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ABSTRACT

A study explored a number of variables related to the health decision making of 43 ninth grade students from Montana and New York. Students filled out a questionnaire which had them first read a short drinking and driving scenario and then answer questions which asked them to: (1) make a decision; (2) report how long they would take to make their decision; (3) discuss the impact that stress would have on that decision; and (4) report on future health decisions. Mean scores for each study variable were calculated and comparisons made between Health-Promoting Decision Makers (HPDM) and Health-Risky Decision Makers (HRDM). There were statistically significant differences between HPDM's and HRDM's on three study variables: (1) future decisions on premarital sexual behavior; (2) future decisions on drinking and driving; and (3) degree of reflection over the health decision. Regardless of the decision made by students, their reported cognitions during the making of that decision were overwhelmingly social in nature. Recommendations for health curriculum planners and school health researchers are presented in conjunction with suggestions for potential future investigations in this area. (JMK)

AN EXPLORATORY STUDY OF THE HEALTH DECISION MAKING VARIABLES OF NEW YORK AND MONTANA NINTH-GRADERS

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Introduction

A recent paper by Patrick Tierney suggests that most children perceive adults as illogical (11). Formal logic, it is said, with its strict, closed world of interlocking rules, has no explanation for the irrational behavior of humans - especially adults (p. 72).

Although there are few studies on this perception in Health Education there is a continual interest in childrens role models,(4) environment,(9) personality,(7) and health-related skills(1,5,10). If children do indeed perceive adult behavior as irrational or illogical, an array of implications for school health curricula become apparent. One of the most critical of these implications in the view of many investigators is youthful health decision making (10, p. 279).

Research is beginning to show that adolescents with an established and comfortable adult support network are less prone to engage in health risky actions (i.e., smoking)(13). Moreover, investigators are now positing that substance abuse decisions of the young may be a result of one or more of the following conceptualizations: (1) generalized deviant behavior; (2) initiation into a specific subculture of users(6) and/or, (3) an adaptive mechanism for managing life stresses (13,p. 15). Further study is required before health educators gain insight into which conceptualization whether alone or in combination, best explains such youthful decisions. What is immediately apparent, however, is that the field of Health Education has little data addressing the inner cognitive dynamics of health decision making in youth - regardless of which conceptualization they derive from. The present paper is an investigation which attempts to describe some of the parameters involved in the health decision making of youth. Because of the lack of empirical foundation in measuring and evaluating these dynamics in youth,

the study reported here is descriptive in nature. Recommendations for health curriculum planners and school health researchers are presented in conjunction with suggestions for potential future investigations in this area.

Methods

Ninth-grade students (N=43) from New York and Montana public schools were given a questionnaire by their teachers using a standardized administration protocol. The questionnaire, a modified version of an earlier instrument, proved to be both comprehensible and reliable (Figure 1). Student identity was kept confidential and all subjects completed each section without any reported difficulties. Gender of subjects was not identified nor was socioeconomic status, ethnicity or other demographic variables.

Description of Study Variables

Decision Outcome

Students read a short drinking and driving scenario (Figure 1) and answered the accompanying questions. Question 1 asked students to make a decision regarding the scenario on a 5-point Likert scale. "Definitely yes" responses were scored a "1" with definitely no responses scored as fives. For purposes of analysis, definitely no and probably no responses to this first question were designated as "Health-Promoting Decisions" (HPD). Conversely, definitely yes and probably yes responses were designated as "Health-Risky Decisions" (HRD).

From this dichotomy it was possible to group students as either health-promoting decision makers (HPDM) or health-risky decision makers (HRDM). Subsequent assessments of subjects involved comparing these two groups across study variables. Students answering not sure were excluded from the analyses.

Reported Cognitions

Question 2 asked students to report what they thought about (i.e.,

cognitions) in making their decision. These responses* were then each classified by independent raters into one of the following categories:

- Health-Related Cognitions: responses which indicated a concern for health status, injury, death and/or general physical well-being (i.e., "I might get killed"/"We might get into an accident and be permanently injured"/"If I get hurt - no more sports").
- Social-Related Cognitions: Responses which indicated a concern for social priorities (i.e., "Who will be at the party that I like?"/"What time will I get home?"/"How much fun will I have?")
- Internal-Personal Cognitions: Responses which indicated a concern for inner or personal priorities, philosophical, moral and/or ethical values (i.e., "Do I really want to go?"/"It isn't right to not go if I am invited"/"Will I be able to feel good about going?").
- Undefined Cognitions: Responses which fail to reflect any definite concern, were unintelligible, nonlegible or incoherent (i.e., "party"/"gas money"/"boredom"/"morning problems").

Health cognitions were given the scoring code of 4, internal-personal cognitions a 3, social cognitions a 2 and undefined cognitions were coded as ones. Student responses were then tabulated and portrayed in a frequency distribution (Figure 2.).

Reflectivity

Question 3 asked students how long they would take to make their decision (i.e., degree of reflection). There exists virtually no data on this temporal dimension of youthful health choices. Responses to this item were scored from 1 to 6, with "I'd decide instantly" assigned a 1 and "...much longer than 5 minutes to decide" assigned a six. In this respect, higher mean scores were indicative of a greater degree of reflection in making the decision (Table 1).

*Examples given were taken from actual study data.

Question 4 assessed what the impact of stress would be upon health decision. Because answers to this item were scored differently depending on the student's initial decision response, these data were tabulated in a 3X3 contingency matrix (Table 2) using the following scoring format: If a student's initial response to the decision was "definitely no" (i.e., health promoting) and their response to question 4 was "definitely yes" (i.e., would make same decision under stress), the response to question 4 was scored a five (i.e., still health promoting decision even under stress). This scoring format thereby shows that the initial decision was health-promoting (i.e., definitely no) and that even if made under stress that decision would still be health-promoting in nature. Conversely, if a student's initial decison was "definitely yes" (i.e., health-risky) and their response to question 4 was also "definitely yes" (i.e., would make the same decision under stress), then the response to question 4 was given a score of one. This would suggest that an initial decision was health-risky and that if made under stress that decision would still be a health-risky one.

Future Health Decisions

Question 5 asked students to report on which health choices they had already decided upon (Table 1). Future marijuana and cigarette smoking, drinking and driving and premarital sexual behavior were the behaviors of concern on this question. "Yes"responses were once again designated "health-risky" and thus scored lower than those designated as "health-promoting" responses (i.e.,"no" responses). "Yes" responses were given the score of one, "haven't decided yet"given the score of two and"no's"given the score of three.

Data Analysis

Mean scores for each study variable were calculated and comparisions made between Health-Promoting Decision Makers (HPDM) and Health Risky Decision Makers (HRDM). Comparisons across study variables for geographic

region (Montana/New York) were insignificant and will not be presented.

Mean scores were then assessed for specific variables using t-test. These results are presented in Table 1. Table 2 gives the results for the variable of stress. These outcomes are portrayed without statistical significance figures. This was done so that these findings would be assessed in a purely descriptive manner. For these variables (stress and decision) frequency distributions are used.

Results

There were statistically significant differences between health-promoting decision makers (HPDM) and health-risky decision makers (HRDM) on the following study variables: (a) Future decisions on premarital sexual behavior (i.e., less premarital sexual behavior for HPDM), (b) Future decision on driving and drinking, (i.e., less driving and drinking for HPDM) and, (c) Degree of reflection over the health decision (i.e., less reflection for HPDM). These results are presented in Table 1.

TABLE 1
Health Decision and Premarital Sexual Behavior, Drinking and Driving and Reflection Variables

		$\bar{X}$	SD	df	t-value	p
Future Premarital Sexual Behavior	HRDM	1.62	.506	25	-4.26	0.001
	HPDM	2.57	.646			
Future Drinking and Driving	HRDM	2.15	.689	25	-4.60	0.001
	HPDM	3.00	.000			
Degree of Reflection	HRDM	3.69	1.32	25	2.41	0.023
	HPDM	2.43	1.39			

The mean score for HPDM on whether they planned to engage in future premarital sex and behavior was 2.57, conversely, HRDM reported a mean score of 1.62 for this variable. The t-value for this difference was -4.26, a statistically significant result at the $p < .001$ level.

With respect to the variable of reflection, there was a significant difference between HPDM and HRDM. The mean score for HPDM was 2.43, while HRDM reported a mean score of 3.69. The t-value for these means was 2.41, a statistically significant result at the $p < .05$ level. In summary, HPDM intended to drink and drive less, and engage in future premarital sexual behavior less than HRDM. Contrastingly, HRDM tended to spend greater time reflecting over their initial decision than did HPDM.

The outcome describing the association between the variables of stress and health decision are presented in Table 2.

TABLE 2

3X3 Contingency Matrix Frequencies -

Health Decision by Stress

		Initial Health Decision		
		Health Promoting		Health Risky
		"No"	"Unsure"	"Yes"
Stress*	"No"	5	7	4
	"Unsure"	3	4	6
	"Yes"	6	5	3

*Would you make the same decision if you were under stress?

Results showed that of the 14 students who initially made a health promoting decision (i.e., "No" response), only 6 students would have made that same decision, under stress. Moreover, of the 13 total students who initially made a health risky decision, 4 students would have changed that decision, under stress, to a health promoting decision. The middle column reports the frequencies of students who were initially undecided on their health decision, and who remained undecided even when under stress.

Figure 2 gives the results for the variable of student reported cognitions during the initial health decision. Both HP and HR decision makers reported a greater number of social-related than health-related cognitions during the health decision. Health-promoting deciders (N=14) reported a total of 37 social related cognitions, while HRDM (N=13) reported a total of 40 social-related cognitions.

DISCUSSION

This study has described some relationships among components of health decision making in youth. In trying to draw a picture of how young persons make health decisions methodological problems abound. Moreover, because this particular domain of Health Education research is at the embryonic stage of development findings must be interpreted cautiously.

Regardless of the decision made by students (e.g., health-promoting or health-risky), their reported cognitions during the making of that decision were overwhelmingly social in nature (Figure 2). This outcome supports previous research that social concerns among the young are paramount once they enter adolescence (3,8,12). Curriculum planners may therefore wish to consider conducting an assessment of student social priorities before designing a health program's course content and/or strategy. Additionally, curricula may want to instill in students a greater concern for their personal health risk in potentially harmful situations, such as, accompanying drinking drivers in motor vehicles.

The results of the study addressing degree of reflection in making a health decision should be considered carefully (Table 1). Health-

promoting decision makers (HPDM) spent less time in making their decision than those who chose to make a health-risky choice. Possibly, students who are inclined not to engage in potentially dangerous behavior (e.g., riding with drinking drivers), do not even attempt to spend time thinking over such choices but instinctively decide "no". To such individuals certain situations may be clearly unacceptable and virtually no time is needed to asses such choices. Whether this inclination is a function of prior indoctrination (e.g., parental admonitions), past experiences (e.g., an accident) or some other component is ultimately left to future research. What may be important curricula-wise is that school health programs begin teaching students to adopt a more reflective posture in all situations involving their health. Nowhere in the Health Education literature is there cited a program designed to enhance student reflectivity(2).Yet, getting young people to stop and critically assess health choices is a frequently mentioned part of school health education.

Future health decisions among youth have been generally overlooked in the Health Education field today. The outcomes from the present study indicate that students who would choose not to accompany a drinking driver also planned not to engage in premarital sexual behavior (Table 1). Likewise, these same students reported they would not themselves drink and then drive in the future. There were no such statistically significant distinctions among students on future health decisions involving cigarette or marijuana smoking. One possible explanation for this apparent contradiction concerns student perception of the relative risks associated with

these health behaviors*. Do students at the ninth-grade level perceive less potential harm from marijuana and cigarette smoking than from drinking and driving and premarital sexual behavior? The current study cannot offer any definitive answers to this question, however, it does delineate this question as both an important and exciting area for future investigations.

The relationship between health decision and stress, given in Table 2, illustrates the differential impact of stress upon selected health choices. Thirty-six percent (5/14) of the students who initially made a health-promoting decision (e.g., question 1 on the questionnaire = "No"), reported that under stress they would not make that same decision. In other words, they would be inclined to make a less favorable health choice. There is little comparative data available on this extremely important relationship, however, from the subjects assessed in this study it is probably safe to infer that some young persons would be pressured into health-risky acts in the face of specific stressors.

Conversely, of the 13 students who initially made a health-risky choice (e.g., question 1 on the questionnaire = "Yes"), 4 or 37 percent reported they would change their decision under stress. Each of these results suggest that the relationship which one might hypothesize between decision and stress (e.g., stress negatively effects health choice), is not definitive. Why would students who decided to ride with drinking drivers, decide otherwise when under stress? This kind of issue is similarly fruitful for future investigation on health decisions.

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*An argument has been made that the consequence which a user assigns to drug taking is one of the most relevant for public as well as adolescent health. See: Consequences of Alcohol and Marijuana Use - Survey Items for Perceived Assessment. National Institute on Drug Abuse, U.S. DHHS, PHS, 1980, p. VII.

In summary, this study explored a number of variables related to the health decision making of ninth-grade subjects from Montana and New York. While there were no significant differences regionally, a number of findings, among them degree of reflection and reported cognitions during the decision, were revealing. Health curriculum planners were presented with possible areas to explore in order to facilitate the design of effective and meaningful school health interventions dealing with decision making. Future investigations in this domain need to focus increased attention on developing measurement protocols which portray more precisely student thinking during various health-related choices. The present study is a preliminary step in this direction.

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FIGURE 1

DO NOT PUT YOUR NAME ON THESE PAGES

Next week you are going to go to a rock concert with your best friends. Everyone, including your friends, will be drinking beer during the concert. You have all driven there in one of your friends' cars. After the concert you will all be invited to a nearby party given by some other friends. Your friend offers you a ride to the party.

1. Would you decide to go? (Circle one)

Definitely yes Probably yes Not sure Probably no Definitely no

2. What kinds of things would you think about in making your decision?

(1) _____

(2) _____

(3) _____

(4) _____

(5) _____

(6) _____

(7) _____

(8) _____

(9) _____

(10) _____

(If you need more space, use the back of this page.)

3. How long you you think you would take to make this decision? (check one)

I'd decide instantly____
I'd decide after a few seconds___
I'd decide after about 30 seconds____
I'd decide after about a minute____
I'd decide after about 5 minutes____
It would take me much longer than 5 minutes to decide____

4. If you were depressed or lonely or angry while making your decision, do you think you would make the same decision? (Circle one)

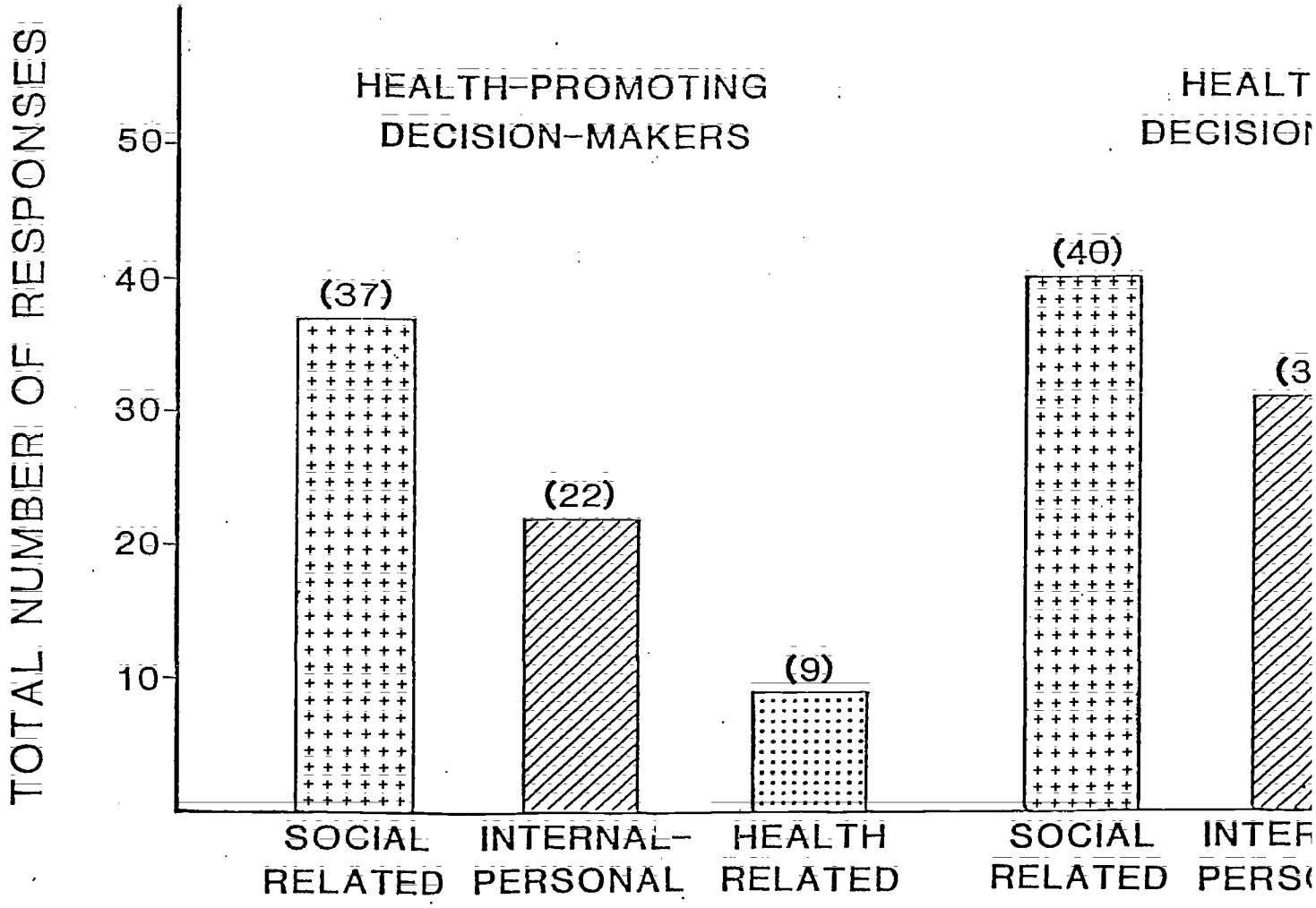
Definitely yes Probably yes Not sure Probably no Definitely no

5. Which of the following have you already decided upon? (Place a check in the space.)

To smoke marijuana	yes___	no___	haven't decided yet___
To drive after drinking alcohol	yes___	no___	haven't decided yet___
To smoke cigarettes	yes___	no___	haven't decided yet___
To sleep with my boyfriend or girlfriend before we're married	yes___	no___	haven't decided yet___

FIGURE 2. REPORTED COGNITIONS BY TOTAL NUMBER O
FOR HEALTH-PROMOTING AND HEALTH-RISKY DE

(N = 43)



*"NOT SURE" OMITTED