

## THE INTERACTION OF SECONDARY AGRICULTURE TEACHER HEALTH AND THE SCHOOL AS A WORKPLACE

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Is the health of agriculture teachers as it should be? The profession does not know! Is teaching hazardous to your health? No one seems to know (Harlin, Jerrick, & Rosenthal, 1976)!

Teacher health is described as the physical and mental well-being of teachers (Harlin et al., 1976). Harlin et al. (1976) describe ten categories of health concern that may create barriers to good teaching. The categories are: (a) emotional or psychosomatic, (b) communicable diseases, (c) systemic, (d) vision and hearing problems, (e) dental disorders, (f) surgery, (g) injuries, (h) orthopedic problems, (i) weight and nutritional problems, and (j) pregnancy or child care.

Factors in a workplace affect employee health. Standards developed under the Occupational Safety and Health Act (OSHA) have placed a high priority on working conditions in a variety of employment situations (Godbey, 1979). What about the school as a workplace? What environmental conditions affect the physical and mental health of teachers? More importantly, are appropriate programs or policies in place to deal with the interaction of teachers and the school as a workplace?

"Schools have for a long time imposed upon teachers a set of working conditions that can only be described as demoralizing and debilitating" (Levine, 1986, p. 161). Results of a study conducted by *Instructor* magazine verified the dismal picture printed by Levine. Landsmann (1978), editor-in-chief of *Instructor* magazine, reported that one-third of the teacher respondents felt that the environment of the school negatively affected their health. A subtabulation showed that the 39 percent of the teachers responding yes to the question, "Does your principal take an active role in helping teachers stay mentally and physically healthy?" enjoy demonstrably better health than the 61% responding no. Plowman and Bischoff (1985) point out that even though wellness programs are commonplace in business and industry, few are found in elementary and secondary schools.

Substantiation of the presence or lack of suitable workplace conditions for agriculture teachers is long overdue. As Harper, Weiser, and Armstrong (1980, p. 214) stated, "Teachers of vocational agriculture teach in what may be perceived as a unique environment when compared to other teachers in a secondary school. Vocational agriculture teachers instruct not only in classrooms and laboratories, but also on-site at their students' farms and ranches." Teachers and students alike will gain from scientific information on the interaction of teacher health and the school as a workplace.

### Purpose and Objectives

The purpose of this research was to identify the factors in the school workplace that may contribute to health status of secondary agriculture teachers in the United States. The following objectives contributed to achieving the purpose: (a) to determine the scope and relationship of wellness programs to secondary agriculture teachers in the United States; (b) to determine the relationships, and perceptions of agriculture teachers to school environment and teacher health; (c) to determine the relationships, and perceptions of secondary agriculture teachers, regarding administrator assistance in maintaining teacher health and health care experiences; and (d) to describe health factors related to the school workplace.

### Procedure

The research involved a descriptive-correlational study. A systematic sample of 502 vocational agriculture teachers was selected from the 12,053 names listed in the 1987 edition of the Agriculture Teachers Directory. A random entry point was established with the name of every 24th teacher appearing in the Directory being selected. The sample size was based on recommendations made by Krejcie and Morgan (1970) and previous experiences with the population (Handley, 1988). They suggested that a minimum data sample of 300 was considered adequate.

The Educator Health Care Assessment Instrument (EHCAI) (Copyright 1988, Mississippi State University) was designed following the guidelines of Sudman and Bradburn (1982). Considerable

literature on health care was reviewed to establish general content parameters for the instrument. The EHCAI was designed with two major parts: Part One included health care experience and concerns and Part Two included a number of health related factors.

Part One was organized around nine areas, as follows: injuries, surgery, dental conditions, emotional or psychosomatic conditions, pregnancy/child care, communicable diseases, orthopedic conditions, systemic conditions and vision/hearing conditions. Each of the nine areas contained two or more specific health care items to which the respondents were to provide information to three questions: (a) "Have you experienced this health care item?" (Respondents circled "yes" or "no."), (b) "How many days did you miss from school/work because of the health care item in the past year?" (Respondents listed the actual number of days.) and (c) "How much concern is the health care item to educators?" (Respondents used a five-point scale to rate the level of concern, with five being the highest concern and one being the lowest concern.)

Part Two, health related factors, included a number of items present in the school and personal environment that might be related to health care experiences and concerns of educators. Particular emphasis was placed on assessing the school-site environment as related to the health of educators.

A panel of 10 health care and education experts was used in the instrument validation process. A stratified sample of 39 (26 responded) vocational agriculture teachers representing the four FFA regions of the United States was used to establish reliability. A Cronbach alpha coefficient of .85 was found on the pilot study and .97 on the data sample.

A modification of the Total Design Method (Dillman, 1978) was used in gathering information from the sample. This included mailing a personalized memorandum and the EHCAI on April 15, 1988, followed 5 days later by a reminder card. Planned second and third mailings were not made because of the excellent response rate, lateness in the school year, and possible returns relative to dollar cost. A data sample of 303 was obtained from an accepting sample of 306. Ten percent of the nonrespondents were systematically selected using a random entry point for contact by telephone to obtain information to compare responses of nonrespondents to respondents. Few statistical differences were found. Closer analysis determined none to be of practical significance. Data analysis for the research involved the calculation of central tendencies, relationships, and significance tests.

## Results

It was the perception of 42% of the respondents that school environment affected the health of educators. The ten areas perceived as being the greatest environmental problems were (in descending order): laboratory noise level (25% of the data sample), laboratory air quality (23%), laboratory temperature (17%), laboratory instructional chemicals (14%), classroom temperature (14%), laboratory acoustics (12%), laboratory cleanliness (11%), laboratory safety features (11%), laboratory lighting (10%), and classroom air quality (10%).

The health of 128 teachers (42%) who stated that the school environment affected the health of educators was compared to the 161 (53%) who stated it did not. Significant and meaningful relationships existed. The differences (by individual health item) shown in Table 1 indicate that agriculture teachers who perceive the school environment to affect the health of educators experience more laboratory injuries, more abuse/violence from students, undergo more minor surgery, greater job stress, more depression, increased insomnia, greater fatigue, and greater hearing loss.

The differences (by health category) shown in Table 2 indicate that agriculture teachers who perceive the school environment to affect the health of educators miss more days of school due to injuries and communicable diseases.

Agriculture teachers were asked the question, "To what extent does your immediate administrator assist you in maintaining physical and mental well-being"? A five-point Likert Scale with polar descriptors (1 = none, 5 = much) was used. Thirty percent of agriculture teachers responded (1) none; an additional 19% marked (2). Fifteen percent of teachers marked (4); only 7% responded (5) much.

**Table 1**  
Relationship Between Health Experience and School Environment of Teachers

Health Item	Phi Coefficient*
Fatigue	.23*
Laboratory Injuries	.21*
Insomnia	.18*
Hearing Loss	.17*
Student Abuse/Violence	.17*
Depression	.16*
Job Stress	.15*
Minor Surgery	.15*

\* $p < .05$ .

**Table 2**  
Relationship Between Days Missed (By Health Categories) and School Environment of Agriculture Teachers

Variable	Group <sup>a</sup>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>t</u>	<u>p</u>
Injuries	1	159	.0016	.020	-2.52	.013*
	2	127	.1102	.487		
Surgery	1	159	.1237	.678	-0.29	.771
	2	127	.1470	.664		
Dental	1	159	.0608	.333	-0.35	.723
	2	127	.0735	.272		
Emotional or Psychosomatic	1	159	.0480	.191	-0.83	.405
	2	127	.0651	.157		
Communicable Diseases	1	159	.1472	.273	-2.22	.027*
	2	127	.2220	.295		
Orthopedic	1	159	.0021	.026	-1.70	.092
	2	127	.0184	.105		
Systems	1	159	.0830	.490	-0.45	.656
	2	127	.1197	.817		
Pregnancy/ Child Care	1	159	.0833	.455	-0.73	.469
	2	127	.1358	.706		
Vision/ Hearing	1	159	.0084	.064	-0.26	.794
	2	127	.0105	.072		

**Note.** Adjustments have been made for variables that violated the homogeneity of variance assumption.

\* $p < .05$ .

a1 = No problem

a2 = Yes, problems exist

Table 3 shows a comparison of teachers who perceived their immediate administrator as assisting in maintaining physical and mental well-being to those who did not. Teachers who perceived a lack of administrative assistance experienced greater abuse/violence from students, more frequent headaches, and more digestive problems.

Agriculture teachers offered suggestions regarding ways administrators could better assist teachers. The most common responses included positive feedback, willingness to communicate, and better management of the school environment and facility.

Wellness programs exist in 20% of the schools in this study. In the schools where wellness programs exist, three out of every five agriculture teachers participated. A comparison of the health of teachers ( $n = 43$ ) who participated in a wellness program to those who did not ( $n = 260$ ) was made.

Table 3

Relationships Between Health Experiences and Lack of Administrator Assistance as Perceived by Agriculture Teachers

Health Item	Cramers' $\gamma^*$
Digestive Problems	.22*
Headaches	.21*
Student Abuse/Violence	.19*

\* $p < .05$ .

The differences (by health category) shown in Table 4 indicate that wellness program participants miss significantly fewer days of school due to injuries and systemic problems.

Table 4

Relationship Between Days Missed (By Health Categories) and Agricultural Teacher Participation in School Wellness Programs

Variable	Group <sup>a</sup>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>t</u>	<u>p</u>
Injuries	1	264	.0530	.341	2.08	.038*
	2	36	.0069	.042		
Surgery	1	264	.1351	.683	0.79	.434
	2	36	.0741	.391		
Dental	1	264	.0694	.318	1.67	.098
	2	36	.0278	.093		
Emotional or Psychosomatic	1	264	.0499	.144	-0.54	.594
	2	36	.0783	.312		
Communicable Diseases	1	264	.1765	.293	-0.96	.342
	2	36	.1444	.170		
Orthopedic	1	264	.0088	.074	-0.04	.968
	2	36	.0093	.056		
Systems	1	264	.1053	.681	1.98	.049*
	2	36	.0194	.067		
Pregnancy/ Child Care	1	264	.0881	.514	-0.86	.394
	2	36	.2153	.864		
Vision/ Hearing	1	264	.0101	.070	0.86	.391
	2	36	.0000	.000		

Note. Adjustments have been made for variables that violated the homogeneity of variance assumption.

\* $p < .05$ .

a1 = No problem

a2 = Yes, problems exist

A number of additional factors may be indirectly related to the school workplace. Fifty-six percent of all respondents were overweight, with 35% being more than 10 pounds overweight. A relationship was found between overweight teachers and increased colds and circulatory problems. Irregular meals were a problem for 28% of the respondents; 17% felt they received improper nutrition. Twenty-seven percent indicated that they smoked, dipped, or chewed tobacco. A relationship was found between tobacco use and increased usage of alcohol.

**Conclusions and/or Recommendations**

Teachers perceived the school workplace to be deficient in (a) appropriate physical environment, such as laboratory noise and air quality, and (b) administrative assistance in maintaining physical and mental well-being. The data verified that only a small percentage (20%) of schools had wellness programs.

Significant and meaningful relationships existed between: (a) environment and health care experiences, (b) environment and days missed by health area, (c) administrative assistance and health care experiences, and (d) wellness program participation and days missed by health area. The most important relationships were in the health categories of injuries, systemic, and emotional or psychosomatic. Development of a valid wellness program for educators is recommended. This recommendation is based on the direction of relationships aforementioned and the theoretical underpinning of the capability of wellness programs to improve psychosomatic health and reduce systemic disorders. A similar study should be carried out with vocational teachers in other areas and non-vocational teachers. The findings could be used in designing a wellness program for vocational schools and educators.

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