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ABSTRACT

The Developmental Inventory of Sources of Stress (DISS) is an instructional tool designed to assist counselors, advisors, and faculty in reducing stress among college students (specifically, high risk college freshmen, although it can be utilized effectively with any college student population). The instrument focuses on sources of stress over which students can exert control, as opposed to life experiences (e.g., death of a parent) over which they have no control. The DISS consists of five scales: (1) Time Management; (2) Physical Stressors; (3) Chemical Stressors; (4) Academic; and (5) Interaction. Results of a test-retest study of the test's reliability among freshmen at a large public southeastern university and group means for freshmen at the University of Georgia are presented. There was considerable interaction among variables serving as sources of stress. Efficient time management may have a large impact on life-style and academic performance. A copy of the DISS is attached. (SLD)

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Sources of Stress

1

A Developmental Inventory of Sources of Stress

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Running head: SOURCES OF STRESS

M012 352

Sources of Stress

2

Abstract

The Developmental Inventory of Sources of Stress (DISS) is an instructional tool designed to assist counselors in reducing stress among college students. The instrument focuses on sources of stress over which students can exert control, as opposed to life experiences (e.g. death of a parent) over which they have no control. The DISS consists of five scales, as follows: Time Management (T), Physical Stressors (P), Chemical Stressors (C), Academic (A), and Interaction (I).

Sources of Stress

3

The Developmental Inventory of Sources of Stress (DISS) was created as an instructional tool to assist counselors, advisors, and faculty working with high risk freshmen. However, it can be utilized effectively with any college student population. One purpose of the instrument is to help students understand those sources of stress over which they can exert control. After assessing the areas which are stressful to the student, the counselor can provide appropriate strategies for reducing anxiety. In some cases the problem may be as simple as lack of adequate sleep or unhealthy dietary habits. Other students may need assistance in learning how to manage their time, coping with academic stress, or developing more supportive relationships with their peers. The Developmental Inventory of Sources of Stress provides direction for further counseling.

Unlike life experience-type inventories (e.g. Holmes & Rahe, 1967), the DISS does not deal with sources of stress over which the student has no control, e.g. divorce of parents, death of a family member. One function of the DISS is to help students eliminate some sources of stress, rather than merely adapt to them. Numerous studies link stress/anxiety to locus of control and/or attribution of

Sources of Stress

4

success or failure. (Allen, Giat, & Cherney, 1974; Arkin, Detchon, & Maruyama, 1982; Arkin & Maruyama, 1979; Arkin, Kolditz, & Kolditz, 1983; Bryant & Trockel, 1976; Deardorff, Kendall, Finch, & Sitarz, 1977; Manuck, Hinnichsen, & Ross, 1975; Gilbert, 1976; Helms & Giorgis, 1980; Nowicki, 1978; Schill, Ramanaiah, & Toves, 1982; Strassberg, 1973.) It is critical that students accept responsibility for how their own attitudes and behaviors create stress in their lives.

The Developmental Inventory of Sources of Stress combines features from two different models for stress management programs for college students. The eight components of the model developed by Stevens and Pfost (1984) are assessment, stress information, relaxation training, cognitive restructuring, problem solving, time management, nutritional counseling, and exercise planning. Archer's (1986) model includes regular relaxation, situational relaxation, rational beliefs, positive self-statements, assertiveness, supportive relationships, time management, aerobic exercise, and limited use of sugar/caffeine. The DISS consists of the following scales: Time Management (T), Physical Stressors (P), Chemical Stressors (C), Academic (A), and Interaction (I). Each

Sources of Stress

5

scale was designed to measure the frequency of stress-producing attitudes and behaviors. In some cases sources of stress which may be perceived as important by the counselor, e.g. consumption of caffeinated beverages, may not be of concern to the student. The student must determine his or her own priorities. The DISS provides information regarding sources of stress; the student, with the help of the counselor, may then establish goals and objectives for reducing stress.

Time Management Scale (T)

Time management is a factor included in both the model developed by Stevens and Pfof (1984) and that of Archer (1986). In a study of sources of stress among undergraduates at a large southeastern university, Archer and Lamm (1985) reported that 21% of the respondents to an open-ended questionnaire indicated "too many demands, not enough time, deadlines" as their first or second response to situations or conditions they found to be most stressful academically. Nine percent of the first or second responses were categorized as "procrastination - getting behind, being unprepared." When asked about personal sources of stress,

Sources of Stress

6

9% of the respondents listed "not enough free time." The Time Management Scale lends itself readily to a discussion of time management and/or developing a study schedule.

Physical Stressors Scale (P)

Physical lifestyle choices which are related to stress include eating habits, sleeping patterns, and exercise (Cesari, 1986; Hicks & Rozette, 1986; Kagan & Squires, 1984; Kessler, 1974; Lerner, 1985; McCanne, 1985; Mines & Merrill, 1987.) It is not unusual for college students to skip meals and/or binge, to stay up late and then oversleep the next morning, or to give up regular exercise. In some cases these patterns are more closely related to time management than to actual preferences in lifestyle. When reviewing the results of the Physical Stressors Scale with the student the counselor can elicit further information in order to help the student adjust to a more salubrious lifestyle.

Chemical Stressors Scale

Stressful situations are often cited by students as a reason for consuming alcohol and other drugs (Berkowitz & Perkins, 1985b; Brooks, Walfish, Stenmark, & Canger, 1981;

Sources of Stress

7

Fago & Sedlacek, 1975; Hamilton, 1985; Hanson & Engs, 1986; Higgins & Marlatt, 1975; Hill & Bugen, 1979; Horowitz & Sedlacek, 1973; Igra & Moos, 1979; Jessor, Carmon, & Grossman, 1968; Kraft, 1971; Kuder & Madson, 1976; Lundin & Sawyer, 1965; Schwarz, Burkhart, & Green, 1978; Smart, 1968; Speer, 1987.) However, alcohol consumption can also create additional stress due to low class attendance and/or impaired academic performance (Berkowitz & Perkins, 1985a; Engs, 1977; Hanson & Engs, 1986.) The purpose of inclusion of alcohol-related items on the DISS is to help students recognize alcohol abuse as a potential source of stress rather than a solution, and perhaps identify alternative solutions (Hamilton, 1985; Hetherington & Keene, 1985; Zuroff & Schwarz, 1978.)

Caffeine consumption, generally in the form of tea, coffee, and soft drinks, but also in over-the-counter medications developed for a wide variety of functions including weight loss, staying alert/awake, and relief of pre-menstrual cramps, can also serve as a source of stress rather than a means of reducing it (Bridges-Webb & Grounds, 1976; Greden, 1974; Landis, 1958; Vener & Krupka, 1982). Often students take little notice of their caffeine intake.

Sources of Stress

8

The Chemical Stressors Scale is designed to help promote student awareness of substance use and abuse.

Academic Scale (A)

In their study of personal stressors Archer and Lamnin (1985) reported among their results that 52% of their respondents listed "tests and finals - performance anxiety and scheduling" as a first or second response to sources of academic stress, 28% indicated "grades and competition," 18% "professors and class environment," 15% "career and future success," and 3% "speaking in class." Under personal stressors 29% of the responding students reported "parental conflicts and expectations," 11% indicated "personal achievement - goal setting," and 9% listed "future and career plans and success identity" issues. These findings are consistent with those of other studies examining variables related to academic performance and stress (Alpert & Haber, 1960; Hart & Keller, 1980; Mitchell & Piatrowska, 1974; Pervin, 1967; Peters, 1978; Van Atta, Lipson, & Glad, 1977; Weintraub, 1971; Williams, 1971.) The Academic Scale of the DISS does not focus on test anxiety, since there are several instruments already available (e.g. Mandler &

Sources of Stress

9

Sarason, 1952; Sarason, 1957, 1981; Spielberger, 1962).
Instead, the Academic Scale assists in the identification of other variables which may contribute to academic stress. There are then a wide variety of treatment approaches that may be utilized for combatting academic stress (Allen, 1971; Bednar & Weinberg, 1970; Decker & Russell, 1981; Decker, Williams, & Hall, 1982; Dendato & Diener, 1986; Greiner & Karoly, 1976; Holroyd, 1976; Leibert & Morris, 1967; Lent & Russell, 1978; Meichenbaum, 1972; Payne & Friedman, 1986; Russell & Gribble, 1982; Williams, Decker & Libassi, 1983.)

Interaction Scale (I)

In their research entitled "An Investigation of Personal and Academic Stressors on College Campuses," Archer and Lammie (1985) reported the following categories of personal stressors among those listed as a first or second response: intimate relationships, 37%; finances, 27%; interpersonal conflicts with friends and others, 13%; judgment and acceptance by peers, peer pressure, 11%; roommate conflicts, 11%; approaching and meeting other students, 9%. In another study, Van Atta, Lipson, & Glad (1977) report, "Respondents attributed psychological

Sources of Stress

10

discomfort to an interaction between variables that pertain to social alienation (conflict with society), specific institutional stresses (demands of school), and supportive peer and heterosexual relationships (not enough friends, weakness or conflict with spouse or mate." Further research is needed to examine the relationships between social anxiety, assertiveness, and other variables such as depression (Gotlib, 1984; Nezu, Nezu, & Nezu, 1986).

The purpose of the Interaction Scale (I) is to determine sources of concern as a foundation for determining the need for training in assertiveness, listening and other communication skills, cognitive restructuring, and relaxation.

Psychometric Data

A test-retest study of reliability was conducted among first quarter freshmen enrolled in a developmental studies counseling course at a large public southeastern university. The instrument was administered during the third and eighth weeks of the quarter. Reliability coefficients for the five scales are presented in Table 1.

Insert Table 1 approximately here

Conclusions regarding the reliability of the scales should take into consideration the numerous intervening variables which would impact freshmen perceptions of sources of stress between the beginning and end of their first quarter at the university. When measuring less stable characteristics such as attitudes, inconsistency of results over times does not necessarily indicate measurement error. It's possible that the initial administration may even contribute to change in the characteristic to be studied. (Selltiz, Wrightsman, & Cook, 1976).

Group means for Developmental Studies freshmen at the University of Georgia are provided in Table 2.

Insert Table 2 approximately here

Sources of Stress

12

Students are enrolled in Developmental Studies because they failed to meet the institution's minimum standards for admission. They must earn B's to exit the program at the end of their first quarter. This information should be taken into consideration when using this data for normative purposes.

Administration

It is suggested that the DISS be administered to freshmen after their first quarter/semester is already underway, once they have had an opportunity to adjust to the new environment, but not immediately before final exams, which then become an overriding factor in any exploration of sources of stress.

Each scale of the DISS may be administered independently, or the items may be arranged randomly into one longer instrument. For instructional purposes the authors have found it useful to administer the scales as found in the Appendix. The time management scale is presented first because it is least likely to be perceived as threatening by students.

Sources of Stress

13

Scoring

Responses to each item may range from 1 to 5. For most items a rating of five indicates lower stress. However, scores on the following items should be reversed: 3, 8, 16, 18, 19, 20, 28, 41, 47, 54, 59, 60, 61.

Raw scores for each scale can be determined by adding the responses, with weights for the items listed in the preceding paragraph reversed. Adjusted scores are achieved by dividing the raw score by the number of items on the scale. Although comparing raw or adjusted individual scores to group means may be useful in identifying those students who may be experiencing greater levels of stress, when working with the individual student responses to specific items may be more helpful in alleviating or adapting to sources of stress.

Implications

As is evidenced in the literature, there is considerable interaction among variables serving as sources of stress. Efficient time management may have a considerable impact on lifestyle and academic performance.

Sources of Stress

14

Social anxiety is often presented as a reason for consuming alcoholic beverages. Chemical dependence on caffeine disrupts sleep patterns. Multifaceted individualized treatment programs for stress reduction for college students may be the most effective in enhancing academic achievement (Allen, 1971; Bednar & Weinberg, 1970; Decker & Russell, 1981; Decker, Williams, & Hall, 1982; Holroyd, 1976; Lent & Russell, 1978; Williams, Decker, & Libassi, 1983). Stress reduction sessions could include any or all of the following topics depending upon the needs of the individual: goal setting, decision-making, career exploration, financial planning and/or information about financial aid, time management, reading and study skills, learning styles, health and wellness issues (e.g. diet, drugs, contraception), personality type (Myers & McCaulley, 1985) as it relates to interpersonal style, assertiveness, listening, and other communication skills, academic expectations, parental relations, and relaxation. Treatment strategies could include everything from discussion groups or informational meetings to cognitive restructuring, role playing, or systematic desensitization. There are many sources of stress for college and university students.

Sources of Stress

15

Similarly, there are numerous approaches to reducing stress. Assessment is critical in determining appropriate stress reduction techniques for the individual student.

Table 1

Division of Developmental Studies

Stress Inventory

Test - Retest Reliability Coefficients

Time Management Scale	$r = .62099$
Physical Stressors Scale	$r = .56430$
Chemical Stressors Scale	$r = .61266$
Academic Scale	$r = .60804$
Interaction Scale	$r = .62682$

N=111

Coefficient Alpha

Time Management Scale	$r = .74540$
Physical Stressors Scale	$r = .713371$
Chemical Stressors Scale	$r = .54946$
Academic Scale	$r = .71215$
Interaction Scale	$r = .79369$

N=80

Sources of Stress

17

TABLE 2

MEANS AND STANDARD DEVIATIONS

Stress Inventory

RAW SCORES	1986-1987					1987-1988				
	N	MEAN	STD	MIN	MAX	N	MEAN	STD	MIN	MAX
Time	123	47.20	8.76	23	71	81	46.17	8.52	28	67
Physical	123	33.76	5.78	18	49	81	35.74	5.77	24	48
Chemical	123	38.63	4.57	21	47	81	39.86	4.56	26	50
Academic	123	49.36	6.86	31	67	81	50.46	7.44	35	69
Interaction	120	40.24	6.05	22	54	80	50.70	7.61	30	72
Total Stress Score	123	208.20	22.27	145	274	80	222.23	25.42	165	281
ADJUSTED SCORES										
Time	123	3.15	0.58	1.53	4.73	81	3.08	0.57	1.87	4.47
Physical	123	3.38	0.58	1.80	4.90	81	3.57	0.58	2.40	4.80
Academic	123	3.86	0.46	2.10	4.70	81	3.99	0.46	2.60	5.00
Chemical	123	3.29	0.46	2.07	4.47	81	3.36	0.50	2.33	4.60
Interaction	120	2.68	0.40	1.47	3.60	80	3.38	0.51	2.00	4.80
Total Stress Score	123	3.20	0.34	2.23	4.21	80	3.42	0.39	2.54	4.32

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Developmental Inventory of Sources of Stress

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Time Management Scale (T)

Directions: For each item on this scale please fill in the appropriate blank on your answer sheet according to the following scale:

- 1 or A = Every day or almost every day
- 2 or B = Three or more days per week
- 3 or C = One or two days per week
- 4 or D = Three or fewer days a month
- 5 or E = Never or almost never

1. I do not seem to have enough time to do everything that needs to be done.
2. I have too much homework.
3. I spend some time engaged in one of my favorite hobbies.
4. I do not have time to get the rest I need.
5. I am late for classes and/or appointments.
6. I skip meals because I do not have time to eat.
7. I do not have enough time to prepare sufficiently for quizzes and tests.
8. I try to take some time to relax.
9. I get anxious when I realize I do not have time to get my work done.
10. I feel like I am hurrying all the time.
11. I just feel too overwhelmed to go on.
12. I wish I had more time to just be by myself.
13. I wish I had more time to spend having fun with my friends.
14. I spend too much time watching television.
15. I need more time to think.

Physical Stressors Scale (P)

Directions: For each item on this scale please fill in the appropriate blank on your answer sheet according to the following scale:

- 1 or A - Every day or almost every day
- 2 or B - Three or more days per week
- 3 or C - One or two days per week
- 4 or D - Three or fewer days a month
- 5 or E - Never or almost never

- 16. I eat at least three meals each day.
- 17. I skip breakfast.
- 18. My daily diet includes foods from each of the four basic food groups: dairy products, meats, grains, and fruits and vegetables.
- 19. I engage in continuous exercise for 30 minutes or more (e.g. walking briskly, jogging, biking, swimming, aerobics, racquetball).
- 20. I get at least eight hours of sleep per night.
- 21. I get fewer than six hours of sleep at night.
- 22. My weight fluctuates significantly (by more than five pounds).
- 23. When I have gained too much weight I lose it again by going on "crash" diets, i.e. skipping meals, not eating balanced meals.
- 24. I take a laxative or force myself to vomit after eating too much.
- 25. I have trouble physically relaxing my body.

Chemical Stressors Scale (C)

Directions: For each item on this scale please fill in the appropriate blank on your answer sheet according to the following scale:

- 1 or A = Every day or almost every day
- 2 or B = Three or more days per week
- 3 or C = One or two days per week
- 4 or D = Three or fewer days a month
- 5 or E = Never or almost never

- 26. I drink 24 ounces or more of caffeinated beverages (e.g. two cans of cola, three cups of coffee or tea) per day.
- 27. I smoke a half pack or more of cigarettes.
- 28. I take a daily multiple vitamin supplement.
- 29. I drink caffeinated beverages to help keep me awake.
- 30. In order to stay awake I take one of the chemical aids available over-the-counter, e.g. No-Doz.
- 31. I take medication to help me sleep.
- 32. I take an appetite suppressant to help me lose weight.
- 33. I eat a lot of "sweets", e.g. candy, cookies, doughnuts, soft drinks, (excluding sugar free).
- 34. I drink alcoholic beverages to help me relax.
- 35. I consume alcoholic beverages until I "pass out".

Academic Scale (A)

Directions: For each item on this scale please fill in the appropriate blank on your answer sheet according to the following scale:

- 1 or A = Always or almost always
- 2 or B = Often
- 3 or C = Sometimes
- 4 or D = Seldom
- 5 or E = Never or almost never

- 36. I do not feel that I really understand what my teacher is trying to explain.
- 37. I can read in a textbook for more than an hour and not remember anything I read.
- 38. My friends and classmates seem smarter than me.
- 39. I am afraid to ask questions in class.
- 40. My classes are too hard.
- 41. I like to study with my friends.
- 42. I do not know what I want to major in.
- 43. I "freeze" on tests.
- 44. No matter how hard or long I study, I seem to study the wrong things for the test.
- 45. I get nervous just knowing there is a test coming up.
- 46. I cannot take lecture notes fast enough to keep up with the professor.
- 47. My grades do not matter as long as I know I have done my best.
- 48. I worry that I will not be able to pursue my career goals if my grades are not high enough.
- 49. I do not think I can attain the academic goals my parents have set for me.
- 50. When I am not doing well in school I tend to just give up.

Interaction Scale (I)

Directions: For each item on this scale please fill in the appropriate blank on your answer sheet according to the following scale:

- 1 or A = Always or almost always
- 2 or B = Often
- 3 or C = Sometimes
- 4 or D = Seldom
- 5 or E = Never or almost never

- 51. I am nervous about meeting new people.
- 52. I have difficulty expressing myself in front of large groups of people.
- 53. I agree to do things I don't really want to do.
- 54. If I don't like something, I say so.
- 55. I get embarrassed when someone pays me a compliment.
- 56. I have trouble saying "no" to people.
- 57. I am not very good at accepting criticism.
- 58. I feel completely tongue-tied.
- 59. If I am angry at someone, I tell him/her why.
- 60. I feel comfortable telling people what I like about them.
- 61. I feel comfortable telling people what I dislike about their behavior.
- 62. I am not very good at remembering people's names.
- 63. If I am angry or upset, I prefer not to talk about it.
- 64. My feelings are easily hurt by other people.
- 65. There isn't anyone I can talk to about my problems.