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Statistical Drug Abuse and Adolescents in the U.S.A.

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Introduction

Faced with the threat of death and diseases, the number of teenagers who have been experimenting with alcohol and marijuana have declined according to the current U.S. Department of Health and Human Services study. However, an increased number of teenagers are using Cocaine. Cocaine was once an exotic and expensive drug that is becoming more available due to lower prices. Cocaine and other drugs are not harmless recreational drugs; they are poisonous to the human body. A theoretical assumption that we call the "compliance model" which includes most of the campaigning efforts are still ignored by many of our youngsters. Many of the adolescents have a tendency to think that the "multi-media compliance model" inadequately oversimplifies the communication process. In return, a large number of the adolescents remain naive and simplistic thinkers.

The "basic theoretical model" includes two stages in the process of behavior change: motivational and behavioral management presenting ways to avoid consuming, purchasing and selling harmful drugs. Symptoms common to all narcotics and the human body effects will be included in the teaching strategies. Meanwhile, the students will do studies of statistical teenage drug abuse: interpreting data in frequency distribution tables and graphs.

Self awareness is to know one's self and others, to make meaningful futuristic decisions and act on them. Probability: Students will be comparing two numbers (ratio) and problem solving techniques with percentages of adolescents who have self-esteem and those lacking self-confidence.

The Problem

The teenage students will learn about narcotics, abuse, addiction, statistics, the threat of diseases, death; and, how to program themselves against using drugs abusively.

Alcohol, nicotine and marijuana smoking research have shown a similar decline in daily use: shown from 11% of all seniors in 1978 to 7% in 1979 and 5% in 1984. Meanwhile, there is a more threatening narcotics being used by teenagers; it is cocaine. Cocaine derivative can presently be purchased in Southern California for $10.00 to $25.00. In the Northeast states, 11% of the students admitted that they had used cocaine; the states in the West 9%; the states in the South-4%; the North Central states 2%. The figures are alarming, because the addictive quality of cocaine has been laboratory tested with rats. The laboratory tests have found

that rats given access to unlimited quantities of cocaine will eat the substance to the exclusion of everything else until they die.

The causes of drug abuse among teenagers are disturbing, because studies reveal that the adolescents are seeking where do they fit in their society. Therefore, when adolescents have difficulty meeting society's demands and they have their own internal demands to confront the result can be extreme anxiety and a feeling of powerlessness; therefore, the need to relieve these tensions can result in drug experimentation. The adolescents are given a temporary "high feeling," an exaggerated sense of competence and power.

Preventive Procedures

The students will be given information that includes objective information about all types of drugs and their effects on the body. The intervention will include assistance and support to adolescents during critical periods of their lives through counseling, the use of hotlines and the like.

The alternative program will include promoting confidence, selfreliance, challenging experiences of success in school, restoration projects, volunteer services and helping such causes as environment preservation in the community.

An Educational Setting

Group discussions and role playing techniques will be utilized to help the students improve their ability to cope and make decisions. Clarifying values and improving problem solving skills within a structured setting in the classroom; for example, the teacher will point out the type of data that will be used, and situations where the mode/range of a set of data is utilized; the students will design frequency tables, organize the data, use stem-and-leaf displays. The synonyms for the various drugs will be inclusive and problem solving within the "classroom world" for the "outside world."

Narcotics and the Effects

Marijuana

Symptoms: Sleepiness, Wandering mind, Enlarged eye pupils, Lack of Coordination, Craving for sweets, Increased appetite
Look for: Strong odor of burnt leaves, Small seeds in pocket lining, Cigarette paper, Discolored fingers
Dangers: Inducement to take stronger narcotics.
Cough Medicine with Codeine and Opium
Symptoms: Drunk appearance, Lack of Coordination, Confusion, Excessive itching
Look for: Empty bottles of cough medicine
Dangers: Causes addiction
Heroin, Morphine, Codeine
Symptoms: Stupor/Drowsiness, Needle marks in body, Watery eyes, Loss of appetite, Blood stain on shirt sleeve, Running nose

Look for: Needle or hypodermic syringe, Cotton, Tourniquet-string, Rope, Belt, Burnt bottle, Caps or spoons, Glassine envelopes

Dangers: Death from overdose, Mental deterioration, Destruction of brain and liver, Hepatitis, Embolisms

Glue Sniffing

Symptoms: Violence, Drunk appearance, Dreamy of blank expression

Look for: Tubes of glue, Glue smears, Large paper bags or handkerchiefs

Dangers: Lung/Brain/Liver damage, Death through suffocation or choking, Anemia

Barbiturates

Symptoms: Drowsiness, Stupor, Dullness, Slurred speech, Drunk appearance, Vomiting

Look for: Pills of varying colors

Dangers: Death from overdose, or causes addiction, convulsions and death as a result of withdrawal

Amphetamines

Symptoms: Aggressive behavior, Giggling, Silliness, Rapid speech, Confused thinking, No appetite, Extreme fatigue, Dry mouth, Shakiness

Look for: Jars of pills of varying colors, Chain smoking

Dangers: Death from overdose, Hallucinations. Methamphetamines sometimes cause temporary psychosis

LSD, MDT, STP

Symptoms: Severe hallucinations, Peelings of detachment, Incoherent speech, Cold hands and feet, Vomiting, Laughing and crying

Look for: Cube sugar with discoloration in center, Strong body odor, Small tube of liquid

Dangers: Suicidal tendencies. Unpredictable behavior, Chronic exposure causes brain damage. LSD causes chromosomal breakdown

The students will study the various drugs and the "street name synonyms". For example: Heroin (Horse, Snow, Jay Powder and the like). Morphine (White Stuff, Miss Emma and the like). Marijuana (Pot, Grass, Locoweed, Mary Jane, Hashish, Tea, Gage, Reefers and the like). LSD (Acid, Sugar, Big D, Cubes, Trips and the like). Amphetamines (Bennies, Co-Pilots, Wake-ups, Lid Poppers and the like). Barbiturates (Barks, Blue Devils, Candy, Yellow Jackets, Peanuts and the like).

I! Me! We! Us! They . . .

Brainstorming : I am in charge of my life. I will decide whether I will self-direct or let others direct my life. Summary Self determination isn't easy. It requires a great deal of personal thought and work but the rewards for self-esteem are great.

Brainstorming : Knowing how I got where I am today can be the key to knowing where I will be tomorrow. (The students will write plays, songs and novels in sub groups.) Summary Self truth is that I alone am the determiner of my truth. Self-determination and to know thy self is my final responsibility.

Brainstorming : Will Power is the sum total of my life competency. It is a measurement of my personal power, and how I use that power to get what I want out of my life. (The students will examine some negative thoughts that enter into individuals' lives.)

The "Inner Saboteurs" are negative thoughts that can make one's self feel uncomfortable. Examples as follows:

1) I tend to go along with others' views; although, I don't agree.

2) I often feel embarrassed; although, I haven't done anything wrong.

3) It's more important to make a living than to find work that I enjoy.

4) It seems as if I'm always explaining myself to others.

5) I don't think very many people like me.

6) I can't ever say no when I really don't have time to help.

7) I worry about what people think and say about me.

8) I'm almost obsessed with punctuality.

9) I can't ever get anyone to do anything right.

Summary—An inferiority complex isn't healthy; therefore, one is to think of one's self with potency and positive imagery.

Brainstorming : Positive thinking is not enough. Summary Motivation, decisions, organization, action and transition are important to develop and pursue.
Brainstorming : Motivation comes from within and not without. Self Motivation generates the energy and willingness to organize, act and exercise new decisions about one's life. Summary Persistence is the key to the joy and satisfaction of those who win and conquer the "Inner

Saboteurs." Even though others may inspire a person and/or even command her/him, an individual's motivation is self determined.

Brainstorming : The only thing we can count on in life is change. Summary An adaptor makes decisions, organizes a plan for the future, takes action, copes with problems and deals with the solutions; meanwhile, keeping one's self on the track of getting more out of life.

Brainstorming : Really listening to what is said involves the mind and the heart. Not really listening is avoiding responsibility for non-positive results. Summary Positive listening will help in clarifying communications and getting contracts for positive results.

Brainstorming : A life without stress, ups-and-downs would be dull. Summary Mastering my moods is the beginning of becoming the person one wants to be plus getting the rewards that go with being a special kind of person.

Brainstorming : The only way to get where one is going is to take the next step. No person can take the step for an individual. When one stumbles, don't shy away from seeking a guide. Summary A winner does what needs to be done and doesn't hesitate to seek constructive help from others who have been trained and/or have had actual experience.

Drug Data and Statistical Lesson Plans

Objective:

Procedure:

Activity:

Evaluation Statistical Strategies/Surveys of Adolescents when Searching for Extreme Competence and Power

Directions: "Your Names Are Not To Be Written on Survey Sheets"

Please read each item carefully, and decide whether you have consumed alcoholic beverages and/or other forms of drug substances when you engage in these separate behaviors while trying to gain "Competence and Power" in today's society. (1) Always (2) Often (3) Occasionally (4) Seldom (5) Never

Survey I (Suggestive Ideas)

1. I practice good human relations and have a keen sensitivity to others. 1 2 3 4 5
2. I demonstrate creativity, resourcefulness and innovation. 1 2 3 4 5
3. I give evidence of personal integrity and dedication. 1 2 3 4 5
4. I demonstrate leadership ability. 1 2 3 4 5
5. I relate the school subjects to my personal needs and future career/s. 1 2 3 4 5
7. I provide for the differentiated educational, emotional and physical needs of myself in school

and my community. 1 2 3 4 5

8. I establish interpersonal relationships with peers and adults who I think that I can trust. 1 2 3 4 5

9. I improve my study and behavioral patterns through supportive school and community services. 1 2 3 4 5

10. I approach the solution of my problems and seek constructive help. 1 2 3 4 5

11. I translate my participation in family, school, athletic and/or community activities into an improved learning situation. 1 2 3 4 5

12. I demonstrate open-mindedness and respect for new positive ideas. 1 2 3 4 5

The teacher and students will collect the information, and proceed with Descriptive Statistics."

Statistical Vocabulary:(1) data (2) descriptive (3) sample (4) variable (5) parameter (6) population (7) statistic (8) statistician

Introduction: Students will write these word meanings.

(1) Data numbers or measurements that are collected as a result of observations.

(2) Descriptive Statistics The study and collection of numerical information or data about the present problem.

(3) Sample A subset of a population or universe selected according to some scheme.

(4) Variable Any characteristics of a person, environment or experimental situation that vary from person to person, environment to environment, or experimental situation to experimental situation.

(5) Parameter Any characteristic of a population which is measurable.

(6) Population A complete set of individuals, objects or measurements having some common observable characteristic or a set of potential observations.

(7) Statistic A number resulting from the manipulation of sample data according to certain specified procedures.

(8) Statistician A person who studies statistics.

Survey II (Suggestive Ideas)

Do I consume alcoholic beverages and/or other forms of drug substances when I am doing the following "Actions?"

1. Careless	1 2 3 4 5
2. Attentive	1 2 3 4 5
3. Inadequate	1 2 3 4 5
4. An expert	1 2 3 4 5
5. Reliable	1 2 3 4 5
6. Idle	1 2 3 4 5
7. Passive	1 2 3 4 5
8. A go-getter	1 2 3 4 5
9. Not conforming	1 2 3 4 5
10. Flexible	1 2 3 4 5
11. Argumentative	1 2 3 4 5
12. Cooperative	1 2 3 4 5
13. Have poor grades	1 2 3 4 5
14. Ambitious	1 2 3 4 5
15. An excellent performer	1 2 3 4 5
16. Disagreeable	1 2 3 4 5
17. Well-liked	1 2 3 4 5
18. Outstanding	1 2 3 4 5
19. Sluggish	1 2 3 4 5
20. Depressed	1 2 3 4 5

Objective Students will make individual frequency tables for "Surveys I and II" data.

Vocabulary (1) data (2) frequency table

Assignment

Separate Behaviors of Adolescents Tally Frequency

(1) Always

(2) Often

(3) Occasionally

(4) Seldom

(5) Never Total: _____

A. Example:

Frequency Table

Pupils in math class were asked what kind of television program they liked best. This data can be shown in a

frequency table.

Kind of television show	Tally	Frequency
Detective	111	3
Comedy	111111	11
Variety	1111	4
Western	111111	6
	Total:	24

As each pupil answered a tally mark was made.

You can see from the table that comedy shows were the favorite of

more pupils than each of the other kinds of shows.

Objective Students will organize the data using a stem-and-leaf display.

B. Example:

23, 14, 34, 33, 24, 46, 47, 35, 45, 12, 46.

The stems are the   4 6,7,5,6   The leaves are the
tens digits. Put   3 4,3,5   ones digits. Each
them in decreasing 2 3,4   leaf is put in the
order from top to   1 4,2   row after its stem.
bottom. First put the leaves

            represents 14 in any order.

Then arrange   4 5,6,6,7
them in increas— 3 3,4,5
ing order from   2 3,4
left to right   1 2,4

Objective Students will solve the "mean" and "median."

C. Example:

Mean:
The mean of a set of numbers in the "average" of the numbers.

To find the mean of a set of numbers,   4.2, 6.3, 7.9, 10, 5
1. Add the numbers.   4.2+6.3+7.9+10+5=33.4
2. Divide the sum by how many numbers
there are.   5 numbers

                                                                33 4Ö$5=6.68
                                                                mean

Median:

	2, 7, 8, 6, 4, 2, 9, 4
The median of a set of number in the middle	

number when the numbers are listed in order.

When there are two middle numbers, add the two

numbers and divide the sum by 2 to find the

median.   9, 8, 7, 6, 4, 4, 2, 2

3 numbers 6+4 3 numbers

2

5 median

statistics concepts:

Objective Students will use calculators to calculate Pearson r correlation coefficient: Raw Score Method.

(figure available in print form)

Directions: Assume 100 students did "Surveys I and II." (a) Write numbers 1-49 for "Survey I." The Formula: participate. (b) Write numbers 50-100 for "Survey II" participants. (c) Have 10 students to draw 10 slips of numbers out of #1-49 box. (d) Have 10 more students do the same for #50-100 box. (e) Record "Survey I" numbers on the chalkboard (X=) Survey I. (f) Record "Survey II" numbers on the chalkboard (Y=Survey II).

D. Example:

	First Drawing	Second Drawing			
	(1)	(2)	(3)	(4)	(5)
Student	Survey I	Survey II			
	X	Y	X^2	Y^2	XY
A	37	75	1369	5625	2775
B	41	78	1681	6084	3198
C	48	88	2304	7744	4224
D	32	80 (A	1024	6400	2560
E *Add*	36	78 throw back)	1296	6084	2808
F	30	71	900	5041	2130
H	45	83	2025	6889	3735
I	39	74	1521	5476	2886
J	34	74 (A throw back)	1156	5476	2516

n=10

  14,876 60,444 29,832

(1) Sum of X Surveys = 14876 Ð 382 ^{2} = 283.6

       10

(2) Sum of Y Surveys = 60444 Ð 776 ^{2} = 226.4

       10

(3) Sum of XY Surveys = 29832 (382) (776) = +188.8

 (4) rxy means r (raw score) = + 188.8 = .75
  (283.6)(226.4)   raw score value

> I. (a) Changing "The Problem" data of alcohol, nicotine, and smoking from percentages-to-decimals and decimals-to-fractions (11%, 5%, 9%, 4%, 2%). (b) Changing the A. *Chart* "Drug Use and Age Group" (decimals fractions percentages).
>   A.

(figure available in print form)

>   B.

(figure available in print form)

Square Roots

Use when appropriate.

Find each square root.

 1. Ã4 2. Ã16 3. Ã64 4. Ã225
Use the table below to find each of the following:
5. 25:= ___   6. 29 = ___   7. 77 = ___
8. 80 = ___   9. 121 = ___   10. 130 = ___
11. 22 = ___   12. 71 = ___   13. 30 = ___
14. 125 = ___   15. 72 = ___   16. 128 = ___
17. 441 = ___   18. 5929 = ___   19. 900 = ___
20. 15,129 = ___ 21. 16,384 = ___ 22. 841 = ___
23. 6400 = ___   24. 5184 = ___   25. 15,876 = ___
26. 625 = ___   27. 5041 = ___   28. 16,900 = ___

n	n²	n	n	n²	n	n	n²	n
21	441	4.58	71	5041	8.43	121	14,641	11
22	484	4.69	72	5184	8.49	122	14,884	11.05
23	529	4.80	73	5329	8.54	123	15,129	11.09
24	576	4.90	74	5476	8.60	124	15,376	11.14
25	625	5	75	5625	8.66	125	15,625	11.18
26	676	5.10	76	5776	8.72	126	15,876	11.22
27	729	5.20	77	5929	8.77	127	16,129	11.27
28	784	5.29	78	6084	8.83	128	16,384	11.31
29	841	5.39	79	6241	8.89	129	16,641	11.36
30	900	5.48	80	6400	8.94	130	16,900	11.40

II. Making bar line and circle graphs using drug abuse data collected from *B* . *Chart* "Marijuana and Alcohol."

Concluding:

Humanizing Learning : Statistical concepts are to facilitate the effective integration of affect and cognition. The primary aims are to enhance the students' interpersonal skills; to achieve greater initiative; to sharpen perceptions of self and others; to be more self-directive in resolving personal life problems without abusing our bodies with drugs.

Additional Teaching Suggestions and Student Practice Work

(Statistical Abstract)

A. Have each pupil cut out a short paragraph (less than 10 lines in a column less than 2 inches wide) from a discarded newspaper. The pupil should paste he paragraph on a sheet of paper and below the paragraph make a frequency table that shows how often each letter of the alphabet occurs in the paragraph. Then the pupil should find the mode. Does each pupil's answer confirm the belief that "e" is the most frequently used letter in the English language?
B. Find the mode or modes, if any, and the range for the data in the frequency tables below.

1. *Number* Frequency 20; 19 2. *Number* Frequency 154 and 158;

7	1	146	12	14
10	1	148	15	
13	3	150	9	
15	4	152	23	
17	2	154	24	
20	5	156	10	

21 1 158 24
26 3 160 7
total 20 total 124
Find the mode or modes, if any, and the range for each list.

3. 76, 69, 77, 73, 83, 77, 77; 14
4. 10, 7, 11, 9, 7, 8, 9, 7 and 9; 4
5. 291, 305, 196, 206, 199 no mode; 109
6. 23, 24, 20, 20, 23, 24, 24, 20, 23 no mode; 4

C. Point out that the *mode* and the *range* are easy to find when a *set of data* is organized in a frequency table. Stress that the "mode" is not the highest frequency, but rather the number (or item) with the highest frequency.

You might want to mention that while a range is restricted to "numerical data", the "mode" has no such restriction.

1. Make a frequency table for the following set of numbers:
132, 132, 135, 136, 135, 133, 132, 135, 133, 135

No.	132	133	135	136	total
Freq.	3	2	4	1	10

For the set of numbers in exercise 1, find:
2. the range   4
3. the mode   135
4. the median 134
5. the mean   133.8

D. 32, 34, 28, 36, 32, 26, 32, 34, 28, 26

The difference between the largest and the smallest number in a list is called the range. The number that occurs most often is called the mode.

Example 1: Find the range and the mode of the data above.

Number	Frequency
36	1
34	2
mode 32 3 highest frequency, so	
28	2 the mode is 32 mpg
26	2
total	10

largest   smallest
number   minus number
36   Ð 26
          10 range

E. You might also want to mention that if a set of data has two modes, then it is said to be bimodal. Emphasize that a set of data can have no mode, one mode, or more than one mode.

A list of data can have one mode, more than one more, or no mode.

Example 2: a.   b.   c.
          18   2   23

17	4	24
16 one mode	1 no mode	25 two modes
18 (18)	7	23 (23 and 24)
17	5	26
18	9	24

F. Point out that the most frequently used kind of typical number is the mean. Stress that although mode, median, and mean are all typical numbers (or averages), the word average (or arithmetic average) usually refers to the mean.

Find the mean. Found to the nearest tenth when necessary.

1. 21, 32, 21, 89, 12 = 35
2. 14, 13, 19, 18, 22, 15 = 16.8
3. 14.3, 15.6, 14.8, 13.3— 14.5
4. 0.14, 0.39, 0.37 = 0.3

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