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THE EFFECT OF SCHOOL CONFIGURATION ON LIFE EVENTS AS  
PERCEIVED STRESSORS OF EARLY ADOLESCENCE

*The University of Arizona*

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THE EFFECT OF SCHOOL CONFIGURATION ON  
LIFE EVENTS AS PERCEIVED STRESSORS OF  
EARLY ADOLESCENCE

by

Sue Ann Habkirk

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A Dissertation Submitted to the Faculty of  
THE DIVISION OF TEACHING AND TEACHER EDUCATION

In Partial Fulfillment of the Requirements  
For the Degree of

DOCTOR OF PHILOSOPHY  
WITH A MAJOR IN SECONDARY EDUCATION

In the Graduate College

THE UNIVERSITY OF ARIZONA

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As members of the Final Examination Committee, we certify that we have read  
the dissertation prepared by Sue Ann Habkirk

entitled The Effect of School Configuration on Life Events  
as Perceived Stressors of Early Adolescence

and recommend that it be accepted as fulfilling the dissertation requirement  
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*Sue C. Hobkirk*

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## TABLE OF CONTENTS

	Page
LIST OF TABLES . . . . .	viii
LIST OF ILLUSTRATIONS . . . . .	ix
ABSTRACT . . . . .	x
1. THE PROBLEM . . . . .	1
Introduction . . . . .	1
Rationale . . . . .	11
Statement of the Problem . . . . .	11
Research Questions . . . . .	11
Assumptions . . . . .	12
Limitations . . . . .	13
Definition of Terms . . . . .	13
2. REVIEW OF THE LITERATURE . . . . .	16
Introduction . . . . .	16
Major Characteristics of Early Adolescence and Adolescence . . . . .	16
Changes in Height and Weight . . . . .	16
Physiological Changes of Puberty . . . . .	18
Sexual Maturation in Females . . . . .	20
Sexual Maturation in Males . . . . .	21
Early and Late Development . . . . .	22
Psychological Development . . . . .	23
Sociological Development . . . . .	26
Sources of Early Adolescent and Adolescent Stress . . . . .	30
Life-Events . . . . .	33
Individual Personality Differences . . . . .	37
Type-A Behavior . . . . .	39
Stress Effects . . . . .	41
Maladaptive Responses . . . . .	44
School Configuration and Early Adolescents . . . . .	47
Related Research . . . . .	53
Life Event Inventories for Children . . . . .	54
Summary . . . . .	55

TABLE OF CONTENTS--Continued

	Page
3. METHODS . . . . .	57
Population . . . . .	57
Development of the Preadolescent Life Event Inventory . . . . .	58
Sample . . . . .	60
Procedures . . . . .	62
Measures . . . . .	64
Hypotheses . . . . .	65
Treatment of Data . . . . .	65
4. FINDINGS . . . . .	67
Hypothesis Testing . . . . .	68
Hypothesis One . . . . .	68
Hypothesis Two . . . . .	68
Hypothesis Three . . . . .	71
Hypothesis Four . . . . .	74
Summary . . . . .	78
5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . . . .	80
Purpose . . . . .	80
Sample . . . . .	81
Procedures . . . . .	81
Measurement . . . . .	82
Treatment of Data . . . . .	82
Findings . . . . .	83
School Configuration Effect . . . . .	83
School Configuration and Gender Effect . . . . .	83
School Configuration and Ethnicity Effect . . . . .	84
School Configuration, Ethnicity, and Gender Effect . . . . .	84
Conclusions . . . . .	84
Discussion of Conclusions . . . . .	86
Recommendations for Future Research . . . . .	88
Implications for the Practitioner . . . . .	89
APPENDIX A: PREADOLESCENT LIFE EVENT INVENTORY . . . . .	91
APPENDIX B: CONCEPTUAL FRAMEWORK OF STUDY . . . . .	94
APPENDIX C: PRINCIPAL APPROVAL FORM . . . . .	96

TABLE OF CONTENTS--Continued

	Page
APPENDIX D: FACULTY MEMBER APPROVAL FORM . . .	98
APPENDIX E: PARENTAL APPROVAL FORM . . . . .	100
APPENDIX F: LIFE EVENT RESPONSE . . . . .	102
APPENDIX G: SCHOOL PERCENTAGE BY ITEM FROM PREADOLESCENT LIFE EVENT INVENTORY . . . . .	105
LIST OF REFERENCES . . . . .	108

LIST OF TABLES

Table	Page
1. Demographic characteristics of the respondents . . . . .	61
2. Means, standard deviations and analysis of variance results depicting the relationship between life events and school configuration . .	69
3. Means, standard deviations and analysis of variance results depicting the relationship between life events, school configuration, and gender . . . . .	70
4. Means, standard deviations and analysis of variance results depicting the relationship between life events, ethnicity, school configuration and gender . . . . .	72

LIST OF ILLUSTRATIONS

Figure	Page
1. Life events by school, ethnicity, and gender . . . . .	77

## ABSTRACT

The purpose of this study was to compare the relationship of school configuration, gender, and ethnicity upon the mean number of life events experienced by early adolescents.

A review of the literature revealed many existing problems associated with early adolescent and adolescent inability to cope. At the same time, a review of the literature demonstrated an absence of any significant research which determines if school variables contribute to increased student stressful life events. Without empirical data, the improvement of existing programs as well as the development of new or alternative programs aimed at reducing stressful life events, coping with change and encouraging healthier lifestyle choices appears doubtful. Determining specifically what stressful life events early adolescents are experiencing will aid middle level administrators and educators in improving schools to address student needs and maximize learning.

The sample consisted of 837 eighth grade students enrolled in nine middle level schools that met the criteria of having been at least one year at a 7-8 school or at least two years at a 6-7-8 school. 529 students were from 7-8 schools and 308 students were from 6-7-8 schools. Total

number of males sampled were 395 students and total number of females sampled were 440 students. Subjects were administered a questionnaire composed of 55 life event items previously used with junior high and senior high students and slightly modified in this study for use with early adolescents.

Analysis of variance was employed to examine the relationship of the independent variables (school configuration, gender, and ethnicity) on the dependent variable (mean number of life events experienced by early adolescents). The findings revealed significant main effects for: school configuration and life event scores; school configuration and gender. No significant difference was found in the 2-way interaction for school configuration and gender. Significant 3-way interaction was noted for school configuration, ethnicity, and gender. Furthermore, examination of the results using ethnicity as a variable showed no significant difference in main effects or the 2-way interaction of ethnicity and gender or ethnicity and school configuration.

Data indicate that significant differences were found in the two school configuration types, gender differences as well as the interaction of school configuration, gender, and ethnicity.

## CHAPTER 1

### THE PROBLEM

#### Introduction

Normal development or maturational changes occurring in this age group create a set of problems unlike those experienced by any other age group. Middle school students of the eighties are also faced with another set of problems not of their own making. They have become victims of a changing society that no longer provides the nurturing environment emerging adolescents need to grow and to develop into fully functioning adults. They live in a society that has little time or inclination to help them through the traumatic years of transescence. Even though considerable knowledge exists to prove that success in school, and indeed, success in life, depends on what happens to students between the ages of ten to fourteen, this group is the least understood, the least cared for, and the most fragile in our society. (Wiles and Bondi, 1981, p. 32)

Early adolescence has been called a transitional period, a forgotten age, an era that "bridges the gap between childhood and adolescence" (Thornburg, 1974, p. 21). There has been relatively little research and study pertaining to this age group with the preponderance of children classified as either schoolagers or adolescents (Ryan de Brun, 1981). Early adolescence is marked by rapid physiological and psychological changes. Chronologically, the time period approximates ages ten through fourteen; however, individuals will vary with regard to entrance and exit from the early adolescent stage. Until recently,

preadolescence has been viewed as an unengrossing developmental period compounded by lack of adult understanding. In addition, the developmental changes are comprehended even less by the child. Presently there is increasing agreement among researchers and scholars alike that early adolescence and adolescence are crucial developmental stages characterized by the harmonization of biological, psychological, and social motivation. It is through this transitional period between childhood and adulthood that the adolescent prepares for adult functioning.

Adolescence is defined as the period of growth between childhood and adulthood (Rice, 1975). There is common agreement that adolescence begins at the time of puberty; but where it ends is less clearly defined. Traditionally, adolescence has spanned the years between thirteen and eighteen--an age range that was thought to correspond with physiological puberty on the lower end of the range and cessation of physical growth on the upper end. However, as Thornburg (1975, p. 2) describes, "It appears that the contemporary sociocultural milieu throws the individual into adolescent-type activities before puberty and maintains such activities beyond the time of physiological maturation. Functionally, therefore, adolescence may be thought of as occurring between the ages of eleven and twenty-two."

The literature records the bumpiness of the transition from childhood to adult status and responsibility. Statistics that portray youthful delinquency, use of cigarettes, alcohol and drugs, sexual experimentation and pregnancy, accidental deaths, suicides, and homicides depict this transition as turbulent for some youths. Graphic statistics aside, even among the most stable and well-adjusted youth, swings in mood, interests, commitments and daily behavior exist. Schinke and Gilchrist (1984, p. 20) state, "Adolescence brings a mixture of excitement and tragedy. Although most young people pass from childhood to adulthood unscathed, a growing number of them demand special attention."

In their late teens or early twenties, most American youth adopt one of the various lifestyles approved by our society and contribute to the common good through work, community activities, and networks of interpersonal relationships. Still, there is evidence that an increasing number of adolescents do not manage this period of change successfully without serious problems. The self-destruction of youth is evidenced by a combined suicide and homicide rate of over 25 percent in all causes of youth death (U.S. Department of Health and Human Services, 1985a). Suicide now ranks as the third or even the second cause of death among the fifteen to twenty-nine-year-olds in many countries (Diekstra, 1985). The average age for youngsters running

away is 14, accounting for 30,000 runaways per year (Gullotta, 1978; United States Department of Justice, 1984). Sexual pressures inherent in adolescent development trigger the onset of anorexia nervosa at puberty which in turn may affect as many as one out of every 250 girls between the ages of twelve and eighteen (Romeo, 1984). The most frequently cited developmental period for the onset of severe eating disorders is early adolescence (Steele, 1981; Bruch, 1978; Minuchin, Rosman, and Baker, 1978).

There is a great deal of data suggesting that young people at the junior and senior high school levels are the most vulnerable to the social pressures that lead to experimental and subsequent regular use of psychoactive substances (alcohol, cigarettes, marijuana, pills) (Durell and Bukoski, 1984). Often undesirable trends are evidenced in later years. Ten percent of all 12th-graders get intoxicated at least weekly (Finn, 1979); one in every 18 high school seniors is drinking alcohol daily, and 41 percent have had five or more drinks in a row at least once in the past two weeks (Johnston, O'Malley, and Bachman, 1984). To compound the problem, in 1980, over half of the 53,000 traffic fatalities were alcohol-related (Payne and Hahn, 1986; Karpf and Williams, 1983). Of these fatalities it is estimated that between 45 and 60 percent involve young drivers and are alcohol-related (DeLuca, 1981). It is not unreasonable to assume that these conditions result from the

stress-related beginnings of substance abuse in early adolescence.

The average age of beginning smokers plunged from 14 to 10 in the decade from 1970 to 1980, and the number of girls between ages 13 and 17 who began smoking increased five percent in the same period (Wiles and Bondi, 1981). Substance abuse increases with age, and many Americans are addicted to tobacco, alcohol, prescription drugs, and illegal and unhealthy chemicals by age fourteen (Jessor, Chase, and Donovan, 1980; Roush, Thompson, and Berberian, 1980). Roughly two-thirds of all American young people (63 percent) try an illicit drug before they finish high school, and forty percent have used illicit drugs other than marijuana (Johnston, O'Malley, and Bachman, 1984). According to the United States Department of Health and Human Services (1979), 59 percent of high school teenagers had tried marijuana, and one out of every nine was a daily user.

Criminal offenses are epidemic among American adolescents as well. One quarter of American high school students have broken into a home or business, fifteen percent have vandalized school buildings, ten percent have intentionally destroyed private property, and one in ten have inflicted medically significant injury on another person (Johnston, Bachman, and O'Malley, 1980). According to the United States Department of Justice (1984), 67

percent of persons arrested for robbery in 1984 were under 25 years old. Every day, \$15 million leaves American stores without going by way of the cash register (Klemke, 1982). Adolescent shoplifters contribute to an estimated one-third to one-half of this loss (Washington Crime Watch, 1982).

Adolescents' sexual imprudences are evidenced in intercourse at an early age (Furstenberg, Moore, and Peterson, 1985) and employment as male and female prostitutes, of whom 50 percent of the arrests in 1984 were for young people under 25 years (U.S. Department of Justice, 1984). Each year 2.5 million teenagers become infected with a sexually transmitted disease (U.S. Department of Health and Human Services, 1985b), and 1.3 million annual pregnancies among U.S. adolescents typify a soaring number of out-of-wedlock births, which is equivalent to one in every 10 sexually active girls (Tietze, 1978; Black and DeBlassie, 1985). Teenage mothers are more likely to be unmarried, have lower educational attainment, less prenatal care, and a larger percent of low birth weights than mothers in their twenties (U.S. Department of Health and Human Services, 1985b). Many of the children born to adolescents are reared in single-parent families. Just 7 percent of all young mothers opt for substitute care (Zelnik and Kantner, 1978) and fewer and fewer are choosing to marry. Gullotta (1983 p. 152) contends, with specific regard to early adolescence, "There is probably no age group more ill

prepared to shoulder the responsibility of an intimate sexual relationship." The literature clearly documents the adversities faced by the pregnant adolescent (Chilman, 1980; Adams and Gullotta, 1983).

It has been suggested that adolescents, compared with other age groups, are the developmental group under the most stress (Coleman, 1978; Edlin and Golanty, 1982). The adolescent, experiencing rapid growth, uneven energy, increased activity levels, and the quest for identity, is full of anxiety and stress (Humphrey, 1984). Even though lifestyle problems have been identified and adolescents have been pinpointed as a highly stressed group, the literature has yet to show a universally accepted definition of stress. Researchers attempting to define stress usually emphasize it as the result of a mismatch between individuals and their context or environment. Hans Seyle, world-famous biological scientist, described stress in physiological terms as, "The nonspecific response of the body to any demand made upon it" (Seyle, 1974, p. 27). Stress can be viewed in this light as a physiological response that results after one is exposed to some agent, factor, or event that in turn forces the body to change or adapt itself. Those factors are termed stressors. Stressors always precede the development of stress. In graphic terms, stressors are the cause; stress is the effect. Psychologist David Elkind associates and describes stress in terms of extraordinary demands on

available energy. "Stress . . . is any unusual demand or adaptation that forces us to call upon our energy reserves over and above that which we ordinarily expend and replenish in the course of a twenty-four hour period" (Elkind, 1981, p. 144). "Stress is the wear and tear of living in the twentieth century, the price we pay for our high-powered, fast-paced civilization" (Combs, Hales, and Williams, 1983, p. 40).

Through further analysis, research on stress has resulted in the proliferation of a wide range of definitions. A search of the literature has revealed over 300 definitions of stress, demonstrating the complexity of the subject. Elliott and Eisdorfer (1982) have suggested that efforts to formulate more precise definitions have uniformly failed in distinguishing all stressful events from all nonstressful ones, emphasizing the critical importance of intervening variables in a given individual and in the surrounding environment. Yet, despite these difficulties, the subject of stress continues to interest both the general public and investigators alike. Whatever the formal definition, stress for the adolescent can mean sleepless nights, nervousness, tension, anxiety, inability to concentrate, weight loss, disturbed interpersonal relationships, and a condition known as anhedonia--the inability to enjoy anything (Schinke and Gilchrist, 1984).

Evidence based upon common experience and sound research indicates that certain events or conditions are stressful, and that these are associated with health changes in some people. Stress has been found to affect almost every major organ system (Price 1985) and is related to a multitude of social, physical, and mental problems. The list of medical conditions attributable to psychological stress grows yearly: peptic ulcer, mucous colitis, ulcerative colitis, bronchial asthma, atopic dermatitis, angioneurotic edema, hay fever, arthritis, atherosclerosis and its after effects, angina and myocardial infarction, Raynaud's disease, hypertension, hyperthyroidism, amenorrhea, enuresis, paroxysmal tachycardia, migraine headache, impotence, general sexual dysfunctions, sleep-onset insomnia, alcoholism, and several neurotic and psychotic disorders (Elliott and Eisdorfer, 1982; Pelletier, 1977), to name but a few illnesses.

Correlational questions begin to emerge, such as do stressful events cause psychiatric disorder? Or, conversely, does the presence of a disorder (or its precursor in the form of personality or lifestyle variables) increase the chances of having stressful experiences? Or, alternatively, are both stress and disorder due to some third set of variables? These difficulties are by no means entirely resolved (Dohrenwend and Dohrenwend, 1980); however, there is reasonably strong evidence to illustrate

that, in adults, stressful life events play a significant role in provoking the onset of suicide, depressive conditions, neurotic disorders, and to a lesser extent, schizophrenia (Andrews and Tennant, 1978; Brown and Harris, 1978; Lloyd, 1980; Paykel, 1978).

Evidence is continuing to mount to support the notion that stressful events often precipitate and maintain physical illness. Hamburg (1982, p. xvii) states, "The extent of community disintegration, a lack of social supports, and the number of stressful events in the life of an individual have been found to affect illness, productivity, and indeed life expectancy." These episodes of intense, unmitigated stress affect our immediate well-being; living years or decades under stress affects how long and how well we will continue to live (Combs, Hales, and Williams, 1983).

As noted, the inability to control stress underlies numerous social and health problems encountered in early adolescence, adolescence and adulthood. Perhaps Schinke and Gilchrist (1984, p. 62) provide some encouragement when they write, "Effective stress management is a key life skill that provides the foundation for prevention and treatment of difficulties in virtually all areas of youths' functioning."

### Rationale

In their text, Life Skills Counseling With Adolescents, Schinke and Gilchrist (1984, p. 54) comment, "Given the classical picture of adolescence as full of turmoil, sweeping changes, and psychodynamic strife, practitioners might expect a natural concentration of research on stress reactions in adolescence. In reality, little empirical work in this area is available."

Elliott and Eisdorfer (1982, p. 14) also substantiate this need for further research since "at least part of the difficulty in research may have been the excessive emphasis on responses, without adequate attention to the stressors." In addition, Thoresen and Eagleston (1983) report that the demands young people face have not been thoroughly researched.

### Statement of the Problem

This study compared the relationship of school configuration, gender, and ethnicity on the mean number of life events experienced by early adolescents.

### Research Questions

The following questions provided structure for the study:

1. Does school configuration influence the mean number of life events experienced by early adolescents?

2. Does school configuration and gender classification influence the mean number of life events experienced by early adolescents?
3. Does school configuration, and ethnic classification influence the mean number of life events experienced by early adolescents?
4. Does school configuration, gender classification, and ethnic classification influence the mean number of life events experienced by early adolescents?

#### Assumptions

For the purposes of the study, the following conditions were assumed:

1. The Preadolescent Life Event Inventory (PLEI) is a reliable measure of the amount of life events experienced by early adolescents.
2. The students selected for this study were representative of their respective school populations.
3. The students selected for this study were representative of middle level education students in general.
4. The students selected for this study provided honest answers to the questionnaire.

### Limitations

The study will be limited by the following:

1. The study is restricted geographically to several school districts in the southwestern part of the United States.
2. The study included only eighth grade students who have been enrolled in one 7-8 school configuration for at least one year or one 6-7-8 school configuration for at least two years.
3. The study was delimited to the measurement of self-reported preadolescent life events occurring within twelve months preceding completion of the PLEI.
4. The study was delimited to measurement of life events listed on the PLEI only.
5. The study was limited to the ability of students to accurately recall experiences incurred within a twelve-month period preceding completion of the PLEI.
6. The study was limited by the potential measures of reactivity as described by Campbell and Stanley (1966).

### Definition of Terms

The following terms are defined for this study:

Adaptation: the act of adjusting to circumstances encountered.

Adolescence 11-22 years: the transitional period of physical, psychological, and social development between puberty and adulthood.

Adolescents: A group of youngsters experiencing the transitional period of physical, psychological, and social development between puberty and adulthood.

Configuration: The relative arrangement of parts or elements.

Distress: Disagreeable or pathogenic stress.

Early Adolescence (Preadolescence), (Pubescence), (Post Early Childhood), (Emerging Adolescence), (In-between-age), (Transescence): Terms that approximate the same life span of a child. Chronologically the time span covers ages ten through fourteen. Pubescence specifically connotes physiological development that typically begins two years prior to puberty during which maturity of the reproductive organs evolve and ends with puberty (Ryan de Brun 1981). Early adolescence is often characterized as transitory rather than a distinct period of the life cycle. Because puberty does not occur at the same chronological age in children, the early adolescence concept is based on the physical, intellectual, social, and emotional changes that appear shortly before the puberty cycle and extends until the body gains a practical degree of stabilization over the change (Eichhorn, 1968).

Early Adolescent (Pubescent), (Emerging Adolescent), (Transescent), (In-between-ager): Any youngster experiencing the changes of early adolescence.

Elementary School: A school typically inclusive of the first four to the first eight grades, and often containing a kindergarden.

Eustress: Agreeable or healthy stress.

Junior high school: A transitional school serving students in the preadolescent and adolescent years with an organization and program structured around "junior" high school content and activity, usually in a 7-8 or 7-9 grade configuration.

Life Event (Stressful Life Event), (Life Crisis), (Life Change Event), (Life Stress): An experience occurring in one's life that requires adaptation

(Beall and Schmidt 1984). A sudden onset of events or the culmination of a gradually developing series of events that produce intense and traumatic changes in the life and experiences of the individual (Proshansky, Nelson-Shulman, and Kaminoff, 1973).

Middle level education (Middle Level School), (Intermediate School): ". . . Encompassing any grade or grade combinations from 5 through 9" (Valentine, et al., 1981, p. xv).

Middle school: A transitional school concerned with the most appropriate programs to cope with the personal, social, and educational needs of emerging adolescent learners, usually in a 5-8 or 6-8 grade configuration.

Puberty: The period during which a person reaches sexual maturity and becomes capable of producing offspring.

Response: The state of stress, an organism's reaction to stress.

Stimulus: That which arouses or incites activity in individuals.

Stress (Anxiety), (Strain), (Tension): "... a state of imbalance within an organism that (a) is elicited by an actual or perceived disparity between environmental demands and the organism's capacity to cope with these demands and (b) is manifested through a variety of physiological, emotional, and behavioral responses" (Stokols, 1973, p. 27).

Stressor: A stimulus that produces a stress response or that which causes stress.

Youth: A group of youngsters experiencing the period of time between childhood and maturity.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### Introduction

A review of the literature relevant to the study is presented in this chapter. The review consists of five parts: major characteristics of early adolescence; stress sources; stress effects; school configuration; and, an analysis of related research in stress measurement.

#### Major Characteristics of Early Adolescence and Adolescence

During early adolescence the youngster is introduced to and must accept a noticeably changed body, achieves a definitive separation and differentiation of the new self from parents and experiments with new kinds of relationships with peers of both sexes (Group for the Advancement of Psychiatry, 1968).

#### **Changes in Height and Weight**

An awareness of the anatomical and physiological changes confronting the early adolescent is important to the understanding of the resulting conflicts and psychosocial solutions each individual utilizes in their struggle for mastery of his or her changing biological status. It is

essential to bear in mind that there are considerable individual differences in the age and onset of these changes; however, most children follow a pattern for growth and development. Therefore, there is a balance between the immature students at one end of the continuum and the more mature students at the opposite end, with the majority of students falling somewhere in the middle (Willgoose, 1982). Primarily as a result of improved nutrition and general health the age of adolescent developmental maturity has moved into the pre-teen years (Peterson, 1979; Sommer, 1978).

Biologically, early adolescence is marked by a characteristic growth spurt, the appearance of secondary sex characteristics, and the onset of puberty. The rate of growth during early adolescence is second only to that in infancy. From then on, there is no time in life that rivals early adolescence for rapidity of growth -- or for self-consciousness about it (Lipsitz, 1984, p. 6).

In reference to the typical ages for experiencing accelerated growth in height, Coleman (1980) suggests that for boys, the growth spurt may begin as early as ten years of age, or as late as sixteen with the average age being at thirteen and notable change peaking during the thirteenth year. In girls, the same process can begin at seven or eight, or not until twelve, thirteen or fourteen. Comparable ages for girls are eleven for the onset of height acceleration, and twelve for the peak age of increase in height and weight (Coleman, 1980). Girls are typically

shorter and lighter than boys during childhood, however due to earlier maturation, they average slightly taller than boys between twelve and fourteen, and heavier than boys between the ages of ten and fourteen (Rice, 1975). Girls grow fastest in height and weight at approximately twelve years of age whereas boys grow fastest in height and weight at approximately fourteen (Tanner, 1962, 1966). By the time girls have reached ninety-eight percent of their adult height (at sixteen and 1/4 years), boys are still growing and do not achieve ninety-eight percent of their adult height until seventeen and 3/4 years (Schonfeld, 1975; Tanner, 1962). In addition to height and weight developmental variations occurring in youngsters, there are changes in body proportions; subtle alterations in strength and endurance, motor ability and performance, and in nutritional needs and digestion (Rice, 1975).

### **Physiological Changes of Puberty**

Adolescence is generally considered to begin with the physiological changes at puberty, and ending in full genital and subsequent reproductive maturity (Sorochan and Bender, 1978). Within each sex, the sequence of these pubertal changes are predictable, however the rate at which the events occur is highly variable (Sommer, 1978).

It should be noted that the onset of puberty is not one single occurrence but rather a series of events which

occur gradually over a period of months and years. Puberty is characterized by the onset of hormonal activity which is under the influence of the central nervous system, primarily the hypothalamus and the pituitary gland, both of which are located in the base of the brain. The major consequences are increased evolvment of the adrenocortical and gonadal hormones along with the production of mature ova and spermatozoa. At puberty the setting of the "hormonostat" changes, so the production of gonadotropin releasing and subsequent gonatropins is no longer inhibited (Everaerd, et al., 1983). Large quantities of gonadotropin are produced which in turn stimulate the growth of the gonads. Further, the gonads produce sex hormones which are responsible for the major changes of puberty. "What brings about the changed sensitivity of the hypothalamus in humans is not known. As it has wide connections with cortical and other sub-cortical levels of the brain, it is not unreasonable to suppose that various aspects of life experiences affect it" (Everaerd, et al., 1983, p. 35).

Physiological growth is marked by accelerated maturation. The onset of menstruation in the female and first ejaculation in the male are events that mark the movement toward physiological maturity (Thornburg, 1975). "Generally, the beginning of puberty is estimated to be

around the age of eleven in females and around the age of thirteen in males" (Meeks, Heit, and Pottebaum, 1981, p. 174).

### **Sexual Maturation in Females**

As in the case of the adolescent growth spurt, females begin their sexual development earlier than males. When puberty begins in girls, breast development starts at approximately ten years of age (in some girls, perhaps one-third, the appearance of pubic hair precedes breast development) (Vander Zanden, 1978). Typically the female experiences considerable genital growth in her eleventh year and begins to menstruate in her twelfth year (12.8) (Hammer and Owens, 1973; Sommers, 1978). Nearly all females are experiencing menarche regardless of ethnicity or socioeconomic status by age fifteen (MacMahon, 1970). The female sex hormones (estrogen and progesterone) are responsible for inducing menarche (Anderson and Creswell, 1980). Another visible change in puberty is the growth of pubic and axillary (underarm) hair (Katchadourian and Lunde, 1975). The development of secondary sexual characteristics such as these are similar for both sexes but vary in degree of development (Sorochan and Bender, 1978). The uterus and vagina mature simultaneously along with development of the breasts. However, menarche occurs relatively late in puberty, usually following the peak of the growth spurt

(Tanner, 1970, 1972), and early menstrual periods tend to be irregular (Vander Zanden, 1978). Further, ovulation typically does not take place for twelve to eighteen months after first menstruation; therefore the girl remains sterile during this time (Hafez, 1973). There is evidence that puberty has occurred earlier and earlier for over a hundred years in the developed countries at the rate of four months per decade (Tanner, 1962). According to Sommer (1978), this downward trend of puberty has leveled off in the developed countries.

#### **Sexual Maturation in Males**

Males begin rapid growth about twelve to eighteen months later than girls. The male sex hormone, testosterone, stimulated by a hormone from the anterior pituitary gland, is responsible for much of this adolescent growth spurt in boys (Anderson and Creswell, 1980). The first outward sign of puberty in males begins at about age twelve and is most commonly manifested in an increase in the rate of growth of the testes and scrotum, followed by the growth of pubic hair (Coleman, 1980; Vander Zanden, 1978). Acceleration of penile growth and the appearance of facial hair frequently coincides with the beginning of the growth spurt (Coleman, 1980). Later the voice begins to change along with the first seminal discharge occurring at age fourteen (Coleman, 1980; Vander Zanden, 1978). This event

(ejaculation of seminal fluid) first occurs about one year after acceleration of penis growth (Sommer, 1978). Relative to the average interval between the beginning of puberty and sexual maturation, Anderson and Creswell (1980, p. 45) state: "the event of sexual maturation or spermatogenesis in the male usually occurs some two to three years after the onset of puberty."

### **Early and Late Development**

Considerable attention has been paid in the literature to the issue of early and late developmental characteristics in adolescents. Evidence from the work of Tanner (1962) and others have shown that regardless of whether puberty occurs early or late bears little relation to abnormality in physical development (Coleman, 1980). However, mounting evidence reveals that pubertal timing is correlated with adolescent stress and that the relationship differs for males and females (Berzonsky, 1983). For example, early-maturing males tend to experience fewer problems and a less stressful adolescence than their later-maturing age-mates (Blyth, et al., 1981; Clausen, 1975; Jones, 1958; Mussen and Jones, 1957). A reverse trend has been noted for females, particularly during early adolescence where early maturers tend to experience comparatively more difficulties and greater stress (Faust, 1960; Jones, 1958; Simmons, et al., 1979). These findings

indicate that early maturation is advantageous for males, but disadvantageous for females (McCandless, 1970).

### **Psychological Development**

Researchers frequently question if there is an intellectual growth spurt at puberty which accompanies the physical growth spurt. Generally speaking, as the adolescent matures physiologically, the rate of brain growth slows down. There is no conclusive evidence to support the contention that there is a prior intellectual growth spurt with the onset of puberty (Rice, 1975). However, a considerable body of research on cognitive development during adolescence has documented significant developmental trends. Inhelder and Piaget (1958) assert that changes in logical operations are related to age and that humans develop through a series of defined maturational periods and subperiods. Through their work Piaget (1950), and Inhelder and Piaget (1958), provide a basis to understand stages of cognitive development. Piaget divides cognitive development into four significant periods:

1. The sensorimotor stage - from birth to about two years.
2. The preoperational stage - from about two to seven years.
3. The concrete operations stage - from about seven to eleven or twelve years.

4. The formal operational stage - from eleven or twelve years and above (Furth, 1970, p. 33).

The early adolescent falls within Piaget's concrete and formal operational stages (Inhelder and Piaget, 1958).

During the concrete operational period from seven to about twelve, children develop the ability to think deductively. These deductions are limited to witnessed events (Gazda and Corsini, 1980). It is at this time that operational groupings of thought concerning objects can be manipulated or known through the senses (Piaget, 1950). Piaget calls middle childhood the period of concrete operations. His reference to "concrete" meaning children are bound by immediate physical reality and cannot exceed the here-and-now. As a result, during this period, children have difficulty dealing with remote, future, or hypothetical matters. Thornburg (1981, p. 135) sheds yet another light on the description of the concrete operational stage by stating: "The concrete stage is a conceptual stage where the early adolescent organizes information around categories or concepts which are generalizable from one instance to another." The capacity for the highest level of abstract thinking first emerges at puberty and as Clark (1984, p. 60) states: "Most youngsters progress from concrete thinking to formal thinking during the ages of eleven to fourteen." This is a development of distinct importance. The ability

to reason inductively and deductively at an abstract level allows the adolescent important new adaptive and defensive techniques. It is now possible to deal with problems through trial action in the imagination, considering alternative plans for their solution before taking action in reality (Group for the Advancement of Psychiatry, 1968). It is not until the period of formal operations that a person can think in adjustable terms about the world considering abstract universals such as love and freedom along with their intrinsic meaning. An important distinction between the concrete operational child and the formal operations adolescent is that the latter has the ability to orient himself toward what is abstract and not immediately present. This ability permits the adolescent to project himself into the future, to discriminate present reality from possibility and to contemplate what might be (Ambron and Brodinsky, 1982). In the formal operational stage, children can perform deductions on other deductions. Their ability is characterized by more than abstract thought. In addition, the adolescent utilizes logic and reasoning in making decisions. This process then initiates the type of thought processes that exist in most adults.

On reference to the transition from the concrete operational stage to the formal operational stage (students in the sixth through eighth grade), Thornburg (1984, p. 246) states: "Although students' concrete thinking processes are

very well defined, this transition is particularly difficult, more so than at any other developmental period or school structural change. Reasons include students' physical growth and cognitive and social development."

### **Sociological Development**

Havighurst sought to develop a psychosocial theory of adolescence by combining attention to the individual's needs with societal demands. What the individual needs and what the society demands constitute the developmental tasks of adolescence. Accomplishment of the developmental tasks associated with maturational change, schooling, work, religious experience, and so forth is provisional for self-fulfillment and happiness. Failure to successfully accomplish the adolescent tasks results in anxiety, social disapproval, and inability to function as a mature person. Successful resolution of the tasks results in maturity (Rice, 1975). According to Havighurst (1972), there are eight major tasks characteristic of the resolution of adolescence. These tasks in outline form are:

1. Accepting one's physique and using the body effectively.
2. Achieving new and more mature relations with age mates of both sexes.
3. Achieving a masculine or feminine social role.
4. Achieving emotional independence from parents and other adults.

5. Preparing for an economic career.
6. Preparing for marriage and family life.
7. Desiring and achieving socially responsible behavior.
8. Acquiring a set of values and an ethical system as a guide to behavior-developing an ideology (Rice, 1975, pgs. 43-44).

Thornburg (1980, p. 216) recognizes an additional task unique to early adolescence, that being "organizing knowledge and concepts into problem solving strategies."

Socialization is the process by which an individual learns and adapts to the customs, ideas, beliefs and values of the culture. A child's main social environments are the home and the school. Friends become increasingly important and provide a major influence on an individual's behavior. During early adolescence there is a shift from predominant parental influence on behavior to predominant peer influence (Thornburg and Gould, 1980). "The shifting alliance from family to peers gives an added sense of independence. The price of reliance upon peers is more than offset by the return provided another set of needs - those of friendship and intimacy" (Coleman, 1980, p. 119).

During preadolescence, most peer relationships are with those of the same sex. Close friendships are also with the same sex. With this group the preadolescent learns to get along. Generally, "they form teams, committees and are very much aware of people their own age" (Havighurst, 1968,

p. 223). The importance of the preadolescent peer group should never be underestimated as popularity is valued sometimes at all cost. The need for acceptance among peers may influence health behavior among adolescents (Meeks, Heit, and Pottebaum, 1981).

As the adolescent grows and develops, their interest in the opposite sex increases. "In the United States dating has been the principal vehicle for fostering and developing heterosexual relations" (Vander Zanden, 1978, p. 483). As intimacy grows in a dating relationship, the desire to express feelings physically increases (Adams and Gullotta, 1983). However, existence in today's world is permeated by value conflicts over sexual behavior (Burt and Meeks, 1985). Lipsitz (1984) points out that young people are capable of reproducing at a shockingly young age. Socially, in comparison with their grandparents at the same age, adolescents are considered younger and are given fewer outlets for responsible social behavior. Yet, the onset of puberty imposes responsibility for sexual behavior at an earlier age than was imposed upon their grandparents (Lipsitz, 1984). In our culture, children reach physical adulthood before they are capable of functioning in adult social roles (Simmons, et al., 1973). They are socially younger and biologically older (Lipsitz, 1980). Both Peterson (1979) and Tanner (1972) suggest children and adolescents are maturing faster than in previous decades.

Thus, they are subject to impulses, desires, and drives not previously experienced by this age group (Thornburg, 1980).

The adolescent joins the adult world through the achievement of independence and the establishment of a firm identity, and by the re-establishment of appropriate ways of dealing with instinctual drives so as to maintain a relatively stable mental and emotional equilibrium.

The school environment plays an influential role in the socialization process of early adolescence. Georgiady and Romano (1977, p. 12) view the importance of the school relative to socialization of contemporary youth in the following way:

A basic principle of education stresses the importance of providing differentiated educational treatment for varied maturity levels. Acceptance of this principle leads to a consideration of the differences inherent in transescents as against younger and older children and follows with an examination of the kinds of educational programs called for by such identified developmental characteristics. In this very essential task, lies the reasons for the failure of the traditional junior high school. It did not recognize the unique nature of the students it sought to serve and having failed this continued to offer a program that was both irrelevant and inadequate.

The process of youth socialization is seen by many as being fraught with conflict. Lipsitz (1984, p. 7) states: "Schools are peculiar social agencies, charged by society with socializing youth into that society while excluding them from it." The adolescent is exposed to a large variety of socialization agencies inclusive of the aforementioned school, the peer group, adult-directed youth

organizations and so on, and thus is presented with a wide range of potential conflicts in values and ideals (Coleman, 1980). These differing social agencies along with social changes of the last twenty years have created ever-increasing stresses for young people. In summary, there can be little doubt that stress and tension exist in early adolescents and adolescents due in small part to inner emotional instability (such as responding to a developing mind and body), and to a larger extent conflicting pressures from the outside.

#### **Sources of Early Adolescent and Adolescent Stress**

As Sommer (1978) observes, stress is an inevitable part of life. There are so many different sources of stress that almost anything can cause stress to a certain degree (Humphrey, 1984). The period of puberty in and of itself should not be underestimated in terms of major causes of stress. Sommer (1978, p. 4) states: "For reasons of biology and culture, the period of puberty is one of special stress. If not stressful in the negative sense of anxiety, it is at the very least a period of intense and high arousal." More frequently, as time goes by, scholars have come to view the period of early adolescence as a specific and stressful stage in the life cycle (Hamburg, 1974; Konopka, 1980; Adams and Gullotta, 1983). Further, Berzonsky (1982) reiterates the notion that within a life

span developmental perspective, adolescence is a transition period that should be characterized by age-related changes in stress. He states: "There is a high probability that relatively unique potentially stress-producing events will be encountered during this period of life. These may be organismic, e.g., puberty, or situational, e.g., peer acceptance, leaving home, variables" (Berzonsky, 1982, p. 215). Simply growing can produce tremendous strain (Schinke and Gilchrist, 1984). As previous sections dealing with growth and development indicate, almost every aspect of life undergoes major alteration during the early adolescent and adolescent years. The physiological changes that occur during puberty, for example, tax all youth's adaptive resources but none more so than those of teenagers who experience the changes too early or too late relative to their peer group (Hamburg, 1974).

In the past twelve years, the number and severity of childhood stresses has increased dramatically (Brenner, 1984). This may be due in part to increasing societal demand and change. Gherman (1981) contends today's world is a stress-filled environment, and it is doubtful that tomorrow will be any different. Most children confront a considerable amount of stress in the complex society (Humphrey, 1984). The pressure to be successful both in the social spheres and in the academic setting rises markedly during adolescence. A study of high school students'

perceptions of peer pressure revealed strong feelings of coercion during these years to be socially active, to have steady opposite sex relationships and to receive good grades (Brown, 1982).

High expectation and pressure from parents can add to early adolescent and adolescent stress. Children frequently experience stress when significant others fail to meet their needs or when they encounter excessive demands, real or perceived, in their environment (Chandler, 1981). Among the many types of motives commonly shown by parents in regard to their child's education are ones that often relate more to parents' personalities and needs than to the child. There is a rapidly developing tendency for children's grades, and other achievements, to be used by parents as status symbols, serving much in the way that Cadillacs and mink coats have served in days past (Marx and Tombaugh, 1967). This expectation can often result in excessive and unnecessary pressure on children and adolescents. West, Wills and Sharp (1982) found that parental occupational status is significantly positively correlated with fear of failure, importance of school, parental stress and total stress. Parents' own mid-life crises--often culminating in divorce, depression, job change or relocation--add to the mountain of stressors confronting early adolescents and adolescents. Both parents and youths are also making their first adjustments to the identity crisis with which each is

confronted. "Gradually, however, conflict and tension subside if parents are willing to change their relationship with children from a parent-dependent child orientation to an adult-growing adult relationship" (Rice, 1975, pp. 250-251).

Jobs produce stress and as one group of researchers studying adolescents who work concluded, "Time spent in the workplace is significantly predictive of psychological distress, somatic symptoms, school absence and the use of cigarettes, alcohol, and marijuana" (Greenberger, Steinberg and Vaux, 1981, p. 696). Initiation of dating and sexual activity can be difficult for most young people coupled with the extraordinary stresses surrounding such events as an unplanned pregnancy, or contracting venereal disease can be devastating (Brown, 1981; Gilchrist and Schinke, 1983).

### **Life-Events**

Life events are a very large contributing factor to early adolescent and adolescent stress. With humans, an accepted procedure for studying perceived stress has been to access major life events. By definition this includes those situations that combine powerful demands and often strong reactions in people such as the divorce of one's parents, death of a close family member, major personal injury or illness, or changing to a new school (Thoresen and Eagleston, 1983; Gunderson and Rahe, 1974; Coddington,

1972a, 1972b). "Thus it is evident that there are a number of dimensions along which stress is induced by life-change events" (Cobb, 1974, p. 154). Gherman (1981, p. 9) states: "From the point of view of its stress-producing or stressor activity, it is immaterial whether the agent or situation we face is pleasant or unpleasant. All that counts is the intensity of the demand for readjustment or adaptation." Carlson, et al. (1984) contend when life change events occur to adolescents, more stress is added to this already stressful time. Yeaworth, et al. (1980) maintain that adolescents may have little experience in dealing with stress. "Attempts to cope with stress often means that adolescents try new behaviors and, if successful, gain new confidence in their ability to cope. Unsuccessful coping with stress can cause loss of confidence, feelings of helplessness and use of primitive psychological defense mechanisms" (Carlson, et al., 1984, p. 769). Children along with adults have been found to experience greater susceptibility to various medical and psychological disorders during the time usually six to twelve months surrounding major life events (Boyce, et al., 1977; Heisel, et al., 1973; Padilla, Rohsenow, and Bergman, 1976). Research has shown a relationship of pregnancy to adolescents' experiencing a high incidence of particular kinds of life-change events for a period prior to conception (Coddington, 1979; Rahe, et al., 1964; Williams, Williams,

Griswold, and Holmes, 1975). Further research has shown a relationship of particular life-change events to school absence and grade-point averages. Increased incidences of students experiencing additional or more serious arguments with parents, involvement in drugs or alcohol, failing one or more subjects in school, and discovering that one is pregnant/or got someone pregnant, were found to be associated with declines in grade point averages (Jackson, 1982).

The studies of Dohrenwend and Dohrenwend (1974) attest to the general utility of measuring life crises and then correlating these scores with measures of adjustment. Garmezy and Rutter (1983) criticize this approach and suggest the former studies overlook the minor daily hassles. These are the day-to-day problems encountered and normally discussed with friends (if available). Garmezy and Rutter (1983) caution in the aggregate their effect can be profound. "Daily distress adds up to a low-key condition of chronic stress" (Garmezy and Rutter, 1983, p. 240). Thoresen and Eagleston (1983, p. 49) contend: "Chronic stress . . . involves an excess of demands, typically coupled with an excess of reactions, so much so that the 'wear and tear' on the body and the mind leads to gradual, yet pervasive, and sometimes lethal changes." They offer a transactional model of chronic stress, which, for purposes of stress analysis, is helpful in understanding modes of

influence in individual stress attainment. Thoresen and Eagleston (1983, p. 49) further define chronic stress as: "a state of the person over time resulting from a perceived imbalance between demands and resources to meet demands, coupled with inadequate responses by the person to cope with the demands." They suggest the battle one experiences in trying to cope with demands successfully (the experience of imbalance), occurs across four major modes of influence: cognitive (e.g., self-talk, attributions, beliefs about self); physiological (e.g., changes in neurohormonal production, blood pressure, heart rate, muscle tension); behavioral (e.g., speech content and stylistics, gestures, facial expressions); and environmental (e.g., parents in home setting, peers at school, noise level, lack of privacy). "Most experiences take place in three major life settings: home, work or school, and community. Thus, chronic stress can be thought of in terms of the context, such as the school classroom or the neighborhood, in which the demands take place, in which resources exist, and in which responses occur" (Thoresen and Eagleston, 1983, p. 49). When the balance is disrupted and is persistent, chronic stress emerges along with its health and disease consequences.

### Individual Personality Differences

Forbes (1979) points out that situations that lead to stress are as different and varied as people themselves as well as what is perceived and felt as stress also varies from individual to individual. Bullard (1980) explains two people can react very differently to the same stressful experience due to personality differences. Gherman (1981) contends: everyone is subject to stress, however, some individuals are more aware of it than others or are better able to handle it. "Whether stress elates or defeats us depends on our perception of the situation. Early upbringing, socioeconomic background, age, temperament, education and health are factors which influence our perception of an event" (Forbes, 1979, p. 16). "From the body's point of view, it makes no difference if the stress is positive or negative, pleasant or unpleasant" (Combs, Hales and Williams, 1983, p. 41). Lazarus (1966) elaborated upon the viewpoint that an event can be stressful only if the individual perceives it to be so. Further, stress is not something that occurs in isolation outside of the body. Lazarus (1976) was concerned with the individual's perception and evaluation of his situation, and with the concepts of conflict, frustration and threat.

Distress describes the negative effects of stress; when unrelieved it can exhaust or even destroy life energy. Each person has a tolerance level for stress, and if the

stress exceeds the tolerance level, a person will suffer emotional stress and its consequent unhappy circumstances (Humphrey, 1984). However, stress can be beneficial and may maximize one's capacity to respond to a sudden challenge (Combs, Hales, and Williams, 1983). Elliott and Eisdorfer (1982) add the possibility of other positive changes such as increased physical stamina, greater affective coping styles, or stronger social ties. Selye's (1974) term for good stress is eustress and maintains it is not always harmful to the body, what counts is the intensity of the demand for readjustment or adaptation. With regard to early adolescents, Thoresen and Eagleston (1983, p. 52) warn:

It is crucial to recognize that . . . demands of transitions and daily living are perhaps best thought of as potential demands. Not all young people experience hardship as they enter junior high. Some adolescents clearly have a more difficult time than others adjusting to the acquisition of adult physical characteristics and the corresponding set of personal and social responsibilities. A key concept is that demands are appraised by each person. As a result of the appraisal, the demand is taken as more or less serious, as one that can be ignored or one that must be met. Therefore, whether a given demand causes stress depends on the person's appraisal of the demand and an evaluation of the resources to meet the demands.

Selye (1974, p. 31) further asserts: "Stress is not something to be avoided." Indeed, by definition it cannot be avoided, since during every moment of our lives a demand for life maintaining energy exists. "Complete freedom from stress is death" (Selye, 1974, p. 32). Ideally, the amount

of stress individuals experience is high enough to motivate action and satisfy needs, yet low enough to sustain good health.

### **Type-A Behavior**

Since the 1970's, the relationship between Type-A behavior, stress attainment, and coronary heart disease has received a great deal of consideration in the literature. Dobson (1982, p. 91) describes individuals' characteristic of Type A behavior as: "extremely competitive, impatient, pressurized by time schedules, readily frustrated . . . quick to anger--and markedly perfectionistic." They often will work themselves too hard even when no time limit has been imposed (Burnham, Pennebaker, and Glass, 1975; Rosenman and Friedman, 1974). By contrast, these characteristics are not found in Type B individuals, and the latter are unlikely to develop heart disease. Dohrenwend and Dohrenwend (1981, p. 168) argue:

Type A is not a set of personality characteristics leading to behavioral and physiological responses by some invariant process. Type A behavior is seen as the outcome of a set of predispositions interacting with specific types of eliciting situations including those that might be defined as stressful.

They further suggest that Type B individuals elicit a distinctly different mode for coping than do Type A individuals. Type A's struggle to maintain control over their environment contrary to Type B's who appear to cope in a different manner. Glass (1974) has estimated that as many

as forty percent of the population fit into the Type A behavior pattern category, and this percentage is inclusive of children as young as ten or eleven years of age (Herndon and Glass, 1974). Data suggests that Type A's respond to challenge and stress with elevations in systolic blood pressure and plasma catecholamines, both factors of which are believed to potentiate the major cardiovascular disorders (Matthews and Glass, 1981). Elliott and Eisdorfer (1982, p. 31) warn:

Type A individuals are at a significantly greater risk of having a heart attack at an early age. Type A behavior is likely to be encouraged as it is identified with a number of socially desirable consequences, including success both in the workplace and in the classroom. Thus, not only is Type A behavior correlated with an increased risk for heart disease, but it may also be associated with a sense of personal satisfaction and community respect.

Unpredictable life events may prove to be a useful category of situations that produce Type A behavior in susceptible individuals (Dohrenwend and Dohrenwend, 1978). Mundane and repetitive stressful life events, referred to as daily hassles by Lazarus and Cohen (1977), also deserve special consideration as possible dischargers of Type A behavior. Dohrenwend and Dohrenwend (1981) suggest Type A's may actually experience more uncontrollable life events than do Type B peers. This concept is consistent with the findings of two studies indicating that Type A's report more stressful life events than do Type B's (Dimsdale, et al., 1978; Suls, Gastorf, and Witenberg, 1979).

### Stress Effects

Selye (1974) regards stress as an organism's response to the demands of his environment. Selye theorized that it was neither the kind of stressor nor the type of species which influenced the physiological stress response. For him, the syndrome of responses incorporated a number of defense reactions which repeatedly manifested themselves to the source of stress through the three stages which have become known as the general adaptation syndrome (Dobson, 1982). This syndrome consists of three stages. Upon confrontation with a stressor, the organism enters the first stage, the alarm reaction, where overall resistance to a stressor initially decreases although bodily defenses for instance, inflammation, are activated. If the stressor is extremely intense at this point or if several additional stressors are present, resistance diminishes to zero and death ensues. During the second stage, the stage of resistance, the organism adapts to the presence of the stressor and sustains itself. It is possible for the stressor to increase the magnitude at this stage without causing perceptible harm. Bodily defenses are effective, and the organism either maintains or tolerates the presence of a stressor. Whether the organism resists a stressor actively or passively, its capacity to do so is finite. The presence of a stressor over an extended period will deplete the organism's resistance capacity and ultimately lead to

breakdown or death during the third phase, the stage of exhaustion.

Much advancement has been made in understanding the hormonal mediation of stress reactions. It is now standardly recognized that the emergency release of adrenaline represents only one aspect of the initial alarm reaction to stressors. Of equal importance in the maintenance of homeostasis is the hypothalamus-pituitary-adrenocortical axis, which is most likely a participant in the development of many disease phenomena (Selye, 1974). The stressor excites the hypothalamus (through pathways not yet completely identified), which in turn produces a substance that stimulates the pituitary to secrete the hormone ACTH (adrenocorticotrophic hormone) into the blood. ACTH then induces the external, cortical portion of the adrenal to discharge corticoids. This substance elicits thymus shrinkage, simultaneously with many other changes, such as atrophy of the lymph nodes, inhibition of inflammatory reactions, and the production of sugar (as an available source of energy). Another common feature of the stress reaction is the development of peptic ulcers in the stomach and intestines. Their production is encouraged through an increased level of corticoids in the blood and it is believed the autonomic nervous system also plays a role in eliciting ulcers.

Of significance in understanding the role of mediation of the stress response are the hormones and catecholamines, which are liberated to activate adaptation. Adrenaline (previously mentioned), specifically is secreted to make available energy, to accelerate the pulse rate, to elevate the blood pressure and the rate of blood circulation in the muscles, and to stimulate the central nervous system. Blood coagulation is also enhanced by adrenaline, as a protection against excessive bleeding. Therefore this system expedites a virtual arsenal of weapons by which the organism defends itself against life threatening circumstances. On the other hand, the relationship between psychological stress and catecholamine secretion is well documented (Williams, 1975). Catecholamines, particularly norepinephrine, have been shown to be related to arterial plaque formation, a part of the atherosclerotic process that precedes symptomatic coronary heart disease (Goldband, Katkin, and Morell, 1979). Januszewicz and Sznajderman (1972) and Frankel (1969) have argued that catecholamine is instrumental in the aggregation of thrombocytes (blood platelets) that can lead to thrombosis and acute myocardial infarction (Mustard and Packham, 1969). Furthermore, transitory vasoconstriction associated with elevated catecholamines may reduce blood flow through capillaries that support arterial plaques thereby enhancing their

necrosis and narrowing arterial lumens (Ardlie, Glew, and Schwartz, 1966).

Catecholamines also have been shown to exert a direct effect on myocardial lesions. Raab, Stark, MacMillan, and Gige (1961) reported that stress-induced catecholamine evaluations in rats produced myocardial lesions and that these lesions could be reduced by pretreatment with antiadrenergic (anticatecholamine) drugs. Therefore, any psychological stressor that increases levels of catecholamine can be considered a potential coronary heart disease pathogen (Goldband, Katkin, and Morell, 1979).

### **Maladaptive Responses**

Evidence of early adolescent and adolescent stress is as varied as youths themselves. For example, Thoresen and Eagleston (1983, p. 50) state:

The child or adolescent who is facing a set of demands with insufficient resources may respond in many ways that are harmful or maladaptive. "Miscoping" responses can include behavioral and environmental responses such as social withdrawal, alcohol or drug abuse and truancy. In the cognitive area, an imbalance of demands and resources could result in feelings of low self-esteem and beliefs about being a failure.

Academic under-achievement and dropping out of school are also related to chronic stress (Berzonsky, 1981; Santrock, 1981). In order to lower such anxiety and help maintain a sense of personal control, some adolescents adopt the strategy of simply giving up, refusing or risking an ungratifying performance (Schinke and Gilchrist, 1984).

Others have turned to drug use to reduce perceived stress and anxiety levels. Stress related medical complaints have made antianxiety medications such as diazepam (Valium) and chlordiazepoxide (Librium) the most widely prescribed drugs in the United States (Elliott and Eisdorfer, 1982).

Physical illness and deviant behavior can be regarded as responses to prolonged stress. Thoresen and Eagleston (1983) report psychosomatic conditions occurring in youth such as asthma, chronic abdominal pain, depression, hypertension, juvenile onset diabetes, juvenile rheumatoid arthritis, headaches, ulcers, and ulcerative colitis bear a relationship to psychological and psychosocial factors. Further, they report of these illnesses such as depression and hypertension, one out of every ten children appear to be affected. Boyce, et al. (1977) acknowledge an increase in respiratory tract illnesses in children and adolescents experiencing life stress. Clinical experience suggests psychological events may influence the time sequence of pubertal changes. Physical growth and sexual maturation in both sexes may be retarded or accelerated by emotional difficulties (Group for the Advancement of Psychiatry, 1968). Mechanic (1974, p. 93) emphasizes the severity of stress manifestations by stating: "One conception has informed many stress studies is that the cumulation of life difficulties increases vulnerability to illness of all types and in all bodily systems." The U.S. Department of Commerce

(1981) warns that compelling evidence reveals a significant number of those who experience a major stressful event will have negative health consequences within a few months. Research on the huge, multinational sample of young people indicated that physically ill, psychiatrically disturbed, and delinquent youth, when compared with normal adolescents, appeared much more often taxed beyond their resources and overwhelmed by their environment (Schinke and Gilchrist, 1984). Youth in the deviant groups were much more likely to report that they give up easily, often feel confused, at times think they would rather die than go on living, find it hard to establish friendships, and often conclude life as "an endless series of problems without solutions in sight" (Offer, Ostrov, and Howard, 1981, p. 77; Berzonsky, 1981; Gibbs, 1981).

It is not uncommon for even normal, competent youth to experience depression during adolescence (Teri, 1982). Mental depression typifies the teenager's inability to cope with today's problems of living (Sorochan and Bender, 1978). Sorochan and Bender (1978) further maintain failure and lack of success are important emotional contributors to depression. An examination of seventh and eighth graders in suburban Philadelphia revealed that one-third of the youths reported experiencing moderate to severe depressive symptoms and thirty-five percent reported current thoughts about

suicide (Albert and Beck, 1975). Current evidence of this problem is reflected by the present high rate of suicide amongst American adolescents--fifteen to nineteen years old (Hollinger and Offer, 1982).

Willgoose (1982, p. 28) reasons the seriousness of the situation as follows:

Significantly, a greater number of the problems, diseases and inadequacies of adult mankind do not suddenly appear; rather, they come about gradually, having been established during the early school years. This is to say that obesity, coronary thromboses, ulcers, backaches, gastrointestinal pains, hypertension, chronic fatigue, and the neurotic and psychotic behaviors related to the feelings of anxiety, apprehension, fear, worry, hatred and jealousy are all tied ultimately to a pattern of living. It is this pattern of living that is favorably influenced when values are formed early in life.

#### School Configuration and Early Adolescents

Appropriate school configuration for the emerging adolescent has become a subject of perpetual debate and challenge. Underlying these many challenges are elements of continual and increasing change taking place in technology, human development, sociological structures and in expanding knowledge (Eichhorn, 1966). School districts have questioned the merits of K-6/7-9/10-12, K-8/9-12, K-6/7-12, and other forms of grade configuration. The K-8 or 1-8 elementary school followed by the four year high school has been the traditional pattern for education in the United States. Schools for early adolescents have their roots in the late

19th century and the early years of the 20th century. McEwin (1983) has informed us that a wide variety of forces have converged to produce two major approaches to middle level education -- the junior high school and the middle school. With the advent of the middle school movement in the early 1960's, the debate has intensified serving particularly as a basis for re-examination of schools for early adolescents. Many school districts during 1920-70 time frame adopted the K-6/7-9/10-12 format of grade configuration. However, as Johnson (1982) reports, in recent years there has been a reversal of the junior high school (7-9) trend with greater increases in the middle school establishment.

When the junior high schools first appeared early in the present century, they reflected a concern of representatives of higher education for introducing high school subjects earlier in the school program. Therefore a shift from 8-4 organization to 6-3-3 resulted. Gibson (1978) contends it was not until some 20 years later that educators proceeded to discuss what the purpose of the junior high school should be. Published purposes have mentioned a bridge between the self-contained elementary school and the departmentalized high school, an exploratory program to help children choose a specific program in high school, and close personal, vocational, and academic guidance (Compton, 1968). Had the purposes for the

establishment of junior high schools been met, there would have been little need for reorganization. In comparing the goals set forth for the middle school with the conventional junior high school, it is difficult to discern any appreciable differences. Alexander and Kealy (1969) offer the following aims of the middle school:

1. To serve the educational needs of the "in-between-ages" in a school bridging the elementary school for children and the high school for adolescents.
2. To provide optimum individualization of curriculum, and instruction for a population characterized by great diversity.
3. To promote continuous progress through smooth articulation between the several phases and levels within the total educational program.
4. To facilitate the optimum use of personnel and facilities available for continuing improvement of schooling.

Through the work done by researchers to identify special needs, characteristics and developmental tasks of early adolescents, efforts have been made by curriculum specialists to be more sensitive to the physical, intellectual, emotional and social needs of this age group. The popularity of the middle school concept emerged as a result.

Proponents of the middle school concept argue that although the current 6-3-3 grade organization effectively met the needs of youngsters in the earlier decades of this century, it no longer relates realistically to the physical characteristics of today's transescents. Eichhorn (1966, p. 103) affirms this notion by stating:

The assumption that present elementary and junior high schools do not realistically reflect student's current maturational patterns is substantiated. . . . Research evidence [suggests] that students presently placed in a sixth grade elementary setting possess much greater similarity of physical maturation and social interests with seventh and eighth grade students than they do with children in grades kindergarten through five. For similar reasons, this same phenomenon of earlier physical maturation and social interest patterns suggests that it is inadvisable to place most present ninth grade junior high students with the transescent grouping. The ninth grade student reflects physical, mental, and social characteristics appreciably more advanced than middle school transescents.

In reference to appropriate middle level grade configuration, Valentine, Clark, Nickerson, and Keefe conducted a 1980 survey sponsored by the National Association of Secondary School Principals and found that the majority of over 1400 middle level principals at both junior high and middle schools considered 6-8 the ideal grade organizational pattern regardless of the grade organization of their own schools. In contrast, a 1966 comparable survey found that sixty-five percent of middle level principals considered 7-9 to be the ideal plan (Valentine, Clark, Nickerson, and Keefe, 1981).

Clark and Clark (1981, p. 142) warn: "The move to middle school education in many cases is little more than a name change and a reshuffling of grade level organization." As a result many early adolescents are being exposed to "junior editions" of high school at an earlier age (Vars, 1965; Sale, 1979).

Hoffman (1979), Arnold (1982) and McEwin (1981) have all expounded on the problems of educating early adolescents and the drawbacks of traditional educational approaches. "Continued research of student needs at different age levels finally revealed an almost irrefutable fact: Boys and girls entering puberty need courses and services not made available to them in traditional elementary grades or high school programs" (Brodinsky, 1979, p. 2).

Lipsitz (1984) informs us that presently due to the uncertainty of appropriate grade level configuration there is no concensus where young adolescents should be in school, let alone what specifically schools should be doing. However, as Van Til, Vars, and Lounsbury (1967, p. 56) implore: "The organizational pattern that a system employs does make a difference in the kind of program and experiences that are provided. . . . It should not be assumed therefore that the organizational issue can be bypassed. It is a prime consideration." Thornburg (1981, p. 136) voices his concern for the lack of pedagogical agreement on the preadolescent age group by stating: "The

learning characteristics of the early adolescent, and the instructional effectiveness of the teacher have not yet come into functional synchronization. In effect, the school environment is still not conducive to positive growth for these youngsters."

Lipsitz (1984) points out that as of December, 1979 there were 34 different grade combinations that attempted to encompass the middle grades. In response to the controversy regarding appropriate grade level configuration for early adolescents, Yoder (1982, p. 50) reasons:

Today with our society rushing along at break neck speed and foisting adult concerns on young children at earlier and earlier stages, the 7-9 configuration is outdated. A 6-8 organization, or in some parts of the country, 5-8 or 5-7 may be more important. Nevertheless, adjusting grade levels should not be confused with purposes and programs.

The work of Blyth, Simmons, Bush, and others (e.g., Blyth, Simmons, and Bush, 1978; Blyth, et al., 1983), suggests that different transitional patterns from elementary to secondary programs are related to different developmental outcomes for early adolescents. Self esteem, perceptions of victimization and anonymity, and self concept in early adolescents has shown dramatic changes due to environmental factors. Allan and Dyck (1984, p. 285) emphasize the need for structure in the early adolescent environment by stating: "Transition from childhood to adolescence is often a period of upheaval and turmoil. At the same time it can be a stage of vital and specific

learning. Students need a structure that will help them understand the changes they are experiencing and will give them a feeling of success and mastery." Schulenberg, Asp, and Petersen (1984, p. 129) offer a solution to the present controversy over early adolescent schools and programs by adding: "If our ultimate goal is devising an optimal educational environment for early adolescents, which takes into account the unique physical, psychological, and social characteristics of these young people, we must first uncover how our present education system effects their development." No study to date has examined the mediational effect of school configuration on the amount of life events associated with preadolescence.

#### Related Research

In order to quantify and demonstrate the effects of stressful life events, researchers have commonly requested respondents to complete an inventory of recent events occurring in their lives such as the Life Experiences Survey (LES; Sarason, Johnson, and Siegel, 1978) or the Schedule of Recent Experiences Survey (SRE; Holmes and Rahe, 1967) for adults, the Coddington Scales (Coddington, 1972a), the Life Events Checklist (LEC; Johnson and McCutcheon, 1980), the Junior High Life Experiences Survey (JHLES; Swearington, 1984) and the Youth Adaptation Rating Scale (YARS; Beall and Schmidt, 1984), for children and adolescents. Scores

obtained on these life event inventories have been correlated with measures of either psychological and physical impairment or amount of adaptation required. From these studies, considerable evidence has reinforced the assumption of the stressful and adverse effects of physical and psychological consequences of life events (Rabkin and Struening, 1976).

### **Life Event Inventories for Children**

Coddington (1972a, b) was the first to develop a set of stress scales specifically designed for use with children. Using Holmes and Rahe's (1967) strategy, Coddington developed four separate lists of items for preschool, elementary, junior high, and high school age groups. These lists were next rated by teacher, pediatrician, and mental health professional judges, and mean ratings for each item were computed (1972a). In the second study (1972b) norms for normal children in all four age groups were assembled, with parents completing life event checklists for the two younger age groups. The Coddington scales have been employed in several studies (e.g., Bedell, et al., 1977; Heisel, et al., 1973; Padilla, Rohsenow, and Bergman, 1976) and the data generally have demonstrated a positive relationship between life stress and physical and psychological harm.

A major criticism of the Coddington and the SRE scales is that the items on both scales were derived and weighted by individuals other than the children themselves. The Yeaworth, et al. (1980) scale is subject to similar criticism.

Several scales (e.g., The Coddington Junior High Scale, YARS, and the LEC) appear to be appropriate for use with the preadolescent population, when particular items included bear questionable merit considering the uniqueness of this age group.

The instrument to be used for this study, the Preadolescent Life Event Inventory (PLEI), a modification of the YARS (Beall and Schmidt, 1984) offers the distinct advantage of exclusively focusing on the early adolescent population. Additionally, the instrument (YARS) was originally designed and weighted by youths themselves. Lastly, a review of the existing preadolescent stress literature reveals a lack of items which are now covered under the PLEI.

#### Summary

As evidenced from this review of literature, the experience of life change and stressful life events is an inevitable consequence of preadolescent and adolescent growth and development. A sizeable body of literature has accumulated relating to the effects of stress on adults.

Evidence indicates that life stress bears a strong relationship to a host of health related problems. Much less is known about the effects of life stress on children, preadolescents and adolescents. Preliminary evidence suggests the effects of stress on children correspond to those found in adults. The middle school movement has highlighted the issue of appropriate school configuration to meet the unique needs of the early adolescent population. A question has emerged from this review of literature that bears relevance to the heightened awareness of preadolescence as a distinct transitional period: Do environmental factors have an impact on perceived stressful events in early adolescence? Considering the apparent significance of stressful life events to ensuing health, it would seem that continued research into preadolescent stress is clearly of major importance.

## CHAPTER 3

### METHODS

The following methodology was utilized to compare the relationship of school configuration, gender and ethnicity on the mean number of life events experienced by early adolescents.

#### Population

The nine participating schools are located in the southwestern part of the United States. The population of the schools was representative of all ethnic groups, socioeconomic groups, and all family structures in the surrounding area.

Analyses were limited to eighth grade students who attended either a 6-7-8 middle school or eighth grade students who attend a 7-8 junior high school. In support of the previously noted statement (p. 52) by Schulenberg, Asp, and Petersen (1984), length of time in each educational environment was the criteria for the selection of subjects for this study. (Two-year requirement for eighth graders at 6-7-8 schools and one-year requirement for eighth graders at 7-8 schools.) As formerly noted, Van Til, Vars, and Lounsbury (1967) have emphasized that organizational patterns do make a difference in programs and experiences

that are provided to early adolescents. Organizational pattern, then, may influence stressful life event experiences. Therefore, this study seeks to provide information on early adolescent stressful life event experiences and for improvement in school organizational patterns. Through the cooperation of several school districts and schools, 529 eighth grade students in 7-8 schools and 308 students in 6-7-8 schools were tested using the Preadolescent Life Event Inventory (PLEI), modified from the Youth Adaptation Rating Scale (YARS) by Beall and Schmidt (1984).

#### Development of the Preadolescent Life Event Inventory

The instrument for this study (PLEI) was a slightly modified form of the YARS (Beall and Schmidt, 1984) to assess the unique preadolescent population. The original instrument, YARS (Beall and Schmidt, 1984), included 58 life event items that are pertinent to older adolescents; however, based upon an extensive search of the developmental literature, are not representative of life events unique to the early adolescent population.

The revised form (PLEI) contains 55 life event items inclusive of one item concerning "other stressful life events," and the addition of questions pertaining to date of birth, length of time living in present city, completed grades of school attendance, and a 5-point Likert scale of

perceived present level of stress, (see Appendix A, Preadolescent Life Event Inventory). For this study four life event items were omitted, five life event items were slightly modified from the YARS, and one item was added. All other life event items and biographical data located on the PLEI are verbatim from the YARS published by Beall and Schmidt (1984).

The four life event items that were omitted from the YARS (Beall and Schmidt 1984) are as follows:

Omitted Items

Getting a car  
 Trying to get a job/job interview  
 Getting married  
 Taking the driver license test

The five items modified for the PLEI are as follows:

<u>Items on YARS</u>	<u>Modified Items on PLEI</u>
Graduation	Graduation from former school
Problems developed with teachers, employers	Problems developed with teachers
Getting fired from a job	Parent(s) unemployed or fired from a job
Going into debt	Parent(s) going into debt
Taking finals/SAT Test	Taking standardized tests

The one item that was added to the PLEI is as follows:

Added Item on PLEI

Other stressful events (please list)

Sample

Sample subjects were extracted from a total school population consisting of 1228 students, 47.4 percent of whom were male (n=582) and 52.2 percent were female (n=641). Ethnic classification of the total school population consisted of 67.4 percent Anglo-Caucasian (n=828), 17.3 percent Hispanic (n=213) and 12 percent all others (n=148).

The sample population consisted of 837 eighth grade students who met the criteria for selection of subjects for this study. These students were sampled from nine middle level schools located in the southeastern part of Arizona.

As shown in Table 1, males comprised 47.2 percent (n=395) and females comprised 52.6 percent (n=440) of the sample. Ethnic classification of the sample consisted of 66.2 percent Anglo-Caucasian (n=554), 18.4 percent Hispanic (n=154) and 13.3 percent all others (inclusive of Native American Indians, Blacks, Oriental/Polynesians and others) (n=111).

Age of the sample ranged from seven to sixteen years with 73 percent of the respondents (n=580) indicating they were thirteen years old. The mean or average age was 13.23 years with 98.9 percent (n=678) of the sample respondents indicating they were thirteen years or older.

Table 1. Demographic characteristics of respondents.

<u>School</u>	<u>Frequency (Percent)</u>	<u>Frequency (n)</u>
7-8	63.2	529
6-7-8	36.8	308
<u>Sex</u>	<u>Frequency (Percent)</u>	<u>Frequency (n)</u>
Males	47.2	395
Females	52.6	440
Nonresponse	.2	2
<u>Ethnicity</u>	<u>Frequency (Percent)</u>	<u>Frequency (n)</u>
Anglo-Caucasian	66.2	554
Hispanic	18.4	154
All others	13.3	111
Nonresponse	2.2	18
Total	100.0	837
<u>Age</u>	<u>Frequency (Percent)</u>	<u>Frequency (n)</u>
7	.1	1
10	.3	2
11	.4	3
12	1.1	9
13	73.0	580
14	22.9	182
15	2.0	16
16	.1	1
6th grade attendance at school	<u>Frequency (Percent)</u>	<u>Frequency (n)</u>
Yes	25.2	310
No	42.7	524
Nonresponse	.2	3
7th grade attendance at school	<u>Frequency (Percent)</u>	<u>Frequency (n)</u>
Yes	68.2	837
Stress level compared to friends	<u>Frequency (Percent)</u>	<u>Frequency (n)</u>
Much lower	4.3	36
Somewhat lower	14.0	117
Same	46.1	386
Somewhat higher	28.4	238
Extremely higher	5.3	44
Nonresponse	1.9	16

Total sample subjects from 7-8 schools comprised 63.2 percent (n=529) and subjects from 6-7-8 schools comprised 36.8 percent (n=308). As further shown in Table 1, 25.2 percent (n=310) of the sample indicated they attended 6th grade at their school and 68.2 percent (n=837) indicated they attended 7th grade at their school.

The largest percentage of sample respondents (46.1 percent) indicated they had the same stress level as compared to friends of their same age; 33.7 percent indicated they were experiencing somewhat and extremely higher stress than that of friends their same age. In contrast, 18.3 percent of the sample respondents felt they were experiencing somewhat lower and much lower stress levels.

#### Procedures

A questionnaire involving a single group of subjects studied once which was affected by agents (school configuration, gender, and ethnicity) presumed to cause change was employed to provide answers to the research questions.

Since the subjects were queried regarding various life events experienced within the past twelve months, a true experimental design was not appropriate.

The population of the study consisted of eighth graders at nine different schools. Specifically, all eighth

graders in the schools were asked to complete the questionnaire used in this study. After completing the questionnaire, subjects were screened on the basis of length of time at the school (one-year requirement for subjects from a 7-8 school and two-year requirement for subjects from a 6-7-8 school). To ensure a representative school population, comparisons between sample population characteristics and school population characteristics were made (for example, ethnicity and gender).

Following district, principal (see Appendix C, Principal Approval Form), and faculty (see Appendix D, Faculty Approval Form) approval, a faculty meeting was arranged at each of the nine schools to explain the administration procedures of both the parental permission form (see Appendix E, Parental Approval Form) and questionnaire (see Appendix A, Preadolescent Life Event Inventory). On the specific date, parental permission forms were given to students by cooperating teachers to take home for parental approval of student participation in the study. Later, approved parental permission forms were collected from students and recorded by the cooperating teachers. On the next specified date, the questionnaire was administered once to all parent-approved eighth grade students by the cooperating teachers. The cooperating teachers read the test directions and kept classroom order while students completed the questionnaire. Upon completion, all

questionnaires were recovered by the cooperating teachers and returned to the major researcher of this study.

### Measures

A questionnaire was utilized to assess the effects of school configuration, gender classification, and ethnic origin on eighth grade students' amount of perceived stressful life events (see Appendix A, Preadolescent Life Event Inventory, PLEI). The inventory has been slightly modified from the Youth Adaptation Rating Scale, YARS (Beall and Schmidt, 1984), to exclude items not pertinent to this age group and include items of relevance to this study.

The PLEI is composed of three formats: A checklist of stressful life events commonly occurring during preadolescence, gender classification, ethnic origin, and years of school attendance; a fill in the blank section for additional stressful life events, date of birth, and years of living in present city; and a 5-point Likert format scale of present level of perceived stress.

The YARS instrument has been successfully used in the past (Beall and Schmidt, 1984) and has provided useful information. Reliability of the instrument was determined by the test-retest method. The YARS was administered to 234 junior and senior high school students twice within one week. The two sets of scores were correlated using the

Pearson Product Moment procedure and the reliability estimate reported by Beall and Schmidt (1984) was .94.

### Hypotheses

The following null hypotheses were tested:

- H1: There will be no difference in mean number of life events experienced between the groups of eighth graders in 6-7-8 grade school configurations and 7-8 grade school configurations.
- H2: There will be no difference in mean number of life events experienced between eighth grade males and females within the two school configurations.
- H3: There will be no difference in mean number of life events experienced between eighth grade ethnic groups within the two school configurations.
- H4: There will be no difference in mean number of life events experienced between the two school configurations, ethnicity, and gender of the respondents.

### Treatment of Data

Null hypothesis (H1) was tested using 1-way analysis of variance (ANOVA) with one dependent variable being mean number of life events and one independent variable being the type of school configuration.

Null hypothesis (H2) was tested using 2-way analysis of variance (ANOVA) with one dependent variable

being mean number of life events and two independent variables constituting gender classification and type of school configuration.

Null hypothesis (H3) was tested using 2-way analysis of variance (ANOVA) with one dependent variable being mean number of life events and two independent variables constituting ethnic classification and type of school configuration.

Null hypothesis (H4) was tested using 3-way analysis of variance (ANOVA) with one dependent variable being mean number of life events and three independent variables constituting type of school configuration, ethnic classification, and gender classification.

Each of the four hypotheses was tested at the .05 level of significance. Where appropriate, practical issues are discussed. In addition, mean score differences in excess of 10 percent were considered to be practically significant.

## CHAPTER 4

### FINDINGS

The purpose of this study was to examine the relationship of school configuration, gender, and ethnicity upon the mean number of life events experienced by early adolescents. This chapter presents findings that emerged from the methods and procedures described in Chapter 3.

Prior to hypothesis testing, the psychometric appropriateness for using the fifty-five item life event scale with this particular sample of early adolescents was examined by computing Cronbach's (1951) coefficient alpha. This analysis yielded an alpha estimate of .80.

A zero order correlation coefficient was computed between the life event total scores and the perceived level of stress scale to estimate convergent validity between measures. The resultant Pearson correlation coefficient was  $r = .30$  ( $r^2 = 9.0$  common variance). Hence, regardless of the impressive reliability estimate, it was found in this study life event scores are not synonymous with stress as measured by the perceived level of stress scale (91 percent of the scale variance was unique to each measure).

## Hypothesis Testing

### **Hypothesis One**

$H_1$ : There will be no difference in mean number of life events experienced between the groups of eighth graders in 6-7-8 grade configurations and 7-8 grade configurations.

As shown in Table 2, a significant difference between the two school configurations is evidenced ( $F[1,835] = 9.21$ ). Examination of cell means indicate eighth grade students enrolled in the 6-7-8 schools experience more life events ( $\bar{x} = 14.16$ ) than eighth grade students enrolled in the 7-8 schools ( $\bar{x} = 12.80$ ). This difference is statistically significant ( $p < .05$ ). It can therefore be concluded that eighth graders attending the two school conditions (i.e., 7-8 or 6-7-8) yield differences that would not normally be expected by chance. The null hypothesis, therefore, was rejected.

### **Hypothesis Two**

$H_2$ : There will be no difference in mean numbers of life events experienced between eighth grade males and females within the two school configurations.

This hypothesis focused on the gender of individuals contrasted with type of school configuration. The results of this analysis are presented in Table 3. As evidenced from Table 3, significant main effects were noted for both school configuration and gender. Differences are

Table 2. Means, standard deviations and analysis of variance results depicting the relationship between life events and school configuration.

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
School configuration	359.48	1	359.48	9.21*
Within cell (error)	32585.44	835	39.02	

<u>School configuration</u>			
<u><math>\bar{x}</math></u>	<u>7-8</u>	<u>SD</u>	
12.80		6.12	
			<u>SD</u>
			6.45

NOTE: \*Indicates statistical significance;  $p < .05$

Table 3. Means, standard deviations and analysis of variance results depicting the relationship between life events, school configuration and gender.

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
<u>Main Effects</u>				
School	361.70	1	361.70	9.51*
Gender	847.87	1	847.87	22.29*
<u>2-way Interaction</u>				
School/gender	20.33	1	20.33	.54
Within cell (error)	31599.26	831	38.02	

NOTE: \*Indicates statistical significance;  $p < .05$

<u>Gender</u>	<u>School Configuration</u>					
	<u>7-8</u>		<u>6-7-8</u>		<u>Total</u>	
	<u><math>\bar{x}</math></u>	<u>SD</u>	<u><math>\bar{x}</math></u>	<u>SD</u>	<u><math>\bar{x}</math></u>	<u>SD</u>
Males	11.88	6.07	12.90	6.22	12.25	6.14
Females	13.66	6.05	15.33	6.44	14.28	6.24
Total	12.80	6.12	14.16	6.46		

statistically significant ( $p < .05$ ). Examination of cell means indicate regardless of the type of school configuration, females ( $\bar{x} = 14.28$ ) experience more life events than males ( $\bar{x} = 12.25$ ). Within the two schools, the same conclusion can be made wherein females experience more life events than males ( $\bar{x}$  for females in 7-8 schools = 13.66;  $\bar{x}$  for males in 7-8 schools = 11.88), ( $\bar{x}$  for females in 6-7-8 schools = 15.33;  $\bar{x}$  for males in 6-7-8 schools = 12.90). These data indicate that females in 6-7-8 schools experience more life events than any other gender by school grouping. The two-way interaction was not significant indicating the variables of school configuration and gender in combination do not contribute to a notable difference in life event scores. The null hypothesis, therefore, was rejected.

### **Hypothesis Three**

H<sub>3</sub>: There will be no difference in mean number of life events experienced between eighth grade ethnic groups within the two school configurations.

The third hypothesis addresses the effect of ethnicity and type of school configuration on the mean number of life events experienced. As shown in Table 4, ethnicity did not yield a significant F in contrast to school main effects which indicated a significant difference at  $p < .05$ . As further evidenced in Table 4, the 2-way

Table 4. Means, standard deviations and analysis of variance results depicting the relationship between life events, ethnicity, school configuration and gender.

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Ethnicity	87.63	2	43.81	1.16
School	269.65	1	269.65	7.14*
Gender	881.52	1	881.52	23.36*
<u>2-way Interactions</u>				
Ethnicity/School	62.85	2	31.42	.83
Ethnicity/Gender	57.17	2	28.58	.76
School/Gender	24.08	1	24.08	.64
<u>3-way Interactions</u>				
Ethnicity/School/ Gender	238.15	2	119.07	3.15*
Within cell (error)	30369.12	805	37.72	

NOTE: \*Indicates statistical significance;  $p < .05$

<u>Ethnicity</u>	<u>School Configuration</u>					
	<u>7-8</u>		<u>6-7-8</u>		<u>Total</u>	
	<u><math>\bar{x}</math></u>	<u>SD</u>	<u><math>\bar{x}</math></u>	<u>S</u>	<u><math>\bar{x}</math></u>	<u>SD</u>
Anglo-Caucasian	12.97	5.85	14.46	6.48	13.59	6.16
Hispanic	12.69	6.67	13.05	5.86	12.79	6.45
All others	12.48	6.46	13.11	6.74	12.63	6.50
Totals	11.22	5.80	14.67	7.65		

<u>Gender</u>	<u>Ethnicity</u>	<u>School Configuration</u>					
		<u>7-8</u>		<u>6-7-8</u>		<u>Total</u>	
		<u><math>\bar{x}</math></u>	<u>SD</u>	<u><math>\bar{x}</math></u>	<u>SD</u>	<u><math>\bar{x}</math></u>	<u>SD</u>
Male	Anglo-Caucasian	12.15	6.02	12.82	5.84	12.44	5.94
	Hispanic	10.80	5.52	13.71	8.65	11.39	6.31
	All others	12.33	7.02	12.10	4.73	12.28	6.58
Totals		11.88	6.08	12.90	6.23		

Table 4. (Continued)

---

		<u>School Configuration (con't)</u>					
<u>Gender</u>	<u>Ethnicity</u>	<u>7-8</u>		<u>6-7-8</u>		<u>Total</u>	
		<u><math>\bar{x}</math></u>	<u>SD</u>	<u><math>\bar{x}</math></u>	<u>SD</u>	<u><math>\bar{x}</math></u>	<u>SD</u>
Female							
	Anglo-Caucasian	13.73	5.61	16.07	6.70	14.68	6.17
	Hispanic	14.46	7.19	12.69	3.77	13.92	6.31
	All others	12.61	5.99	14.25	7.68	13.05	6.46
Totals		13.66	6.05	15.33	6.44		

---

interaction of ethnicity/school also did not yield a significant difference.

Examination of cell means for school configuration by ethnicity in Table 4 indicates the Anglo-Caucasian ethnic group at both 7-8 schools ( $\bar{x} = 12.97$ ) and 6-7-8 schools ( $\bar{x} = 14.46$ ) experience more life events than do the other ethnic groups. The composite group of All Others in 7-8 schools ( $\bar{x} = 12.48$ ) experience the least number of life events whereas in 6-7-8 schools, the Hispanic group ( $\bar{x} = 13.05$ ) experienced the least. Overall, the composite group of All Others ( $\bar{x} = 12.48$ ) experienced the least number of life events.

Consequently, due to lack of a significant F, it can be concluded in this study, the number of life events are not affected by ethnicity or the combination of ethnicity and type of school configuration. The null hypothesis was therefore retained.

#### **Hypothesis Four**

$H_4$ : There will be no difference in mean number of life events experienced between the two school configurations, ethnicity and gender of the respondents.

The last hypothesis focuses upon the 3-way interaction of the three variables: school configuration, ethnicity, and gender. As shown in Table 4, all 3 variables

do influence the number of life events experienced. This difference is statistically significant ( $p < .05$ ).

Examination of all means indicate within the totals category for school by gender by ethnicity, Anglo-Caucasian males ( $\bar{x} = 12.44$ ) and Anglo-Caucasian females ( $\bar{x} = 14.68$ ) experience more life events than any other gender by ethnicity respondents. Further, in the totals category for school by gender by ethnicity, Hispanic males ( $\bar{x} = 11.39$ ) and females in the All Others group ( $\bar{x} = 13.05$ ) experience the least number of life events. In contrast, Hispanic males in 6-7-8 schools ( $\bar{x} = 13.71$ ) experience more life events than males in any other ethnicity by school grouping. Anglo-Caucasian females in 6-7-8 schools ( $\bar{x} = 16.07$ ) experience more life events than any other gender, ethnicity or school configuration grouping. Respondents that experience the least number of life events include Hispanic males in 7-8 schools ( $\bar{x} = 10.80$ ) and males in the All Others ethnic group in 6-7-8 schools ( $\bar{x} = 12.10$ ).

Within 7-8 schools, examination of cell means indicate males in the All Others ethnic group ( $\bar{x} = 12.33$ ) experience more life events than males in either the Anglo-Caucasian ethnic group ( $\bar{x} = 12.15$ ) or the Hispanic ethnic group ( $\bar{x} = 10.80$ ). Also within 7-8 schools, Hispanic females ( $\bar{x} = 14.46$ ) experience more life events than females in either the Anglo-Caucasian ethnic group ( $\bar{x} = 13.73$ ) or the All Others ethnic group ( $\bar{x} = 12.61$ ).

Within 6-7-8 schools, examination of cell means indicate males in the Hispanic group ( $\bar{x} = 13.71$ ) experience more life events than males in the Anglo-Caucasian group ( $\bar{x} = 12.82$ ) with males in the All Others ethnic group ( $\bar{x} = 12.10$ ) experiencing the least. Anglo-Caucasian females in 6-7-8 schools ( $\bar{x} = 16.07$ ) as noted, experienced a greater number of life events than did females in any other ethnic group. In contrast, females in the All Others ethnic group from 6-7-8 schools ( $\bar{x} = 12.61$ ) experience the least life events of any female group.

The interaction of the three independent variables (school, ethnicity, and gender) with the dependent variable of life events are illustrated in Figure 1. As shown in Figure 1, the highest number of life events were reported by females in the Anglo-Caucasian ethnic group from 6-7-8 schools and the least number of life events were reported by Hispanic males from 7-8 schools. However, in the Hispanic group, females from 7-8 schools and males from 6-7-8 schools reported more life events than females from 6-7-8 schools. Hispanic females from 7-8 schools reported the most life events of any Hispanic group, however, in the all others ethnic group, females from 7-8 schools report fewer life events than females from 6-7-8 schools. Also, in the Hispanic group, females from 7-8 schools and males from 6-7-8 schools reported experiencing more life events than females from 6-7-8 schools or males from 7-8 schools. There

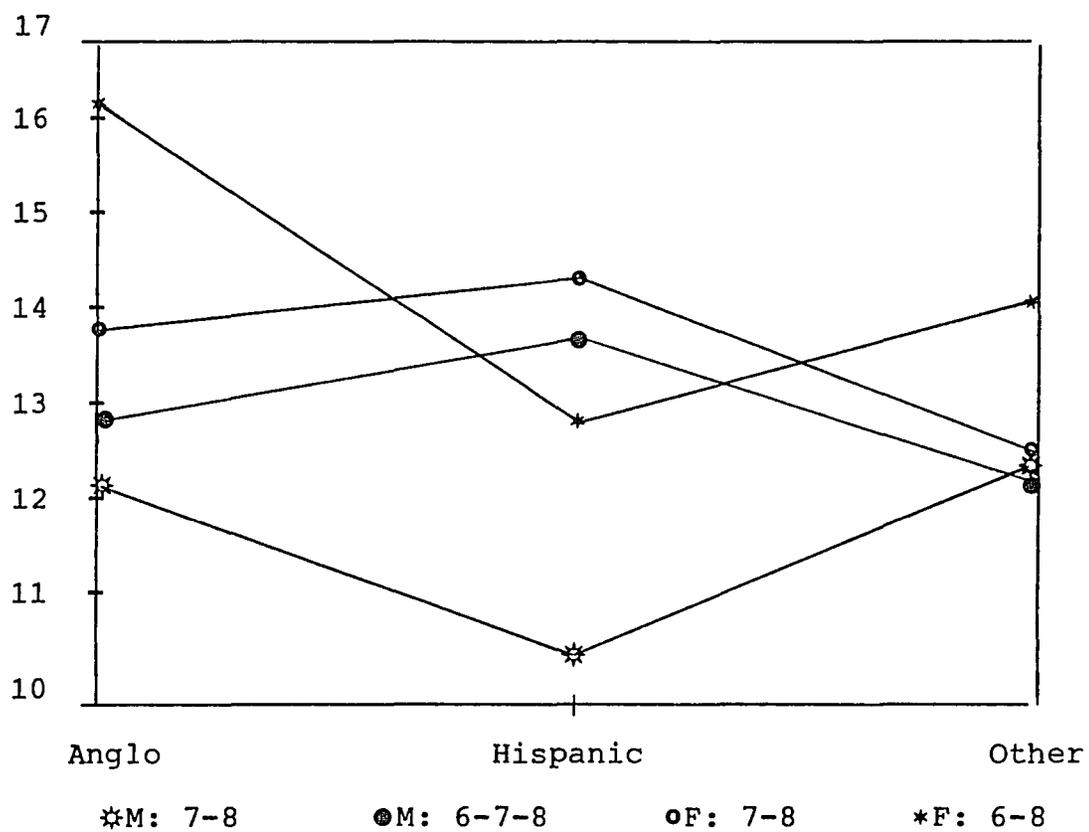


Figure 1. Life events by school, ethnicity, and gender.

is a different trend noted for individuals in the All Others ethnic group where females from 6-7-8 schools experienced more life events than females from 7-8 schools or males from 6-7-8 schools. Males from 7-8 schools in both the Anglo-Caucasian and Hispanic groups report the least number of life events. In contrast, males from 7-8 schools in the All Others ethnic group reported more life events than did All Other males from 6-7-8 schools. The null hypothesis was, therefore, rejected.

#### Summary

In conclusion, a significant difference was found in the statistical analysis for Hypothesis One, where mean number of life events experienced by early adolescents and school configuration were compared. Null hypothesis one was therefore rejected. Hypothesis Two found a significant difference for the main effect of gender on the mean number of life events experienced by early adolescents. The null hypothesis was therefore rejected. No significant difference was found with the 2-way interaction of gender by school configuration on the mean number of life events experienced by early adolescents. Analysis of the findings for Hypothesis Three neglected to find significant differences in either the main effect of ethnicity or 2-way interaction of ethnicity by school configuration on the mean number of life events experienced by early adolescents.

Null hypothesis three was therefore retained. Analysis of the findings for Hypothesis Four found a significant 3-way interaction with the variables school configuration, gender and ethnicity on the mean number of life events experienced by early adolescents. Null hypothesis four was therefore rejected.

## CHAPTER 5

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Many statistics have been published regarding the problems of adolescence and early adolescence, yet little research has been conducted to determine if school configuration, gender, and ethnicity have any effect on these problems. The degree to which educators are able to impart significant information (the process known as education) could be hampered by the amount of stressful life events which are often experienced by young people. Without empirical data, the improvement of existing programs as well as the development of new or alternative programs aimed at reducing stressful life events, coping with change and encouraging healthier lifestyle choices appears doubtful. Determining specifically what life events early adolescents are experiencing will aid middle level administrators and educators in improving schools to address student needs and maximize learning.

#### Purpose

The purpose of this study was to compare the relationship of school configuration, gender, and ethnicity on the mean number of life events experienced by early adolescents.

### Sample

The sample consisted of 837 eighth grade students from nine middle level schools, located in the southeastern part of Arizona. 529 students were from 7-8 schools and 308 students were from 6-7-8 schools. Subjects were sampled on the basis of length of time at their school (two-year criteria for eighth graders at 6-7-8 schools and one-year criteria for eighth graders at 7-8 schools). The total number of males sampled was 395 and the total number of females sampled was 440. Subjects from the Anglo-Caucasian ethnic group numbered 554, while subjects from the Hispanic ethnic group numbered 154 and those in all other ethnic groups numbered 111. The ages of the subjects ranged from 7-16 years with 73 percent of the respondents indicating they were 13 years old.

### Procedures

A questionnaire involving a single group of subjects studied once which was affected by some agents (school configuration, gender, and ethnicity) presumed to cause change was employed to provide answers to the research questions. All eighth graders in the schools were asked to complete the questionnaire used in the study. Sample subjects were screened, after completing the questionnaire, on the basis of length of time at the school. Representative subjects at each of the school configuration

types responded to the Preadolescent Life Event Inventory (PLEI).

#### Measurement

The questionnaire used in this study was slightly modified from the Youth Adaptation Rating Scale (YARS) (Beall and Schmidt, 1984) to exclude items not pertinent to this age group and include items of relevance to this study.

#### Treatment of Data

To examine the psychometric appropriateness for using the fifty-five item life event scale with this particular sample of early adolescents, reliability and convergent validity in terms of stress measures were assessed prior to hypothesis testing. With the exception of convergent validity, all measures showed acceptable levels of reliability.

Null hypothesis ( $H_1$ ) was tested using 1-way analysis of variance (ANOVA) with one dependent variable being mean number of life events and one independent variable being type of school configuration.

Null hypothesis ( $H_2$ ) was tested using 2-way analysis of variance (ANOVA) with one dependent variable being mean number of life events and two independent variables consisting of gender classification and type of school configuration.

Null hypothesis ( $H_3$ ) was tested using 2-way analysis of variance (ANOVA) with one dependent variable being mean number of life events and two independent variables constituting ethnic classification and type of school configuration.

Null hypothesis ( $H_4$ ) was tested using 3-way analysis of variance (ANOVA) with one dependent variable being mean number of life events and three independent variables comprising type of school configuration, ethnicity, and gender classification.

### Findings

#### **School Configuration Effect**

Examination of data for the two school configuration types (7-8 schools and 6-7-8 schools) revealed significant effects for the dependent variable, life event score. Eighth graders from 6-7-8 schools experienced more life events than eighth graders from 7-8 schools.

#### **School Configuration and Gender Effect**

The analysis which employed school configuration and gender classification revealed significant main effects for the dependent variable life event score. The 2-way interaction of school configuration by gender showed no difference. Within each school configuration type (7-8 or 6-7-8), females experience more life events than males.

### **School Configuration and Ethnicity Effect**

Examination of the results using ethnicity as a variable showed no significant difference in either main effects or 2-way interaction of ethnicity and school configuration for the dependent variable, life event score.

### **School Configuration, Ethnicity, and Gender Effect**

The analysis which employed school configuration, ethnicity, and gender classification revealed a significant difference in the 3-way interaction for the dependent variable, life event score. Anglo-Caucasian females in 6-7-8 schools experience more life events than any other gender, ethnicity, or school configuration grouping. Respondents that experience the least number of life events include Hispanic males from 7-8 schools and males in the All Other ethnic category from 6-7-8 schools.

### Conclusions

The conclusions of the study are stated within the framework of the hypotheses previously enumerated.

Hypothesis One was concerned with a comparison of mean number of life events experienced by eighth grade students enrolled in either 7-8 or 6-7-8 schools (as measured by the Preadolescent Life Event Inventory). Significant effects were observed for groups of students

from the two school configurations. The findings refute the null hypothesis.

Hypothesis Two was concerned with a comparison of mean number of life events experienced and gender differences of eighth grade students enrolled in 7-8 or 6-7-8 school configurations. The findings showed significant main effects for gender differences, however, the interaction showed no significant differences. The null hypothesis was therefore rejected.

Hypothesis Three was concerned with the comparison of school configuration and ethnicity with the mean number of life events experienced by eighth grade students. The findings showed no significant differences for either main effects or the interaction comparison. The null hypothesis was therefore accepted.

Hypothesis Four was concerned with the comparison of school configuration, ethnicity, and gender classification with the mean number of life events experienced by eighth grade students. The findings showed significant main effects for the variables of school configuration and gender classification as well as significant interaction effects in the 3-way comparison. The null hypothesis was therefore rejected.

## Discussion of Conclusions

Any discussion of the conclusions of this study should be tempered with an understanding of the limitations. The limited number of respondents, limited number of participating schools and restricted geographical area covered could have an influence on the generality of the findings. The skewed minority representation as compared to other geographical locations could further exert influence on the general utility of application of the findings from the study. There is a degree of uncertainty for the resultant convergent validity coefficient when only one question relating to perceived self stress is utilized. The zero order coefficient ( $r^2 = 9.0$  percent common variance) indicates that each life event is 91 percent unique to itself unrepresentative of perceived self stress. The low statistical variance of the zero order correlation coefficient could further be an indication of other variables not addressed in this study. Additional variables include: subject curriculum employed at each school, various teaching methodologies, teacher-student ratios, school policy differences at each school, support programs and extracurricular activities offered, and the qualities of facilities available at each school.

Appendix G (School Percentage by Item from Preadolescent Life Event Inventory) illustrates response frequency (in percent) of each life event represented on

the Preadolescent Life Event Inventory. As shown in Appendix G, 39 items were selected by more eighth graders from 6-7-8 schools than eighth graders from 7-8 schools. In contrast, 17 items were selected by more eighth graders in 7-8 schools than eighth graders from 6-7-8 schools.

Analysis of the three life events most frequently experienced by subjects from 7-8 and 6-7-8 schools include life event item 26, Arguments with peers/brothers/sisters (7-8 = 71.3 percent, 6-7-8 = 79.9 percent); Life event item 35, Taking tests (7-8 = 75.0 percent, 6-7-8 = 77.3 percent); life event item 55, Other stressful events (one item) (7-8 = 74.9 percent, 6-7-8 = 66.9 percent). Life event items with the largest representative difference between groups include: life event item 9, Getting acne/warts (7-8 = 35.7 percent, 6-7-8 = 51.6 percent); life event item 1, Graduation from former school (7-8 = 16.3 percent, 6-7-8 = 5.8 percent); and life event item 3, Fights with parents (7-8 = 56.7 percent, 6-7-8 = 65.9 percent).

The retained null hypothesis ( $H_3$ ) which was concerned with the effect of ethnicity and school configuration on the mean number of life events experienced by eighth grade students showed no significant difference. This finding was supportive of Beall and Schmidt's (1984) study on life events occurring to adolescents where no significant difference was found among various ethnic groups.

This study is unique in that it includes a consideration of school configuration as well as the frequency of life events upon early adolescents which none of the prior studies of this type have examined.

#### Recommendations for Future Research

In examining the findings and conclusions of this study, several recommendations appear to be appropriate.

Examination of additional variables related to life event experiences needs to be studied. Each study will contribute new information about reducing stressful life events and suggest ways to improve coping skills in students. As more is learned, revisions can be made to improve the school's effectiveness in reducing or modifying the negative effects of stressful life events upon early adolescents. Replications of this study should take into account several considerations:

1. improvement in existing convergent validity measures between stress level and life event items;
2. analysis of additional variables inherent in each school program that could contribute to increased stressful life event experiences;
3. weighting of each life event item in terms of perceived level of stress.
4. an analysis of programs developed to assist students in coping with stressful life events;

5. analysis of other forms of school configurations on stressful life event experiences;
6. examination of life events with different student populations;
7. determination of positive life event experiences and negative life event experiences.

#### Implications for the Practitioner

The findings of this study identified the number and types of life events occurring to a group of sample early adolescents. It further identified student population differences in life event scores.

Youth rates for crime, chemical abuse, and teen pregnancy are but a few societal problems that should direct our efforts toward corrective action. The rate at which these and other problems are increasing is cause for real concern.

As a potential for school/program improvement, some of the more frequently experienced life event items could possibly be reduced by program modification. These include: an in-depth understanding of existing stressful life events occurring to early adolescents, additional programs aimed at reducing and coping effectively with stressful life events, and alternative modes for measuring student achievement other than administering tests, as evidenced by the event most frequently scored by the participants.

As these measures and many others are implemented, it is believed that other solutions will surface and provide some guidelines for additional improvement programs into the future.

APPENDIX A

PREADOLESCENT LIFE EVENT INVENTORY

## PREADOLESCENT LIFE EVENT INVENTORY

A modification of the Youth Adaptation Rating Scale, YARS (Beall and Schmidt, 1984).

DIRECTIONS: Place a check in the box to the left of the items which you have experienced during the past 12 months.

- |   |   |
|---|---|
| <input type="checkbox"/> GRADUATION FROM FORMER SCHOOL  | <input type="checkbox"/> PARENT(S) UNEMPLOYED OR FIRED FROM JOB                           |
| <input type="checkbox"/> PET DIES   | <input type="checkbox"/> PARENT(S) GOING INTO DEBT  |
| <input type="checkbox"/> FIGHTS WITH PARENTS  | <input type="checkbox"/> BEING STEREOTYPED/DISCRIMINATED/HAVE BAD RUMORS SPREAD ABOUT YOU |
| <input type="checkbox"/> GETTING PRESSURE ABOUT HAVING SEX  | <input type="checkbox"/> DEATH OF A CLOSE FAMILY MEMBER OTHER THAN PARENT/GUARDIAN        |
| <input type="checkbox"/> CAUGHT CHEATING OR LYING REPEATEDLY  | <input type="checkbox"/> DEATH OF A BOY/GIRLFRIEND/CLOSE FRIEND                           |
| <input type="checkbox"/> GETTING A MAJOR ILLNESS/INJURY/CAR ACCIDENT                                  | <input type="checkbox"/> GETTING V.D.   |
| <input type="checkbox"/> BECOMING RELIGIOUS OR GIVING UP RELIGION                                     | <input type="checkbox"/> GETTING SOMEONE PREGNANT/GETTING PREGNANT                        |
| <input type="checkbox"/> REFERRAL TO THE PRINCIPAL'S OFFICE   | <input type="checkbox"/> TAKING TESTS   |
| <input type="checkbox"/> GETTING ACNE/WARTS   | <input type="checkbox"/> MOVING TO A DIFFERENT TOWN/SCHOOL/ MAKING NEW FRIENDS            |
| <input type="checkbox"/> TROUBLE GETTING A DATE WHEN IT WAS NOT A PROBLEM BEFORE                      | <input type="checkbox"/> GETTING AN AWARD, OFFICE, ETC.                                   |
| <input type="checkbox"/> PROBLEMS DEVELOPED WITH TEACHERS   | <input type="checkbox"/> MAKING A TEAM (DRILL, ATHLETIC, DEBATE)                          |
| <input type="checkbox"/> MAKING CAREER DECISIONS (COLLEGE, MAJORS, TRAINING, ETC.)                    | <input type="checkbox"/> GETTING BEAT UP BY PARENTS                                       |
| <input type="checkbox"/> STARTING TO GO TO WEEKEND PARTIES/ ROCK CONCERTS                             | <input type="checkbox"/> GETTING A NEW ADDITION TO THE FAMILY                             |
| <input type="checkbox"/> FIRST DAY OF SCHOOL  | <input type="checkbox"/> GOING TO THE DENTIST OR DOCTOR                                   |
| <input type="checkbox"/> GOING ON FIRST DATE/STARTING TO DATE   | <input type="checkbox"/> GOING TO JAIL/REFORM SCHOOL                                      |
| <input type="checkbox"/> DEATH OF A PARENT/GUARDIAN   | <input type="checkbox"/> STARTING TO USE DRUGS  |
| <input type="checkbox"/> NOT GETTING PROMOTED TO NEXT GRADE   | <input type="checkbox"/> GETTING BRACES   |
| <input type="checkbox"/> GETTING CAUGHT USING DRUGS   | <input type="checkbox"/> GOING ON A DIET  |
| <input type="checkbox"/> GETTING ATTACKED/RAPED/BEAT UP   | <input type="checkbox"/> LOSING OR GAINING WEIGHT   |
| <input type="checkbox"/> GETTING A TICKET OR OTHER MINOR PROBLEMS WITH LAW                            | <input type="checkbox"/> CHANGING EXERCISE HABITS   |
| <input type="checkbox"/> PARENTS GETTING A DIVORCE/SEPARATION   | <input type="checkbox"/> PRESSURE TO TAKE DRUGS   |
| <input type="checkbox"/> GETTING EXPELLED/SUSPENDED   | <input type="checkbox"/> MOVING OUT OF THE HOUSE  |
| <input type="checkbox"/> FAD PRESSURE   | <input type="checkbox"/> FALLING IN LOVE  |
| <input type="checkbox"/> BREAKING UP WITH BOY/GIRLFRIEND  | <input type="checkbox"/> GETTING A BAD HAIRCUT  |
| <input type="checkbox"/> GETTING MINOR ILLNESS (COLD, FLU, ETC.)                                      | <input type="checkbox"/> FAMILY MEMBER MOVING OUT   |
| <input type="checkbox"/> ARGUMENTS WITH PEERS/BROTHERS/ SISTERS                                       | <input type="checkbox"/> GETTING A BAD REPORT CARD  |
| <input type="checkbox"/> STARTING TO PERFORM (SPEECHES, PRESENTATIONS, MUSICAL OR DRAMA PERFORMANCES) | <input type="checkbox"/> GETTING GLASSES  |

OTHER STRESSFUL EVENTS (Please list):

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## BIOGRAPHICAL DATA

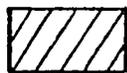
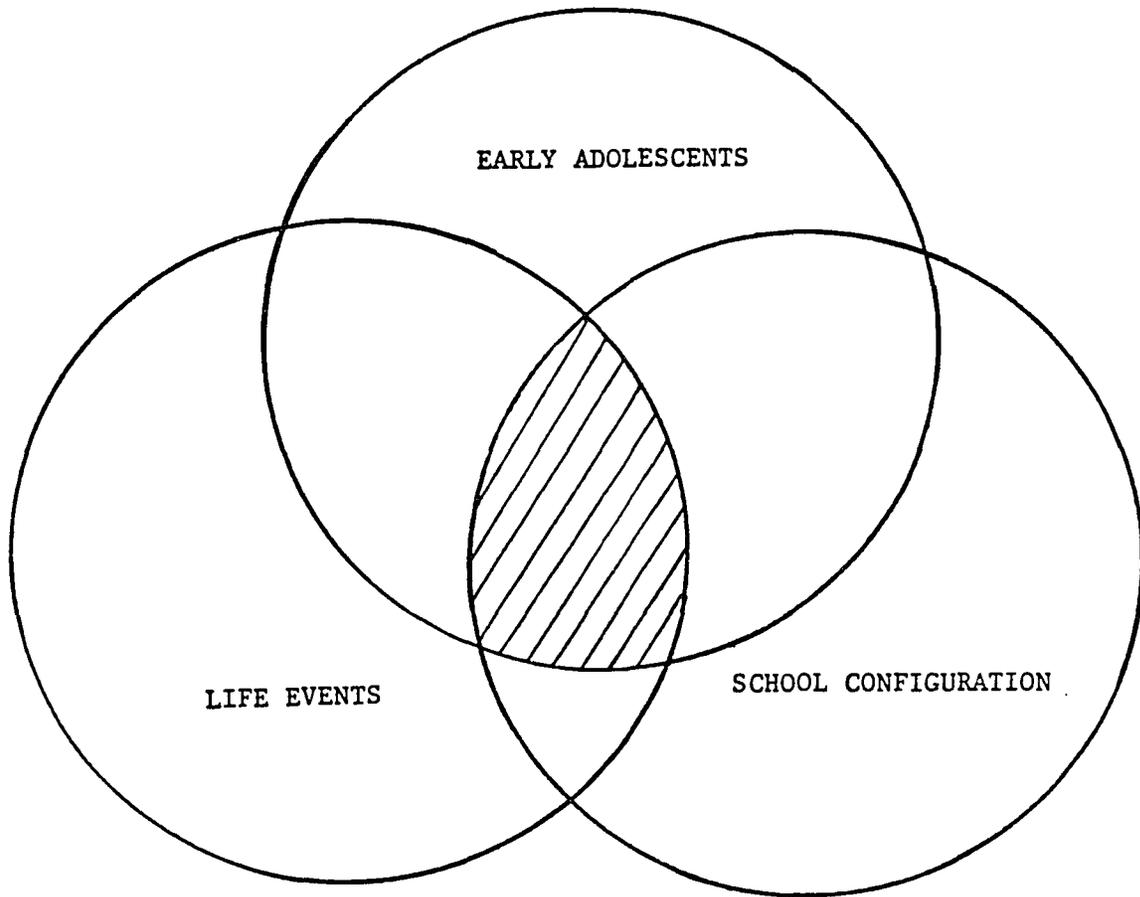
1. Sex          M   (1)          F   (2)
2. Date of Birth \_\_\_\_\_
3. Ethnic Origin:        \_\_\_\_\_ Anglo-Caucasian  
                              \_\_\_\_\_ Hispanic  
                              \_\_\_\_\_ Native American Indian  
                              \_\_\_\_\_ Black  
                              \_\_\_\_\_ Oriental/Polynesian  
                              \_\_\_\_\_ Other (specify) \_\_\_\_\_
4. How long have you lived in this city? \_\_\_\_\_
5. Did you attend 6th grade at this school?    \_\_\_ Yes    \_\_\_ No
6. Did you attend 7th grade at this school?    \_\_\_ Yes    \_\_\_ No

Stress is defined as: Physical, mental, or emotional tension. Anything that causes unpleasant and/or tense feelings of nervousness, feelings of being pressured, feelings of being irritated, upset or causing worry (Anspaugh 1983). An example would be feeling butterflies in your stomach before going to the dentist.

7. Compared with friends of your own age your present level of stress is: (circle the best answer)
- |               |                   |      |                    |                   |
|---------------|-------------------|------|--------------------|-------------------|
| 1             | 2                 | 3    | 4                  | 5                 |
| Much<br>Lower | Somewhat<br>Lower | Same | Somewhat<br>Higher | Extremely<br>High |

APPENDIX B

CONCEPTUAL FRAMEWORK OF STUDY



Domain dealt with in this study

APPENDIX C

PRINCIPAL APPROVAL FORM

August 18, 1986

Dear Principal:

We are interested in conducting a research project which involves a determination of preadolescent stressful life events experienced by eighth grade students. The school that you are a principal at has been chosen as a research site.

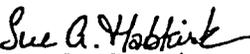
The research involved in this study is a concerted effort to determine the frequency of various stressful life events, and to determine whether your school has an effect upon increasing or reducing the number of stressful life event experiences.

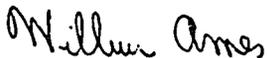
As you are aware, stress and increased numbers of stressful life event experiences have serious health consequences. The research involves the completion of a 30 minute anonymous questionnaire by eighth grade students. Upon completion of the study, a copy of the summarized results will be available at the district's main office. A copy of the research proposal has been made available at your office that explains details of the project.

Your signature will assist in bringing to light unexplored problem areas which can lead to better educational programs in the future. Please complete this authorization and return it in the enclosed stamped envelope by August 30, 1986.

Thank you for your cooperation in this important project.

Sincerely,

  
Sue A. Habkirk  
Principal Investigator  
University of Arizona

  
Wilbur Ames  
Acting Division Head  
Division of Teaching & Teacher Ed.  
University of Arizona

  
Donald C. Clark  
Research Director  
University of Arizona

I approve/disapprove (circle one) of the schools' participation in this important project.

Principal's Signature: \_\_\_\_\_

School: \_\_\_\_\_

Date: \_\_\_\_\_

APPENDIX D

FACULTY MEMBER APPROVAL FORM

August 25, 1986

Dear Faculty Member:

We are interested in conducting a research project which involves a determination of preadolescent stressful life events experienced by eighth grade students. Your school has been chosen as a research site.

The research involved in this study is a concerted effort to determine the frequency of various stressful life events, and to determine whether type of school configuration has an effect upon increasing or reducing the number of stressful life event experiences.

As you are aware, stress and increased numbers of stressful life event experiences have serious mental and physical health consequences. The research involves the completion of a 30 minute anonymous and optional questionnaire by eighth grade students. Upon completion of the study, a copy of the summarized results will be available at the district's main office. A copy of the research proposal has been made available at your school office that explains details of the project. Further, this study has the approval of Unified School Districts' Administration.

Your signature will assist in bringing to light unexplored problem areas which can lead to better educational programs in the future. Please complete this authorization and return it in the enclosed stamped envelope by August 30, 1986.

Thank you for your cooperation in this important project.

Sincerely,

*Sue A. Habkirk*  
Sue A. Habkirk  
Researcher  
University of Arizona

Principal

I agree this research project is important and will cooperate in the implementation by administering the questionnaire to my eighth grade students.

Faculty Member's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

APPENDIX E

PARENTAL APPROVAL FORM



THE UNIVERSITY OF ARIZONA  
TUCSON, ARIZONA 85721

COLLEGE OF EDUCATION  
DIVISION OF TEACHING AND TEACHER EDUCATION  
(602) 621-1602

September 15, 1986

Dear Parent:

We are interested in conducting a research project which involves a determination of preadolescent stressful life events experienced by eighth grade students. The school your child attends has been chosen as a research site.

The research involved in this study is a concerted effort to determine the frequency of various stressful life events and to determine whether the school your child attends has an effect upon increasing or reducing the number of stressful life event experiences.

As you are aware, stress and increased numbers of stressful life event experiences have serious mental and physical health consequences. The research involves the completion of a 30 minute anonymous questionnaire by eighth grade students. Upon completion of the study, a copy of the summarized results will be available at your child's school office. Further, a copy of the research proposal has been made available at your child's school office that explains details of the accepted project.

Your signature will assist in bringing to light unexplored problem areas which can lead to better educational programs in the future. Please complete this authorization and have it returned by your son or daughter to their Social Studies Teacher by September 19, 1986.

Thank you for your cooperation in this important project.

Sincerely,

*Sue A. Habkirk*

Sue A. Habkirk  
Researcher  
University of Arizona

Principal

I approve/disapprove (circle one) of my son's/daughter's (circle one) participation in this important project.

Parent/Guardian Signature: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_  
Child's Name: \_\_\_\_\_ mo. day yr.

APPENDIX F  
LIFE EVENT RESPONSE

## LIFE EVENT RESPONSE

	<u>Yes (%)</u>	<u>No (%)</u>
1. Graduation from former school	12.4	87.6
2. Pet dies	34.5	65.5
3. Fights with parents	60.1	39.9
4. Getting pressure about having sex	15.9	84.1
5. Caught cheating or lying repeatedly	17.0	83.0
6. Getting a major illness/injury/car accident	15.9	84.1
7. Becoming religious or giving up religion	14.3	85.7
8. Referral to the principal's office	20.0	80.0
9. Getting acne/warts	41.6	58.4
10. Trouble getting a date when it was not a problem before	9.3	90.7
11. Problems developed with teachers	27.6	72.4
12. Making career decisions (college, majors, training, etc.)	29.3	70.7
13. Starting to go to weekend parties/rock concerts	36.1	63.9
14. First day of school	68.7	31.3
15. Going on first date/starting to date	13.9	86.1
16. Death of a parent/guardian	5.0	95.0
17. Not getting promoted to the next grade	4.4	95.6
18. Getting caught using drugs	4.7	95.3
19. Getting attacked/raped/beat up	5.9	91.1
20. Getting a ticket or other minor problems with law	7.2	92.8
21. Parents getting a divorce/separation	10.9	89.1
22. Getting expelled/suspended	5.4	94.6
23. Fad pressure	30.2	69.8
24. Breaking up with boy/girlfriend	36.6	63.4
25. Getting minor illness (cold, flu, etc.)	58.7	41.3
26. Arguments with peers/brothers/sisters	74.4	25.6
27. Starting to perform (speeches, presentations, musical or drama performances)	42.4	57.6
28. Parent(s) unemployed or fired from job	12.3	87.7
29. Parent(s) going into debt	13.3	86.7
30. Being stereotyped/discriminated/having bad rumors spread about you	27.2	72.8
31. Death of a close family member other than parent/guardian	23.3	76.7
32. Death of a boy/girlfriend/close friend	5.6	94.4
33. Getting V.D.	1.7	98.3
34. Getting someone pregnant/getting pregnant	3.3	96.7
35. Taking tests	75.9	24.1
36. Moving to a different town/school/making new friends	17.8	82.1

37.	Getting an award, office, etc.	26.5	73.5
38.	Making a team (drill, athletic, debate)	31.1	68.9
39.	Getting beat up by parents	2.6	97.4
40.	Getting a new addition to the family	11.4	88.6
41.	Going to the dentist or doctor	57.3	42.7
42.	Going to jail/reform school	2.2	97.8
43.	Starting to use drugs	6.1	93.9
44.	Getting braces	13.5	86.5
45.	Going on a diet	22.8	77.2
46.	Losing or gaining weight	52.1	47.9
47.	Changing exercise habits	27.0	73.0
48.	Pressure to take drugs	11.6	88.4
49.	Moving out of the house	5.6	94.4
50.	Falling in love	50.8	49.2
51.	Getting a bad haircut	26.6	73.4
52.	Family member moving out	13.3	86.7
53.	Getting a bad report card	31.3	68.7
54.	Getting glasses	12.1	87.9
55.	Other stressful events	28.2	71.9

APPENDIX G

SCHOOL PERCENTAGE BY ITEM FROM  
PREADOLESCENT LIFE EVENT INVENTORY

SCHOOL PERCENTAGE BY ITEM FROM  
PREADOLESCENT LIFE EVENT INVENTORY

<u>Item</u>	<u>7-8</u>		<u>6-7-8</u>		<u>Total</u>	
	<u>Percent</u>	<u>(n)</u>	<u>Percent</u>	<u>(n)</u>	<u>Percent</u>	<u>(n)</u>
1. Graduation from former school	16.3	86	5.8	18	12.4	104
2. Pet dies	33.5	177	36.4	112	34.5	289
3. Fights with parents	56.7	300	65.9	203	60.1	503
4. Getting pressure about having sex	13.4	71	20.1	62	15.9	133
5. Caught cheating or lying repeatedly	14.9	79	20.5	63	17.0	142
6. Getting a major illness/injury/car accident	16.1	85	15.6	48	15.9	133
7. Becoming religious or giving up religion	11.3	60	19.5	60	14.3	120
8. Referral to the principal's office	18.5	98	22.4	69	20.0	167
9. Getting acne/warts	35.7	189	51.6	159	41.6	348
10. Trouble getting a date when it was not a problem before	8.3	44	11.0	34	9.3	78
11. Problems developed with teachers	27.2	144	28.2	87	27.6	231
12. Making career decisions (college, majors, training, etc.)	31.2	165	26.0	80	29.3	245
13. Starting to go to weekend parties/rock concerts	36.1	191	36.0	111	36.1	302
14. First day of school	70.9	375	64.9	200	68.7	575
15. Going on first date/starting to date	12.5	66	16.2	50	13.9	116
16. Death of a parent/guardian	5.5	29	4.2	13	5.0	42
17. Not getting promoted to next grade	4.5	24	4.2	13	4.4	37
18. Getting caught using drugs	4.0	21	5.8	18	4.7	39
19. Getting attacked/raped/beat up	4.9	26	7.5	23	5.9	49
20. Getting a ticket or other minor problems with law	8.1	43	5.5	17	7.2	60
21. Parents getting a divorce/separation	11.3	60	10.1	31	10.9	91
22. Getting expelled/suspended	5.9	31	4.5	14	5.4	45
23. Fad pressure	29.5	156	31.5	97	30.2	253
24. Breaking up with boy/girlfriend	34.8	184	39.6	122	36.6	306
25. Getting minor illness (cold, flu, etc.)	56.7	300	62.0	191	58.7	491
26. Arguments with peers/brothers/sisters	71.3	377	79.9	246	74.4	623
27. Starting to perform (speeches, presentations, musical or drama performances)	39.9	211	46.8	144	42.4	355
28. Parent(s) unemployed or fired from job	11.7	62	13.3	41	12.3	103
29. Parent(s) going into debt	11.3	60	16.6	51	13.3	111
30. Being stereotyped/discriminated/having bad rumors spread about you	26.7	141	28.2	87	27.2	228
31. Death of a close family member other than parent/guardian	21.1	117	25.3	78	23.3	195
32. Death of a boy/girlfriend/close friend	5.1	27	6.5	20	5.6	47
33. Getting V.D.	1.1	6	2.6	8	1.7	14
34. Getting someone pregnant/getting pregnant	3.0	16	3.9	12	3.3	28
35. Taking tests	75.0	397	77.3	238	75.9	635
36. Moving to a different town/school/making new friends	20.2	107	13.6	42	17.8	149
37. Getting an award, office, etc.	23.3	123	32.1	99	26.5	222
38. Making a team (drill, athletic, debate)	28.5	151	35.4	109	31.1	260
39. Getting beat up by parents	2.3	12	3.2	10	2.6	22

<u>Item</u>	<u>7-8</u>		<u>6-7-8</u>		<u>Total</u>	
	<u>Percent</u>	<u>(n)</u>	<u>Percent</u>	<u>(n)</u>	<u>Percent</u>	<u>(n)</u>
40. Getting a new addition to the family	12.5	66	9.4	29	11.4	95
41. Going to the dentist or doctor	55.8	295	60.1	185	57.3	480
42. Going to jail/reform school	1.9	10	2.6	8	2.2	18
43. Starting to use drugs	5.1	27	7.8	24	6.1	51
44. Getting braces	14.2	75	12.3	38	13.5	113
45. Going on a diet	21.0	111	26.0	80	22.8	191
46. Losing or gaining weight	53.7	284	49.4	152	52.1	436
47. Changing exercise habits	26.3	139	28.2	87	27.0	226
48. Pressure to take drugs	8.7	46	16.6	51	11.6	97
49. Moving out of the house	5.9	31	5.2	16	5.6	47
50. Falling in love	45.7	242	59.4	183	50.8	425
51. Getting a bad haircut	24.8	131	29.9	92	26.6	233
52. Family member moving out	13.2	70	13.3	41	13.3	111
53. Getting a bad report card	30.2	160	33.1	102	31.3	262
54. Getting glasses	12.9	68	10.7	33	12.1	101
55. *Other stressful events	74.9	86	66.9	66	18.2	152
	5.5	29	6.5	20	5.9	49
	2.1	11	3.2	10	2.5	21
	.9	5	1.6	5	1.2	10
	.2	2	.1	1	.4	3

\*Categorized by number of other events

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