psychotherapy for pregnant and parenting teenagers (Miller et al. in press).

General questions

Thinking back about your experiences working on the clinical trial at *name of school*, what general impressions were you left with? What surprised you? How do you think you were perceived by the students? How did you aspire to present yourself? How might the girls have felt pressured to present themselves?

Depression questions

What symptoms of depression did you notice in the girls? Did they talk about their experiences of depression (or sadness, hopelessness, worthlessness, loneliness etc.)? What aspects of their lives do you think added to or protected them against their symptoms of depression and why do you think that? As most girls' depression decreased during the course of the clinical trials, what do you think were the active ingredients in the therapy (if any) and why?

Concluding questions

Do you have other memories or thoughts about the girls that I did not ask about? What helped you to connect with the girls? Did you have experience with adolescent mothers before the trial? Had you read much literature about pregnant and parenting teens before the clinical trial? – Since the clinical trial? If so, what beliefs/stereotypes do you have about pregnant or parenting teens based on the literature? Did the girls confirm your expectations? If so, in what ways? Did they defy other expectations? If so, in what ways? What are some things that you learned from your experiences there?

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