

Adolescent Stress: Its Impact on Mood
and Effective Intervention

By

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A Master's Research Project


Presented to
Oregon Health Sciences University
School of Nursing
in partial fulfillment of
Master of Science

August 13, 1996

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ACKNOWLEDGEMENTS

The authors wish to thank Judy Kendall Ph. D., Master's Research Project advisor and Carol Arland, Psy.D., committee member for their unfailing moral support, optimism, encouragement and guidance.

A special acknowledgement to our families for their support and belief in our endeavor.

Our heart felt appreciation to Jack Finney, Ph.D. for the long hours at the computer putting our data in order.

Cudos to Zola Yates, PMHNP, Chief Editor Extraordinaire.

Thank you Carol Embury, Carol Bailey and Reed Findlayson of DCMHD for planting seeds which germinated into this project.

Thank you to Gregory Clark, Ph.D., for the use of the Adolescent Stress Course, and to Dr. Sheldon Cohen, for permission to use the Perceived Stress Scale in our study.

DEDICATION

To the young women of the Boys and Girls Aid Society

ABSTRACT

Adolescent Stress: Its Impact on Mood and Effective Interventions

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Adolescent Stress: Its Impact on Mood and Effective Intervention is a quasi-experimental study examining the effects of a structured psychoeducational intervention on stress and mood. Clarke's Adolescent Coping with Stress Course (1995) was applied to a group of teen mothers receiving AFS assistance and participating in a state mandated GED / Life Skills program. A sample size of fifteen teens was assigned to control or experimental groups. Demographic questionnaires along with pre and post measures of mood (CES-D, Radloff, 1977) and perceived stress (PSS, Cohen, 1983, revised 1988) were completed. This psychoeducational course emphasized cognitive behavioral approaches to coping with stress. The researcher's hypothesized that this intervention would result in lower scores on the stress and mood measures, reflecting a decrease in stress and improved mood. Data analysis were performed using paired t, independent t and Pearson's r correlations. Calculations reinforced the random behavior of the two groups. The impact on mood scores was not statistically significant.

The researchers interpret the results as indicative that the intervention produced cognitive dissonance in the experimental study group. Therefore recommendations for addressing the unexpected findings, including a follow up process group are discussed.

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Chapter 1 : Introduction

The Shoelace

**It's not the large things that send a man to the madhouse,
No, it's the continuing series of small tragedies
that send a man to the madhouse.
Not the death of his love,
But a shoelace that snaps with no time left.**

Charles Bukowski, 1972

Our interest in adolescents and stress stems from our involvement with various teenagers who were patients on a small mental health unit in a southern Oregon rural hospital. As Registered Nurses with certification in psychiatric / mental health nursing, we became fascinated by the way adolescents perceive problems, and especially interested in their attempts to cope with the numerous stressors in their lives. Most of the adolescents admitted to our unit had few effective coping skills or role models, and they often perceived their situations as hopeless. We frequently discussed with the teen's the stressors, as they perceived them, and coping methods they had attempted. Often, as a group, we would brain storm alternative actions. Sometimes these alternatives were pretty "far-out", such as the adolescent commune and substitute family, but often this

opened up the possibilities of action, chipping at the wall of hopelessness. These early explorations led to discussions between the two researchers in this study, focusing on how we, as clinicians, might effectively and consistently provide intervention, to reduce teen stress.

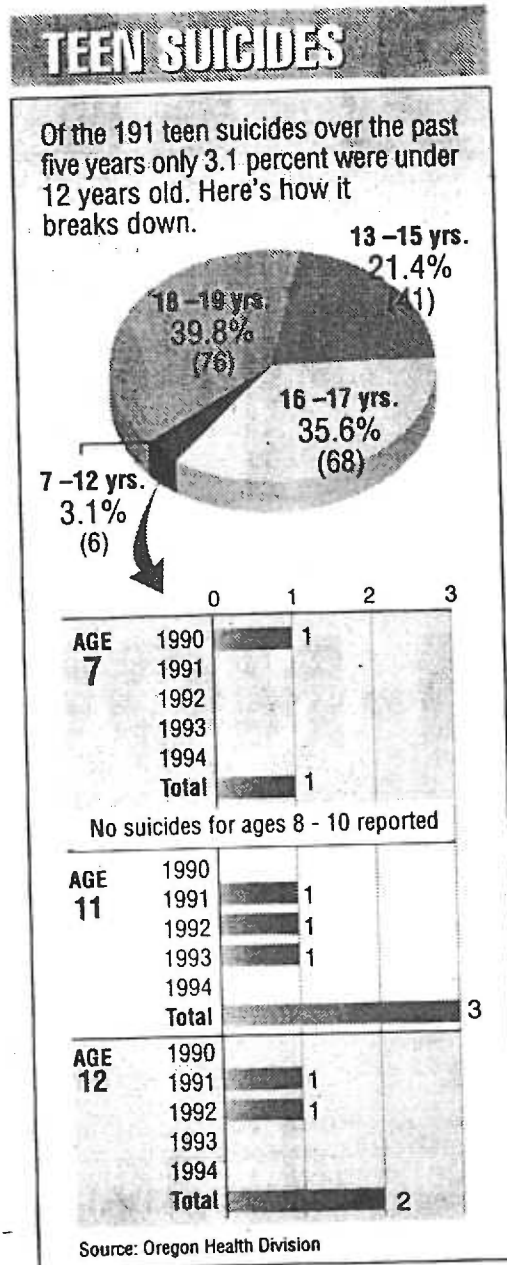
The suicide rate among adolescents in Oregon has risen by eighty percent over the past three years, according to the Oregon Health Division (CD summary, 1995). Recent articles in the Oregonian, a Portland, Oregon daily newspaper, have brought attention to this alarming problem. (see Figure 1). Most recently two youngsters in the Portland metro area, without warning, killed themselves. It seems our questions and concerns are particularly relevant at this time.

More than forty percent of adolescents in a study by Conrad (1992) use the term "stress" to explain the causes of suicide. This "stress" is identified by Conrad as interpersonal and intrapersonal. Stress arises from within the individual teen and between the adolescent and her environment. Wilson et. al. (1995) found that suicidal teens had difficulty accurately assessing stressors and their abilities to cope. This assessment is a cognitive process and a teen's perception of the stressor, its threat or demand, contributes to the emotional response of the teen to the situation (Wilson, 1995). An exploration of adolescent stress, its impact on mood and effective intervention is a timely research topic.

The long term goal of our exploration is to create a cost effective intervention alternative for adolescents in our southern Oregon county. Specifically, by attempting to provide intervention for a highly stressed adolescent group such as teen mothers, we hope

to assess the treatment effectiveness of a specific structured group intervention created by Clarke and Lewinsohn (1995) called Adolescent Coping with Stress Course. In the age of managed care, group approaches to intervention are seen as cost effective ways to provide services. Using this structured group intervention may be seen as cost effective.

Figure 1



THE OREGONIAN, FRIDAY, MARCH 15, 1996

Chapter 2: Review of Related Literature and Conceptual Framework

Stress is defined as both a condition of the environment, and as the individual's response, both physiological and psychological, when placed in a threatening or challenging environment. It is equated with stimulus (input) as well as with response (output) (Meichenbaum, 1989). Research has shown that stress is related to the individual's perception of the stressor. Her appraisal and interpretation of events, along with her appraisal of resources she possesses to cope, affects the level of stress perceived. Before the physiological stress response can take place, all organisms must first recognize a stressful situation. (Meichenbaum, 1989). Lazarus (Lazarus and Folkman, 1984) found that an individual's appraisal of situations affects how they react and cope. Stress levels are affected by how people perceive events and how they view their abilities to handle them. This appraisal process is often automatic and unconscious.

During adolescence there are numerous physical, social, educational and cognitive changes that reflect stressful processes and chronic role strains (Burt, Cohen, Bjork, 1988). Developmental theorists feel that this period of development is unique in that the adolescent must adjust to the psychological and physical changes of puberty, create a sense of self and independence from parents, develop significant peer relationships and explore vocational choices. There is also the emergence of a new cognitive capacity, formal non - concrete operational thought which includes the ability to reason logically and articulate thoughts in a more abstract fashion. This new ability for introspection leads to the struggle for identity and a sense of self esteem.

Adolescence is a life stage during which the frequency of challenge is unusually high (Rice, 1993). Mercurial emotions and behaviors of the adolescent reflect an attempt to cope with the rapidly changing relationship between the internal and external environment and the individual teen. (Compas, 1987 and Meichenbaum, 1989). Stressful experiences of both an acute and chronic nature are important in the course of normal and disrupted development during this period. The manner in which an individual meets challenge during this transition can in part determine the personal and social resources that will be available to them in subsequent transitional periods (Rice, 1993). Stressful events and coping efforts play important roles in the onset and maintenance of a wide range of psychological distress and psychopathology in adolescence (Compas, Orosan and Grant, 1993) , and according to Kashani (Kashani, Dandoy and Orvaschel, 1991), stressful life events during development can produce long term anxiety levels. Minor daily hassles and chronic strains are more predictive of psychological and behavioral difficulties during adolescence than major stressful life events (Compas, 1987).

Psychological distress can be conceptualized in the terms of feelings: anger, fear, sadness, unhappiness or dysphoria. The psychopathology that presents itself must be observed as it relates to developmental processes and patterns. The forms of psychopathology are complicated by a high degree of covariation and comorbidity among different symptoms, syndromes or disorders (Compas, Orosan and Grant, 1993). For example depressed mood in adolescents is rarely experienced in the absence of other negative symptoms, such as anger, anxiety or hostility. Mood is defined as the disposition to react with certain characteristic emotions during a time period greater than

a few moments but less than a lifetime. Emotional reactivity is an essential part of mood, and emotional response to thoughts related to internal and external environments, help to produce mood. Therefore stressful events, along with negative cognition related to these events and to the individual's appraisal of her ability to cope can significantly impact mood. According to Lazarus (1984), changes in pleasant / unpleasant events are highly related to mood and the level of stress is impacted by pleasant / unpleasant events and mood, creating a feedback loop with the impact being multidirectional.

Compas (1987) sees the impact of stressful life experiences being dependent on the way an individual attempts to cope. The degree to which coping is effective may depend on the "goodness of fit" between the adolescent and the environment. This "goodness of fit" depends on the environmental context and the nature of the stressor, along with the availability of resources for coping. The adolescent's developmental level, prior history and preferred styles of coping responses also effect the "goodness of fit".

Attempts to cope have two major functions: regulating stressful emotion and altering the troubled adolescent - environment relation that is causing the distress (Lazarus, Folkman, 1984). Usually coping involves both functions. Coping is further defined by Lazarus "as constantly changing cognitive and behavioral efforts to manage specific external and / or internal demands that are appraised as taxing or exceeding the resources of the person." (Lazarus, Folkman, 1984). Coping is not limited to successful efforts, but includes all the purposeful attempts to manage stress regardless of the effectiveness of the attempt. Coping efforts can be delineated into two types of

strategies: those that act on the stressor (problem focused), in which the individual attempts strategies for problem solving or altering the relationship between herself and the environment and those that regulate emotional states associated with or resulting from the stressor (emotion focused). Emotion focused strategies include cognitive reframing (changing the way one looks at the situation), avoiding the stressor and / or attempting to see the positive within the situation. Adjustment or adaptation can be facilitated by emotional regulation achieved by avoiding the stressor, cognitively reframing the stressor, or selectively attending to the positive aspects of the stressor. The emotional and problem focused coping can be carried out using either the cognitive or behavioral channels (Compas, 1987).

With adolescents, a cognitive orientation to intervention is essential. According to Piaget, adolescence is the time of formal operations. The cognitive structures are more fluid during this developmental time and often teens are excited about “thinking about thinking” (Wilkes, Belsher, Rush, Frank, et. al., 1994). Teens are also less resistant to change than adults. The structure of cognitive techniques which engage the teen in a partnership to attain mutual goals is often more congruent with the burgeoning self reliance adolescents are attempting to achieve. According to Wilkes, et. al., change measures used, such as behavior logs, journals and other strategies, assist the teen to view cognitive interventions as helpful. They indeed “own” the interventions (Wilkes, et. al., 1994). Focusing on coping techniques such as impulse control, reality testing and perceptions of life circumstances, are part of this approach also. Teens often do not recognize the variety of alternative actions when responding to a situation. Providing

assistance to identify the roots of hopeless and pessimistic cognition regarding life, such as the belief they are worthless failures, becomes necessary when attempting to assist teens in changing their approach to stressful life events (Pfeffer, 1990).

Klinger (1993) feels that cognitive-behavioral methods seem to alter the way an individual construes herself and her experience. These methods pay attention to covert “self talk” and attempts to modify this “talk” directly. Cognitive procedures are aimed at eliminating stress producing cognition through the use of three strategies: (1) awareness of thoughts and feelings and identifying anxiety / stress triggers, (2) monitoring and counting dysfunctional automatic thoughts, and (3) raising questions to evaluate evidence for or against dysfunctional belief to elicit alternative views --”decatastrophize”.

Wegner (1993) writes that emotional reactions are interlaced with cognitive processes, and cognitive restructuring can, therefore, be used to control moods.

In exploring interventions which impact stress, mood and the individual’s perceptions of her capacity to cope, research describes cognitive behavioral approaches as promising (Ellis, 1961, Beck, 1979). These methods are also easily applied to a group setting, making the approach time and cost effective. Adolescents respond well to peer support. Fensterheim (1991) has shown that group processes provide increased speed of learning alternative behavioral approaches and facilitate compliance with exercises and their application.

In Clarke, Hawkins, Murphy, Sheeger, Lewinsohn and Selby’s (1995) research article, they describe their work with at risk ninth and tenth grade adolescent groups in three suburban high schools. This study focuses on prevention of unipolar depression in

an at risk population with a focus on diagnostic outcome. At risk teens were identified through screening using a self report diagnostic tool, the CES-D (Center for Epidemiology Scale for Depression). Further screening using diagnostic interviews with the K-SADS (Childrens Schedule for Affective Disorders and Schizophrenia), eliminated teens with DSM III-R affective disorders, major depression and dysthymia. These adolescents were referred to non-experimental services. The remaining population was randomly assigned to either the Adolescent Coping with Stress fifteen session course or to a “usual care” control condition. This “usual care” meant the teen was free to continue with any intervention she had been involved in before the research, or to seek help during the study (Clarke et. al., 1995).

The teens were reassessed after the intervention using both the CES-D and the K-SADS diagnostic interview. A Hamilton Depression Rating Scale was extracted from the information gained through the K-SADS. The reassessment was also done at six and twelve month intervals. Using survival analysis, x squared procedures and the Matel-Cox test, data were analyzed. There were fewer cases of either major depression and / or dysthymia noted in the experimental group across the follow up period (Clarke et. al., 1995). Post-intervention measure of the CES-D favored the Adolescent Coping with Stress Course. However over time the effects did not reach significance (Clarke et. al., 1995).

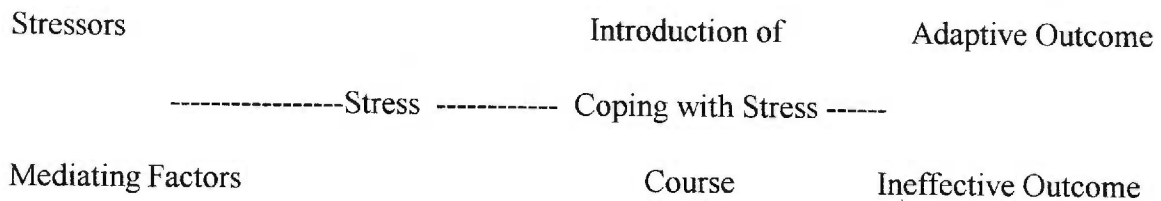
In their summary the authors state the findings support an advantage for the participants in the intervention group across a twelve month period. They acknowledge a complete prevention of affective disorders did not occur. The researchers encouraged

Clarke, the theoretical orientation of the Adolescent Coping with Stress Course is best described as multifactorial, and is based on the model of depression proposed by Lewinsohn, Hoberman, Teri and Hautzinger (1985). This model proposes that increased dysphoria is the result of numerous etiological elements. These elements include negative cognition, the perception of the level of stress, predisposing vulnerabilities / risk factors and immunities to depression that act either in concert or combination. Predisposing vulnerabilities include: being female, a previous history of depression and having depressed parents. Immunities refer to high self esteem, coping skills, and high frequency of pleasant events and activities. This model also proposes that perceived stressors can disrupt an individual's adaptive functioning and initiate a chain of events impacting on mood. The interventions taught in Clarke and Lewinsohn's (1995) course train adolescents in cognitive restructuring skills, helping to reduce negative cognition and interrupt the chain reaction leading to dysphoric mood. According to Clarke and Lewinsohn (1995), the development of the Adolescent Coping with Stress Course is guided by the hypothesis that: "Teaching individuals new coping mechanisms and strengthening their repertoire of current coping techniques and strategies provides them with some measure of 'immunity' or resistance against the development of later affective disorders"(Clarke et. al., 1995).

According to the Roy Adaptation Model, the individual person is defined as an adaptive system with both physiological and cognitive coping mechanisms. These mechanisms assist adaptation in a holistic framework, and lead to goal attainment and a wholeness of the individual.

When perceived stressors overwhelm the coping strategies, the individual cannot respond effectively. The individual's wholeness and capacity to adapt is then compromised. In this context, the introduction of new adaptive mechanisms, such as those taught in the Adolescent Coping with Stress Course (Clarke, Lewinsohn, 1995), into the adolescent's repertoire of coping strategies will impact the teens perception of the degree of stress and affect mood.

Perceived stressors can disrupt an individual's adaptive functioning and initiate a chain of events impacting on mood (Lewinsohn, et. al., 1985). Lewinsohn's depression model corresponds to the Roy Adaptation model, in that the numerous etiological elements (stressors) may lead to dysphoria (ineffective coping). The interventions taught in the coping with stress course are intended to intercept the chain of events and lead to an adaptive outcome.



Research Question: Will the introduction of a structured coping with stress intervention, the Adolescent Coping with Stress Course (Clarke, Lewinsohn, 1995) impact perceived stress as measured by the Perceived Stress Scale (PSS) and self identified mood (dysphoria) as measured by the mood questionnaire (CES-D) in an identified adolescent population.

Chapter 3: Methods

The research method was a quasi-experimental, non-equivalent groups, pre-test / post-test design. The constraints of working with the adolescent population in a rural area, and difficulty applying pure randomization due to selection constraints and sample size, made it difficult to approach this as an experimental design. The introduction of a control group provided some balance for the other confounding factors. Threats to internal validity, history, testing, mortality and selection bias, are discussed in Chapter Five.

Subjects:

A convenience sample was recruited from an adolescent program sponsored through the Boys and Girls Aid Society. The population consisted of teen mothers, between the ages of fourteen and twenty, living on their own, receiving assistance through Adult and Family Services (AFS) and involved in an educational program leading to the acquisition of a GED. Participation was voluntary. Teens interested in volunteering were given an informed consent (Appendix 8) and their questions answered. Permission from parents or legal guardians was obtained. An attempt to recruit twenty five to thirty teens was made. Contacts with professional adolescent counselors were maintained for possible referral in the unlikely event a teen felt overwhelmed and unable to cope. All information was kept confidential. Exclusion criteria included an inability to verbally commit to the program and attend all sessions, active psychosis, suicidal or homicidal behaviors.

Participants were to be randomly assigned to the intervention / experimental group or to the control group. The control group continued to participate in the normal program offered by the Boys and Girls Aid Society. Both groups were asked to complete a demographic survey (Appendix 1), along with pre and post tests measuring the variables of mood and perceived stress.

Procedure:

The structured intervention was based on the work of Clarke and Lewinsohn (1995), whose Adolescent Coping with Stress Course provided the framework for the groups. This approach was a psychoeducational, cognitive-behavioral approach based on the hypothesis that teaching teens new coping mechanisms and strengthening their repertoire of current coping techniques and strategies provides them with some measure of “immunity” against the development of affective disorders (Clarke, Lewinsohn, 1995).

The course consisted of fifteen lessons, which were offered at a pace of two to three forty-five minute blocks per week. The first few sessions provided an overview of depression, and its relationship to stressful situations. Subsequent sessions focused on teaching cognitive-restructuring skills and techniques for modifying irrational or negative self-statements and thoughts which are hypothesized to contribute to the development and maintenance of depressive disorder (Clarke and Lewinsohn, 1995). A workbook was provided for each participant, and homework assigned. The instructions for the homework were reviewed during the class, with help provided by the instructors if needed. The class involved discussion of personal issues along with methods of how to

cope more effectively with daily hassles. The participants were asked to complete a demographic survey, and two self-report questionnaires (the Mood Questionnaire and the Perceived Stress Scale), at the beginning and end of the course. The results of these were analyzed to assess the effectiveness of the intervention. The identities of the participants were kept confidential by recording results using numbers only. Participants in the control group were also asked to complete the survey and the two measures at concurrent times. Their identities were also kept confidential.

Measures:

Measures used included the Mood Questionnaire (Appendix 2), which was already part of the structured course, and the Perceived Stress Scale - PSS (Appendix 3), which we introduced into this study to operationalize perceived stress.

The Mood Questionnaire is a twenty item self report measure. The actual name of the scale is the Center for Epidemiological Studies - Depression Scale (CES-D) developed by Radloff in 1977. It is a Likert type scale which measures depressive symptoms. The individual rates the frequency of symptoms over the past week. The responses range from "rarely or none of the time" to "most or all of the time". Radloff (1977) reported coefficient alpha's of .84, .85, and .90 in her field trial. In a critique of the CES-D by Devins and Orme (1985), it is stated that these levels meet and exceed the standards of reliability. The critics indicate the focus of the CES-D on distress symptoms prevalent in a non-psychiatric population make it useful in application to hypothesis testing research among non-psychiatric groups (Devins, Orme in Keyser, Sweetland,

eds.,1985).

The PSS (Cohen, Williamson, 1988) assesses the degree to which individual's appraise their life situations as stressful. This is consistent with current theories of stress which emphasize the importance of the individual's appraisal of stress and coping capacity, rather than objective occurrence of events (Lazarus, Folkman, 1984). Martin, Kazarian, Breiter (1994), suggest that after reviewing the literature, the Perceived Stress Scale presented as a scale which assessed the degree to which a person appraised her life situations as stressful. The PSS can be conceptualized as "measuring the outcomes of person-environment stress transactions" (Martin, et. al., 1994). The authors go on to suggest that the PSS measures the "cognitive and affective outcomes of all factors that contribute to the experience of stress". There is a noted substantial correlation between this scale and the CES-D. Although the perception of stress may be a symptom of depression, the PSS and CES-D are not measuring the same thing (Cohen, et. al., 1983). The PSS is also a Likert type scale with a five point response format and items scored zero to four. This scale requires at least a junior high school reading level, and was normed on three samples which yielded coefficient alpha reliabilities of .84, .85 and .86 with good evidence of concurrent and predictive validity (Cohen, et. al., 1983). Freshman at the University of Oregon, with a wide range in ages, made up one of the three sample groups. The use with younger adolescents was not addressed.

Protection of human subjects:

Before the subjects were asked to participate in the study, the investigators went

over the course work and consent forms with the case managers from the Boys and Girls Aid Society. The demographic information sheet, Mood Questionnaire, and the PSS (Appendices 1,2 and 3) were explained. The case managers were aware that their clients were participating in the study, but they were not informed of the individual test results.

The informed consent provided for the protection and rights of the selected group. The informed consent was reviewed with the subjects before data collection began, and explanations or clarifications were given as needed. Each subject received a copy of the consent. Since there was some possibility that discussion about previous abuse in the teens home of origin might occur during the course, the investigators' requirement to inform Children Services was included under the possible risks. The risk was considered as low to moderate in seriousness and probability. This group of adolescent mothers function independently, and sign their own consents for treatment.

The benefits to this group of young mothers included increased coping skills, improved self esteem, and the ability to respond to stressors effectively. Each participant received her own workbook, and there was no cost to the participants. The investigators supplied all materials for the course. There was a party at the conclusion of the course.

Confidentiality was maintained by assigning identification numbers to each subject. Each subject was asked to give her first name and last initial only on the front page of the packet. The packet consisted of the demographic questionnaire, Mood Questionnaire, and the PSS. Each sheet had the identification number that was recorded on the face sheet.

The face sheets were kept separately from the rest of the teaching materials in a

locked file cabinet. The only other reference made to the face sheets was during the post testing. After post testing the face sheets were destroyed to assure that no reference could be traced back to the subjects. Subjects in this study are referred to only by the number of subjects, age ranges, living situation and if they received prenatal care.

The participants had the right to refuse to be a part of the study. They were given the opportunity to continue to participate in the course. The investigators discussed resources for coping with any ongoing emotional or psychological stress. A list of mental health professionals was available to the subjects. The subjects received the telephone numbers of the investigators, the research advisor, and the IRB. The investigators encouraged the subjects to voice their concerns and needs.

Chapter 4: Results

Data: Group 1 - Control N=7

Group 2 - Experimental N = 8

O -1 Pre - intervention administration of Demographic Questionnaire, Center for Epidemiological Studies Depression Scale (CES-D - Mood Questionnaire) and Perceived Stress Scale(PSS).

X Independent Variable Intervention - Adolescent Coping with Stress Course (Clarke, et al, 1994).

O -2 Post - intervention administration of Mood Questionnaire (CES-D) and PSS.

Dependent Variables: Group (1,2), present age, age at first pregnancy, living situation (where and with whom), income in addition to AFS assistance(yes = 1, no = 2), last grade completed (ed), prenatal care (y, n), transportation (y, n for own car, with friends, walk, or with parents),

Outcome variables of interest : total scores on pretest and post test CES-D and PSS and the differences between pre and post tests on these same measures.

O -1	X	O -2	Group 2

O -1		O -2	Group 1

Data Analysis:

Frequency counts of demographic variables, pre and post CES-D and PSS and differences, means and standard deviations (SD) on age, age pregnant, education, pre and post CES-D and PSS and the differences were calculated. Correlations (Pearson's r) with pretests of the PSS and CES-D, post tests of the PSS and CES-D, and the differences, all within groups were also analyzed. Two tailed paired t tests within groups for both pre and post tests of the PSS and CES - D were calculated. Regressions of age, age at pregnancy, education, income, transportation-car , walk and living situation (with whom) on differences for both PSS and CES-D were analyzed.

Frequency counts, means, and standard deviations were used to broadly describe the sample, and its variability. These computations and the raw data are in Appendix 6. Tables 1, 2 and 3 describe the means, SD, and minimum and maximum values of the variables within groups and as a whole sample.

Comparison of experimental and control subjects on age, age at pregnancy, education, income, pretest CES-D and PSS did not reveal statistically significant difference between groups (see Appendix 6). To be noted: on income, two teens in the experimental group stated they received income in addition to the AFS assistance and on the pretest CES-D scores the mean of the experimental group was higher than the control group.

Subject Retention:

The sample population (N 27), was divided and assigned to either the experimental (N 13) or the control (N 14) group. The initial demographic questionnaire

and pretests of the CES-D and PSS were completed. A final N of 15 subjects (7 in the control and 8 in the experimental group), completed post intervention measures, with data analyzed from this final N of 15. Subject drop out was slightly higher in the control group.

The two-tailed paired -t analysis of the pre and post CES-D and the PSS was used to assess the effectiveness of the intervention. This analysis takes into account the relatedness of the samples on the pre and post measures, and is appropriate to use with interval data. In this study, the two - tailed paired t for the pre and post CES - D is calculated as .662 for the control group and .377 for the experimental group with a $p < .05$. The two -tailed paired t of the pre and post PSS is calculated as .919 for the control and .067 for the experimental group with $p < .05$. The paired t of the experimental group at .067 is approaching significance (see Tables 4 & 5). Independent t tests, attempted chi squares and multiple regressions were used to assess the behavior of the samples, and to discover significant differences between the samples in age, age at pregnancy, educational level, income above welfare, transportation and living situation, stress and mood measures. No statistically significant differences were discovered and the samples behaved statistically as randomly assigned groups. An important exception is the independent t calculated for the pre test CES-D scores, which is .083, with $p < .05$.

Correlations between stress and mood were measured by Pearson's r using the pretest PSS and CES-D scores and the post test PSS and CES-D scores. An R of .7832 with a probability .037 ($p < .05$) on the correlation between the pre PSS and pre CES - D of the control group is considered significant. For the experimental group the

correlation had an R of .6276 with a probability of .096 ($p < .05$), which is considered not statistically significant. On post measures for stress and mood there were no statistically significant correlations between stress and mood measures within either the control or the experimental groups (see Appendix 6).

Number of valid observations (listwise) = 15.00					
Variable	Mean	Std Dev	Minimum	Maximum	Valid N Label
AGE	18.27	1.83	14	20	15
PREG	15.80	1.86	13	19	15
ED	9.40	1.06	8	11	15
PRESTRES	18.53	4.84	9	26	15
POSSTRES	21.13	6.19	14	37	15
DIFSTRES	-2.73	7.10	-14	10	15
PREMOOD	21.80	10.37	4	40	15
POSMOOD	25.80	14.28	3	51	15
DIFMOOD	-4.00	14.47	-27	24	15

Table 1

GROUP: 1

Number of valid observations (listwise) = 7.00					
Variable	Mean	Std Dev	Minimum	Maximum	Valid N Label
AGE	18.29	2.36	14	20	7
PREG	16.00	1.63	13	18	7
ED	9.14	.90	8	10	7
PRESTRES	18.43	6.24	9	26	7
POSSTRES	18.14	3.44	15	25	7
DIFSTRES	.00	6.98	-9	10	7
PREMOOD	16.86	9.12	4	27	7
POSMOOD	18.86	12.05	3	35	7
DIFMOOD	-2.00	11.50	-24	10	7

Table 2

GROUP: 2

Number of valid observations (listwise) = 8.00					
Variable	Mean	Std Dev	Minimum	Maximum	Valid N Label
AGE	18.25	1.39	16	20	8
PREG	15.63	2.13	13	19	8
ED	9.63	1.19	8	11	8
PRESTRES	18.63	3.66	13	23	8
POSSTRES	23.75	7.05	14	37	8
DIFSTRES	-5.13	6.71	-14	7	8
PREMOOD	26.13	9.91	12	40	8
POSMOOD	31.88	13.89	12	51	8
DIFMOOD	-5.75	17.26	-27	24	8

Table 3

GROUP: 1
t-tests for Paired Samples

Variable	Number of pairs	Corr	2-tail Sig	Mean	SD	SE of Mean
PRESTRES				18.4286	6.241	2.359
POSSTRES	7	.004	.992	18.1429	3.436	1.299

Paired Differences						
Mean	SD	SE of Mean	t-value	df	2-tail Sig	
.2857	7.111	2.688	.11	6	.919	
95% CI (-6.291, 6.863)						

Table 4

GROUP: 2
t-tests for Paired Samples

Variable	Number of pairs	Corr	2-tail Sig	Mean	SD	SE of Mean
PRESTRES				18.6250	3.662	1.295
POSSTRES	8	.350	.395	23.7500	7.046	2.491

Paired Differences						
Mean	SD	SE of Mean	t-value	df	2-tail Sig	
-5.1250	6.707	2.371	-2.16	7	.067	
95% CI (-10.732, .482)						

Table 5

See Appendix 6 for the paired t of pre and post mood (CES-D) for both groups.

Chapter 5: Discussion

This study differs from Clarke and Lewinsohn (1995), in the lack of statistically significant findings supporting the structured intervention. Clarke's data analysis (using ANOVA for the CES-D from pre to post intervention), resulted in an $F(1, 113)$ of 3.91 (one tailed $p < .05$). This is interpreted as favoring the preventive intervention (Adolescent Coping with Stress Course). Clarke and his colleagues did not use measures to assess perceived stress.

In this study the paired t of the pre and post CES-D at .377 with a $p < .05$, is not statistically significant. However, the independent t of the pre CES-D between groups at .083, approaches statistical significance. Therefore the null hypothesis assumption may be void. The groups are not similar in this respect, which may skew the final outcome results. A larger sample size might have produced scores more evenly reflected in both groups, therefore affecting the paired t results of the CES - D and producing more reliable outcome results.

The post test scores of the experimental group reflected a general increase in perceived stress and an increase in negative mood, as measured by the Mood Questionnaire (CES-D). Clarke and Lewinsohn in their data analysis found that the post intervention measure of the CES-D favored the Adolescent Coping with Stress Course. Our study findings are not congruent.

The paired t of the pre and post PSS of the experimental group approaches significance at .067. The results reflect possible impact of the intervention. The

independent t test on the pre PSS for both groups supported the null hypothesis with the assumption that the pre intervention variances were equal.

Confounding Factors and Limitations:

The sample population of Clarke's study, was identified as "demoralized" and at risk for future depressive episodes. His mixed gender sample differs from the present study sample in various ways. The teens studied by Clarke were ninth and tenth grade adolescents from three suburban high schools in northern Oregon. The present study sample are teen mothers in rural southern Oregon, receiving AFS assistance, attending GED and Life Skills classes through Boys & Girls Aid Society. This sample has a mean age of eighteen, with an education mean of ninth grade. Although Clarke, et. al., do not discuss the family support or living situations of this sample group, it can be assumed these are teens living at home or with care takers, attending school full time and free of the responsibilities of parenting.

The teens in the present study, although students, became pregnant at a mean age of fifteen and have varying levels of support. Completing homework was difficult due to living situations where partners were intrusive and controlling. Some of the teens stated they were unable to be honest in cataloguing negative thinking because their partner would read their work and as one student said "My boyfriend ripped up my workbook-- he read some of the things I wrote and didn't like it." For some teens in this sample the peer support of the group is counter balanced by demanding relationships at home. For others, attempting new communication techniques resulted in negative

partner responses and increased stress.

The researchers original intent to randomize the assignment of the groups was impacted by the realities of group assignment by Boys and Girls Aid Society. The groups had been formed by the Society by assigning the first twenty to twenty five teens who called to join the Life Skills- GED class to a group and assigning the next twenty to twenty five to a second group. One group met Monday and Wednesday and the other Tuesday and Thursday. Data analysis methods reveal the groups behaved statistically as randomly assigned groups, except as mentioned regarding the pre CES-D scores.

The researchers hoped to have a consistent group population who could agree to consistent participation, attendance and follow through. The original structure of the course proposed was fifteen, fifty minute sessions over a ten week period. Accommodations of the original design became necessary due to a number of factors. Because the group assignments had been made by the Boys and Girls Aid Society, reassignment was not feasible. Since the Adolescent Coping with Stress Course was presented as part of the required Life Skills class, the teens were given the option of participating. Most of the teens agreed to participate, although some of them did not fill out the pre and post tests. Others participated but did not sign consents to participate in the research study. A small group filled out the pre tests but were unavailable to fill out the post tests due to births, child care issues and lack of follow through. For these reasons, the original N of twenty seven for both the experimental and control groups was reduced to a final N of fifteen. This was lower than the proposed research N of twenty to thirty, and assumptions regarding follow through proved to be optimistic.

Fifteen lessons were presented within a four week period with classes meeting for two to three, forty-five minute blocks of time each session. This allowed the researchers to cover the material in this shortened time span, yet left little practice time to reinforce the learning. The time constraints of the summer session, summer vacations for the teens and the researcher's deadlines were all factors necessitating these accommodations to the original research design.

Feedback from the participants revealed a desire for more action oriented learning. Role play, relaxation / meditation practice, and self discovery art projects are some activities identified as desirable. The need to combine lessons to cover all the material in the time frame allotted decreased the amount of time available to experiment with the new ideas.

Timing of the class seemed less than ideal. During the summer session, the teens attended GED classes from 7:30 AM to 11:00 AM, and started the Coping with Stress class after lunch. Attentions seemed to waver as the river beckoned. Although participants agreed to attend all groups, in reality attendance was sporadic. Boys and Girls Aid Society added teens to the group after about a third of the lessons had been completed, which increased the amount of time required for effective review. The review process often felt unwieldy.

The present research sample population has numerous psychosocial stressors. It is difficult to learn new coping skills when you are faced with unstable living situations, financial pressures, and relationship issues which may include threats to safety and substance abuse issues. Life circumstances demand that these teens behave as adults.

Glen and Nelson (1989) state that motherhood often gives the lives of the teens focus, making them feel needed and significant. This idea is reinforced in our experience, where the adolescents identify caring for their children as the main focus of their lives and something they do well. Society also reinforces this belief by treating the child as an adult woman as soon as she becomes pregnant (Glen, Nelson, 1989). The dichotomy between treatment of the teen as an adult and the teen's actual cognitive level of maturity became apparent during group discussions. This sample population is cognitively just beginning to enter the formal operational stage as defined by Piaget. The teens' difficulty identifying feelings, the relationship of feelings to behavior with resulting consequences, and the use of denial and magical thinking to cope with very difficult situations was evident. The cognitive style of these teens is to see the world in black and white and rigidly defend their positions. The researchers observation is that the introduction of awareness of the impact of thoughts and beliefs on emotions and their consequences encouraged by the Coping with Stress Course produced cognitive dissonance. For this group of young women, the belief that they are powerless victims had been challenged. This increased discomfort accounts for the increase in perceived stress scores post intervention within the experimental group, and is accepted by the researchers as a natural result of the cognitive dissonance.

Consideration and Caution:

One major consideration is the need for further studies with a larger sample, incorporating the recommendations for action oriented activities in an expanded time

frame. This would provide time for concrete practice of the skills learned. The needs of this population of teen mothers are broadly scattered. The researchers found a narrowly focused intervention did not meet the needs of this group. After administration of the post test, a discussion with the teens of the experimental group ensued. Some of the recommendations cited previously were suggested, and the researchers offered to meet with the young women individually to discuss any concerns or questions they had. The researcher's suggest that the cognitive behavioral psychoeducational approach to intervention alone is not a good fit with this adolescent group.

Recommendations:

The researchers recommend modifying the Adolescent Coping with Stress Course by eliminating homework and adding action oriented learning activities. To modify the impact of cognitive dissonance, greater emphasis on stress reduction techniques, role playing and in group practice should be emphasized. Extending the length of the course would also offer opportunities for behavioral practice, trust building and group support. Teaching the course to the case managers of Boys and Girls Aid Society would allow the case managers to use the information in their Life Skills classes. This may be a more practical approach due to the already established and on going relationship between the case managers and the teens.

An additional recommendation for intervention is to use the Adolescent Coping with Stress Course with an early adolescent population. The mean age of pregnancy in this study is fifteen. Introduction of self awareness to a pre- adolescent group, through

the identification of thoughts, feelings, beliefs and consequences, may possibly impact future decision making. Many of the teen mothers expressed feelings that the information would have been helpful “years ago”, it was a “Now you tell me!!!!” response.

The Adolescent Coping with Stress Course could also segue into a process oriented group. Creating awareness of life stressors and the possibility of control and change, led to cognitive dissonance for the sample population. The course is too short to create permanent change but does introduce new concepts. For some of the teens it was easier to accept their situation when they felt they were powerless to change it. The presentation of new information, which encouraged development of intrapersonal skills, (such as self assessment, self control and self discipline) introduced the possibility for change.

The largest barrier to change is this populations projection of feelings onto others and blaming others. We recommend overcoming the barriers to change become the goal for a follow - up process group. This group could be offered to those teens who have completed the Adolescent Coping with Stress Course and are interested and willing to make the commitment to participate. A process group could explore negative introjects from early childhood, and assist the teens to express the introjected anger. Awareness, owning and expression of feelings are the skills needed to reduce the cognitive dissonance produced during the Adolescent Coping with Stress Course.

The teen participants unanimously identified their children as the ‘positive’ in their lives and expressed interest in learning about their children’s emotional and

physical development. Many comments were made to the effect "I do NOT want to parent like MY parents! I want to do it different." By learning to meet their own needs while providing satisfaction enhancing activities for themselves and their children, and asking for help, rather than getting needs met through regressive behaviors (anger and aggression) these teens could become effective parents, meeting their stated goals.

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APPENDIX

Appendix I

First Name and Last Initial: _____

ID # _____

ID # _____

Demographic Questionnaire

The answers to the following questions will be kept confidential. This information will be useful when the course is complete to help JoAnn and Allyson get a better understanding of your situation and needs.

For each question check the one answer that best applies to you.

1. Current Age: 14__ 15__ 16__ 17__ 18__ 19__ 20__
2. Age when you became pregnant: 14__ 15__ 16__ 17__ 18__ 19__ 20__
3. Where do you live?: With parents__ With friends__ With boy friend__ On your own__
4. What city do you live in?:
Roseburg__ Winston__ Sutherlin__ Glide__ Out side city limits__
5. Do you receive income from any other sources other than welfare? Yes__ No__
6. Highest grade completed in high school: 8__ 9__ 10__ 11__ 12__
7. Did you receive prenatal care? Yes__ No__
8. Do you have transportation? Own car__ Ride with friends__ Walk__ Ride with parents__

Appendix 2

Mood Questionnaire

For the following statements, circle the number for each statement which best describes how often you've felt this way DURING THE PAST WEEK:	Rarely or none of the time	Some or a little of the time	Occasionally or a moderate amount of time	Most or all of the time
1. I was bothered by things that usually don't bother me.	0	1	2	3
2. I did not feel like eating; my appetite was poor.	0	1	2	3
3. I felt that I could not shake off the blues, even with help from my family or friends.	0	1	2	3
4. I felt that I was just as good as other people.	3	2	1	0
5. I had trouble keeping my mind on what I was doing.	0	1	2	3
6. I felt depressed.	0	1	2	3
7. I felt that everything I did was an effort.	0	1	2	3
8. I felt hopeful about the future.	3	2	1	0
9. I thought life had been a failure.	0	1	2	3
10. I felt fearful.	0	1	2	3
11. My sleep was restless.	0	1	2	3
12. I was happy.	3	2	1	0
13. I talked less than usual.	0	1	2	3
14. I felt lonely.	0	1	2	3
15. People were unfriendly.	0	1	2	3
16. I enjoyed life.	3	2	1	0
17. I had crying spells.	0	1	2	3
18. I felt sad.	0	1	2	3
19. I felt that people disliked me.	0	1	2	3
20. I could not get "going".	0	1	2	3
<p>To score this questionnaire, add up the numbers you've circled. The total is your score. Notice that some of the questions (numbers 4, 8, 12, and 16) are scored in reverse. You should add the numbers as they are printed on the questionnaire.</p>	<p>Your total is: <input type="text"/></p>			

Appendix 3

PERCIEVED STRESS SCALE

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate with a check how often you felt or thought a certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

3. In the last month, how often have you felt nervous and "stressed"?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

4. In the last month, hoe often have you felt confident about your ability to handle your personal problems?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

5. In the last month, how often have you felt that things were going your way?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

6. In the last month, how often have you found that you could not cope with all the things that you had to do?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

7. In the last month, how often have you been able to control irritations in your life?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

8. In the last month, how often have you felt that you were on top of things?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

9. In the last month, how often have you been angered because of things that were outside of your control?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

0=never 1=almost never 2=sometimes 3=fairly often 4=very often

Appendix 4

Course Outline

Session

- 1 Getting to Know Each Other
- 2 Coping with Stress
 - What causes depression.
 - Stress and the blues.
- 3 Changing Your Thinking
 - Help each student identify his /her most frequent negative and positive thoughts.
 - Determine the ratio of positive to negative.
 - Record daily the worst negative thoughts and the number of times they are thinking negatively.
- 4 Stressful Situations and Negative Thinking
 - Identifying activating events.
- 5 The Power of Positive Thinking
 - Help students come up with positive statements about each person in the room.
 - Record the positive statements about themselves.
- 6 Changing Negative Thinking to Positive Thinking
 - Distinguish between personal and nonpersonal negative thoughts.
 - Help teen use the information to make test of negative personal thoughts which are most troublesome.
 - Changing negative to positive:
 - Discuss how to use positive thoughts to counter negative thoughts.
 - Help teen to develop positive counter thoughts for their individual negative thoughts.
- 7 Irrational Thinking
 - Identifying irrational thinking and providing feedback during exercises using cartoons to identify irrational beliefs.
 - Assist the teen to develop positive counter thoughts and beliefs for her own negative thoughts.

- 8 Disputing Irrational Thinking
 Identify irrational beliefs in cartoons and replace with positive .
 Convert non-personal to personal by identifying activating event and decreasing personal reaction to it.
- 9 The C-A-B- Method
 Demonstrate how to analyze negative feeling with C-A-B activating event, belief, consequences
- 10 Dealing with Activating Events
 Present five ways to deal with activating events and practice problem solving using cartoons as a catalyst.
- 11 More C-A-B Practice
 Practice using C-A-B by analyzing cartoon or identifying the source of irrational beliefs and how to counter them.
- 12 Thought-Stopping Techniques
 Present three techniques to use to stop negative thinking.
 Help teen select one to try during the next week.
- 13 C-A-B in Your Life
 Discuss how the teen might use C-A-B in real life situations.
- 14 Planning for Stressful Situations
 Each teen will make a list of major stress event that may occur and help them to think about how these event will affect their behavior.
 Help teen come up with a prevention plan.
- 15 Preventing the “Blues”
 Assist teen to identify everyday problem areas and select skills to cope with them

Appendix 5

Carnegie Mellon University

**Department of Psychology
Pittsburgh, PA 15213
Telephone: (412) 268-2336
Fax: (412) 268-3294**

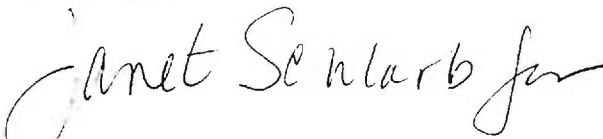
May 8, 1996

Jo Ann Berenbach, RN
1562 NW Randall Ct.
Roseburg, OR 97470

Dear Ms. Berenbach:

You have my permission to use the PSS in your study. I'd appreciate your letting me know how the work turns out. Good luck.

Sincerely,

A handwritten signature in cursive script that reads "Sheldon Cohen".

Sheldon Cohen
Professor

SC/sk

OHSU

**OREGON
HEALTH SCIENCES UNIVERSITY**

3181 S.W. Sam Jackson Park Road, Portland, OR 97201-3098
Mail Code L106, (503) 494-7887 Fax (503) 494-7787

Institutional Review Board/Committee on Human Research

DATE: May 29, 1996

TO: J. Berenbach/A. Myers, SN-ADM
c/o Kristen Thompson

FROM: The Committee on Human Research
MacHall Rm. 2160, Ext. 7887 *Lynda*

SUBJECT: IRB#: 4140
TITLE: Adolescent Stress: It's Impact on Mood and Effective Interventions

This confirms receipt of the revised consent form(s), and/or answers to questions, assurances, etc., for the above-referenced study.

It satisfies the requirements of the Committee on Human Research. The protocol and proposal to use human subjects are herewith approved. The IRB# and the date of this memo must be placed in the top right corner of the first page of the consent form. This is the approval date of this revised consent form.

Investigators must provide subjects with a copy of the consent form, keep a copy of the signed consent form with the research records, and place a signed copy in the patient's hospital/clinic medical record (if applicable).

Approval by the Committee on Human Research does not, in and of itself, constitute approval for implementation of this project. Other levels of review and approval may be required, and the project should not be started until all required approvals have been obtained. Also, studies funded by external sources must be covered by an agreement signed by the sponsor and an authorized official of the University. The Principal Investigator is not authorized to sign.

If this project involves the use of an Investigational New Drug, a copy of the protocol must be forwarded to the Pharmacy and Therapeutics Committee (Pharmacy Services - Investigational Drugs, OP-16A).

Thank you for your cooperation.

Appendix 6

GROUP: 1
t-tests for Paired Samples

Variable	Number of pairs	Corr	2-tail Sig	Mean	SD	SE of Mean
PRESTRES	7	.004	.992	18.4286	6.241	2.359
POSSTRES				18.1429	3.436	1.299

Variable	Paired Differences			t-value	df	2-tail Sig
	Mean	SD	SE of Mean			
	.2857	7.111	2.688	.11	6	.919
	95% CI (-6.291, 6.863)					

GROUP: 2
t-tests for Paired Samples

Variable	Number of pairs	Corr	2-tail Sig	Mean	SD	SE of Mean
PRESTRES	8	.350	.395	18.6250	3.662	1.295
POSSTRES				23.7500	7.046	2.491

Variable	Paired Differences			t-value	df	2-tail Sig
	Mean	SD	SE of Mean			
	-5.1250	6.707	2.371	-2.16	7	.067
	95% CI (-10.732, .482)					

GROUP: 1
t-tests for Paired Samples

Variable	Number of pairs	Corr	2-tail Sig	Mean	SD	SE of Mean
PREMOOD	7	.437	.327	16.8571	9.118	3.446
POSTMOOD				18.8571	12.048	4.554

Mean	Paired Differences		t-value	df	2-tail Sig
	SD	SE of Mean			
-2.0000	11.504	4.348	-.46	6	.662
95% CI (-12.639, 8.639)					

GROUP: 2
t-tests for Paired Samples

Variable	Number of pairs	Corr	2-tail Sig	Mean	SD	SE of Mean
PREMOOD	8	-.025	.954	26.1250	9.906	3.502
POSTMOOD				31.8750	13.892	4.911

Mean	Paired Differences		t-value	df	2-tail Sig
	SD	SE of Mean			
-5.7500	17.261	6.103	-.94	7	.377
95% CI (-20.180, 8.680)					

t-tests for Independent Samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
PRESTRES				
GROUP 1	7	18.4286	6.241	2.359
GROUP 2	8	18.6250	3.662	1.295

Mean Difference = -.1964

Levene's Test for Equality of Variances: F= 2.028 P= .178

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	-.08	13	.941	2.598	(-5.809, 5.416)
Unequal	-.07	9.43	.943	2.691	(-6.242, 5.849)

Variable	Number of Cases	Mean	SD	SE of Mean
PREMOOD				
GROUP 1	7	16.8571	9.118	3.446
GROUP 2	8	26.1250	9.906	3.502

Mean Difference = -9.2679

Levene's Test for Equality of Variances: F= .001 P= .980

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	-1.88	13	.083	4.943	(-19.946, 1.410)
Unequal	-1.89	12.95	.082	4.914	(-19.887, 1.351)

Number of valid observations (listwise) = 15.00

Variable	Mean	Std Dev	Minimum	Maximum	Valid	
					N	Label
AGE	18.27	1.83	14	20	15	
PREG	15.80	1.86	13	19	15	
ED	9.40	1.06	8	11	15	
PRESTRES	18.53	4.84	9	26	15	
POSTRES	21.13	6.19	14	37	15	
DIFSTRES	-2.73	7.10	-14	10	15	
PREMOOD	21.80	10.37	4	40	15	
POSTMOOD	25.80	14.28	3	51	15	
DIFMOOD	-4.00	14.47	-27	24	15	

GROUP: 1

Number of valid observations (listwise) = 7.00

Variable	Mean	Std Dev	Minimum	Maximum	Valid	
					N	Label
AGE	18.29	2.36	14	20	7	
PREG	16.00	1.63	13	18	7	
ED	9.14	.90	8	10	7	
PRESTRES	18.43	6.24	9	26	7	
POSTRES	18.14	3.44	15	25	7	
DIFSTRES	.00	6.98	-9	10	7	
PREMOOD	16.86	9.12	4	27	7	
POSTMOOD	18.86	12.05	3	35	7	
DIFMOOD	-2.00	11.50	-24	10	7	

GROUP: 2

Number of valid observations (listwise) = 8.00

Variable	Mean	Std Dev	Minimum	Maximum	Valid	
					N	Label
AGE	18.25	1.39	16	20	8	
PREG	15.63	2.13	13	19	8	
ED	9.63	1.19	8	11	8	
PRESTRES	18.63	3.66	13	23	8	
POSTRES	23.75	7.05	14	37	8	
DIFSTRES	-5.13	6.71	-14	7	8	
PREMOOD	26.13	9.91	12	40	8	
POSTMOOD	31.88	13.89	12	51	8	
DIFMOOD	-5.75	17.26	-27	24	8	

t-tests for Independent Samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
DIFMOOD				
GROUP 1	7	-2.0000	11.504	4.348
GROUP 2	8	-5.7500	17.261	6.103

Mean Difference = 3.7500

Levene's Test for Equality of Variances: F= .950 P= .347

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	.49	13	.634	7.703	(-12.890, 20.390)
Unequal	.50	12.23	.626	7.493	(-12.542, 20.042)

t-tests for Independent Samples of TWALK

Variable	Number of Cases	Mean	SD	SE of Mean
DIFMOOD				
TWALK 1	4	-1.0000	8.756	4.378
TWALK 2	11	-5.0909	16.288	4.911

Mean Difference = 4.0909

Levene's Test for Equality of Variances: F= 1.688 P= .216

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	.47	13	.646	8.695	(-14.693, 22.875)
Unequal	.62	10.37	.547	6.579	(-10.497, 18.679)

t-tests for Independent Samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
AGE				
GROUP 1	7	18.2857	2.360	.892
GROUP 2	8	18.2500	1.389	.491

Mean Difference = .0357

Levene's Test for Equality of Variances: F= 2.106 P= .170

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	.04	13	.972	.983	(-2.089, 2.160)
Unequal	.04	9.44	.973	1.018	(-2.252, 2.323)

Variable	Number of Cases	Mean	SD	SE of Mean
ED				
GROUP 1	7	9.1429	.900	.340
GROUP 2	8	9.6250	1.188	.420

Mean Difference = -.4821

Levene's Test for Equality of Variances: F= .772 P= .396

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	-.88	13	.397	.551	(-1.672, .708)
Unequal	-.89	12.78	.389	.540	(-1.652, .687)

t-tests for Independent Samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
DIFSTRES				
GROUP 1	7	.0000	6.976	2.637
GROUP 2	8	-5.1250	6.707	2.371

Mean Difference = 5.1250

Levene's Test for Equality of Variances: F= .038 P= .849

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	1.45	13	.171	3.536	(-2.514, 12.764)
Unequal	1.45	12.58	.173	3.546	(-2.562, 12.812)

t-tests for Independent Samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
PREG				
GROUP 1	7	16.0000	1.633	.617
GROUP 2	8	15.6250	2.134	.754

Mean Difference = .3750

Levene's Test for Equality of Variances: F= 1.482 P= .245

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	.38	13	.712	.993	(-1.771, 2.521)
Unequal	.38	12.81	.707	.975	(-1.734, 2.484)

t-tests for Independent Samples of TWALK

Variable	Number of Cases	Mean	SD	SE of Mean
DIFSTRES				
TWALK 1	4	2.2500	5.737	2.869
TWALK 2	11	-4.5455	6.861	2.069

Mean Difference = 6.7955

Levene's Test for Equality of Variances: F= .670 P= .428

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	1.76	13	.102	3.864	(-1.553, 15.144)
Unequal	1.92	6.41	.100	3.537	(-1.726, 15.317)

GROUP: 1 - - Correlation Coefficients - -

	PRESTRES	PREMOOD
PRESTRES	1.0000 (7) P= .	.7832 (7) P= .037
PREMOOD	.7832 (7) P= .037	1.0000 (7) P= .

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

GROUP: 1 - - Correlation Coefficients - -

	POSTRES	POSTMOOD
POSTRES	1.0000 (7) P= .	.6568 (7) P= .109
POSTMOOD	.6568 (7) P= .109	1.0000 (7) P= .

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

GROUP: 1 - - Correlation Coefficients - -

	DIFSTRES	DIFMOOD
DIFSTRES	1.0000 (7) P= .	.2991 (7) P= .515
DIFMOOD	.2991 (7) P= .515	1.0000 (7) P= .

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

GROUP: 2 - - Correlation Coefficients - -

	POSSTRES	POSMOOD
POSSTRES	1.0000 (8) P= .	.4886 (8) P= .219
POSMOOD	.4886 (8) P= .219	1.0000 (8) P= .

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

GROUP: 2 - - Correlation Coefficients - -

	PRESTRES	PREMOOD
PRESTRES	1.0000 (8) P= .	.6276 (8) P= .096
PREMOOD	.6276 (8) P= .096	1.0000 (8) P= .

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

GROUP: 2 - - Correlation Coefficients - -

	DIFSTRES	DIFMOOD
DIFSTRES	1.0000 (8) P= .	.4100 (8) P= .313
DIFMOOD	.4100 (8) P= .313	1.0000 (8) P= .

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Demographic Questionnaire

Description of variable assignment for data analysis.

Italicized numbers represent the assigned enumeration used for the data analysis

For questions 1,2, and 6 the variable remains the same.

1. Current Age: 14__ 15__ 16__ 17__ 18__ 19__ 20__
2. Age when you became pregnant: 14__ 15__ 16__ 17__ 18__ 19__ 20__
3. Where do you live?: With parents_*1*_ With friends_*2*_ With boy friend_*3*_ On your own_*4*_ husband_*5*_
4. What city do you live in?:
Roseburg_*1*_ Winston_*2*_ Sutherlin_*3*_ Glide_*4*_ Out side city limits_*5*_ Wilbur_*6*_
5. Do you receive income from any other sources other than welfare? Yes_*1*_ No_*2*_
6. Highest grade completed in high school: 8__ 9__ 10__ 11__ 12__
7. Did you receive prenatal care? Yes_*1*_ No_*2*_
8. Do you have transportation? Own car__ Ride with friends__ Walk__ Ride with parents__
Each answer for this question scored either Yes (*1*) or No (*2*)

	A	B	C	D	E	F	G	H
1	id	group	age	preg	livewith	livein	income	ed
2	41	1	19	16	4	5	2	8
3	47	1	20	16	1	1	2	10
4	61	1	16	15	4	2	2	10
5	62	1	14	13	3	5	2	8
6	63	1	19	17	1	1	2	9
7	2	1	20	17	1	1	2	10
8	22	1	20	18		5	2	9
9	1	2	19	13	4	1	2	11
10	3	2	17	15	1	1	2	9
11	12	2	17	15	1	1	2	10
12	50	2	16	14	1	1	1	10
13	20	2	19	18	1	1	2	10
14	26	2	20	19	1	3	2	8
15	51	2	19	14	4	1	1	8
16	53	2	19	17	4	1	2	11

	A	I	J	K	L	M	N	O
id		prenatal	tcar	tfriends	twalk	tparents	prestres	posstres
1								
2	41	1	2	2	1	2	26	16
3	47	1	1	1	1	2	19	16
4	61	1	2	2	2	1	17	25
5	62	1	2	2	2	1	12	15
6	63	1	1	2	2	2	24	20
7	2	1	1	1	2	2	9	18
8	22	1	1	1	2	2	22	17
9	1	1	1	1	2	2	17	25
10	3	1	2	1	2	1	16	27
11	12	1	2	1	2	1	20	22
12	50	2	2	1	1	1	13	14
13	20	1	2	2	2	1	16	25
14	26	1	2	1	2	2	23	37
15	51		1	2	2	2	23	16
16	53	1	2	1	1	1	21	24

id	A		P		Q		R		S
			difstres		premoood		posmoood		difmoood
1									
2	41		10		24		28		-4
3	47		3		9		14		-5
4	61		-8		11		35		-24
5	62		-3		17		7		10
6	63		2		27		29		-2
7	2		-9		4		3		1
8	22		5		26		16		10
9	1		-8		26		51		-25
10	3		-11		12		39		-27
11	12		-2		36		12		24
12	50		-1		26		14		12
13	20		-9		15		28		-13
14	26		-14		40		43		-3
15	51		7		33		40		-7
16	53		-3		21		28		-7

ASSENT FORM FOR MINORS

- (1) I, _____, state that I am ___ years of age and wish to participate in the program of research being conducted by Jo Ann Berenbach, RN and Allyson Myers RN, student nurses in the psychiatric / mental health nurse practitioner program at Oregon Health Sciences University, in Portland, Or.
- (2) The purpose of the research is to learn more about adolescent stress, its effect on mood and interventions which may help you cope more effectively.
- (3) The study involves participating in either 15 group sessions with Jo Ann and Allyson or filling out questionnaires at the beginning and end of a four week period.
- (4) No one but Jo Ann and Allyson will know which group I am in, or see the answers to my questionnaires. If problems are revealed which could be dangerous, Jo Ann or Allyson may speak with my parents or my AFS case manager.
- (5) No one is making me do this and I can refuse participation at any time.
- (6) If I have any questions about this research, I can ask my parents, AFS case manager, or Jo Ann or Allyson or their faculty advisor Dr. Judy Kendall at 503-494-3890.
- (7) The answers will be used to help nurses learn about adolescent stress and ways to help teens cope with stress.

DATE: _____

Participant Signature: _____

Research: Adolescent Stress: Its Impact on Mood and Effective Interventions

Appendix 8

IRB# 4140

5/29/96

Oregon Health Sciences University**Consent Form****PROJECT TITLE: ADOLESCENT STRESS: ITS IMPACT ON MOOD
AND EFFECTIVE INTERVENTIONS****PRINCIPAL****INVESTIGATORS:** OHSU Graduate Nursing Students:

Jo Ann Berenbach, RNC, BSN (541) 673-0574

Allyson Myers, RNC, BSN (541) 874-2842

Faculty Advisor:

Judith Kendall, RN, Ph.D. (503) 494-3890

OHSU School of Nursing

3181 S.W. Sam Jackson Park Road

Portland, OR. 97201-3098

STUDY

PURPOSE: You have been invited to participate in this research study because of the importance of the relationship between adolescent's perceived stress and mood. The purpose of this study is to learn about how adolescents perceive stress and the impact of stress on mood. Adolescence is a time of growth in many areas of their lives. Some adolescents appear to handle difficult situations easily, while others have more difficulty. Our role, as researchers, is to understand how teen mothers deal with the stress in their lives. We would like to use the information gathered to develop a program in our local rural area that will provide ways adolescents can handle stress more effectively. Your participation in this study will last four weeks.

PROCEDURES:

You will be asked to attend a four week Coping with Stress Course that will be held four times a week. Each class will be one hour long and held at the First Step Program office. A workbook will be provided for each student. There will be homework to complete before each class. The instructions for the homework will be gone over during the class, with help from the instructors available if needed. The class will involve discussion of personal issues along with methods of how to deal with

stress more effectively. You will be asked to complete three short questionnaires before the start of the course and at the end. These questionnaires will ask for short answers regarding your level of stress, mood, and living situation. This information will be used by the researchers to evaluate the effectiveness of the classes. The identities of the participants will be kept confidential. Your selection into the treatment group versus the non-treatment group will be random, i.e. like flipping a coin.

RISKS AND DISCOMFORTS:

You may find it upsetting or painful to talk about what it is like to be an adolescent and a mother.

BENEFITS: You may or any not personally benefit from participating in this study. However, by serving as a subject, you may contribute new information which may benefit people in the future.

ALTERNATIVES:

You may refuse to participate in this study at anytime without penalty.

CONFIDENTIALITY:

We will keep the information that you give us confidential. Neither your name nor your identity will be used for publication or publicity purposes. We will change identifying details on information that you have given us so you can not be identified by someone familiar to you. The researchers will be discussing the general information with their research advisor only. The pre and post questionnaires will be identified by a code number that cannot be traced to you. They will be kept in a locked file cabinet and will be destroyed (or returned to you) when the project is finished. The signed consent forms and the list that connects your name and code number will be locked in a separate cabinet away from the information files. According to Oregon law, suspected child abuse, elder abuse or suicidal tendencies must be reported to appropriate authorities. In the unlikely event that any of the above is revealed, we will inform you that a report will be made. We will be available for counseling and/or referral if this occurs.

COST: There are no costs for you to participate in this study. The workbooks will be provided.

LIABILITY: Oregon Health Sciences University, as an agency of the state, is covered by the State Liability Fund. If you suffer any injury from this research project, compensation would be available to you only if you establish that the injury occurred through the fault of the University, its officers or employees. If you have further question, you should call the Medical

Services Director at (503) 494-8014.

PARTICIPATION:

Jo Ann Berenbach (541) 673-0574 and Allyson Myers (541) 874-2842 have offered to answer any questions about this study. If you have any questions about your rights as a research subject, you may contact the Oregon Health Sciences University Institutional Review Board at (503) 494-7887. Participation is voluntary. You may refuse to participate, you may withdraw from this study at any time without affecting your relationship with or treatment at the Oregon Health Sciences University or the Boys and Girls Aid Society in Roseburg, Oregon. In the unlikely event this program may cause undue emotional distress, and at the investigators discretion, you may be asked to leave the study early.

Your signature below indicates that you have read the form and that you agree to participate in the study.

You will receive a copy of this consent form.

Adolescents Signature

Date

Parent or Guardian Signature

Date