



An Examination of College Student Health Knowledge

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Abstract

College students possess an omnipresence reference that influences their assumptions that their youth is equated to good health. For the most part, this logic prevails, until a closer examination of college life experiences reports high risk behaviours, struggles with health issues and the onset of conditions that were preventable by a healthier lifestyle. Suicide deaths, risky sexual practices, sleep deprivation, substance use represent more of the impactful unhealthy practices and missed meals, non-nutritious food intake and untreated colds/coughs represent the more moderate health concerns of college students. The current investigation explored the health knowledge of college students. Results from a pre-test to post-test case control design indicated a statistically significant difference in health knowledge following a Health Psychology course/educational intervention. The overall number correct on a textbook publisher instrument of Health Knowledge was used as the dependent variable. With no significant differences found for demographic variables of age, gender, number of health related courses taken the data was collapsed into a single group for analysis. The results are presented and discussed in terms of low and high areas of knowledge.

Keywords: Examination; College; Student; Health knowledge

An Examination of College Student Health Knowledge

The emerging adult college student has several challenges to navigate during their college career besides academic performance. The hazards to the health of the college student stem from irregular schedules of late night hours, mental health issues of depression, anxiety, substance experimentation/use to lifestyle factors of low activity level/exercise, stress triggering unhealthy habits, poor sleep quality [1-4] and nutritional intake. It is estimated that 1100 deaths annually occur due to suicide during the college years [5]. The incidence of suicidal ideation and depression has doubled since the 1990s with the average age of onset of depression now at age 20 years rather than 29 years noted twenty years ago [3]. The incidence for the onset of eating disorders during college year is 0.5-4.2% for anorexia nervosa and bulimia [6]. The use of narcotics has risen to record levels in the last ten years [3]. 1700 college students die from alcohol-related injuries each year [7]. It is estimated that 45% of students are binge drinkers, 19% are frequent binge drinkers and 16% abstain from alcohol use. Added to these figure is a reporting of 4 in 5 fraternity/sorority members as binge drinkers [1]. Estimates of 15% of college students have experimented with Ecstasy, a sevenfold increase since 2001 [8]. Some 100,00 students are victims of alcohol-related sexual assault or date rape (i.e., Rohypnol, gamma hydroxybutyrate admissions to emergency rooms has quadrupled). Thus, serious health issues exist in the College student population.

With an estimate of 9 million 18-24-year-old students enrolled in college nationally, important surveys such as the National College Health Assessment provide descriptive information about this population [3,9]. While some 92% report good to excellent health, estimates of 40% of students currently take prescription medication for depression and stress conditions [8]. 32% of this sampling reported using alcohol frequently as stress management [3,9]. Increased use of risky sexual practices, substance abuse and poor sleep/eating habits occur during college years [10]. Given the association between the development of at risk behaviors during youth and onset of adult illnesses of Cardiovascular disease, Diabetes, Cancer, the engagement in unhealthy behaviors continues [5] used real time diaries of participants to examine health information seeking practices. This is in contrast to the traditional means in the literature of recall techniques on surveys and interviews. The findings indicated that college students, as a population, encounter many health risks and they lack adequate

information on health topics [3,8]. For example, instead of health information on activity levels they were commonly presented with websites for fitness and fitness program memberships. Additionally, Baxter et al. reported that college student's health information seeking was influenced by their interest and satisfaction with the search topic -specifically, the college student more commonly searches for fitness information rather than nutrition or mental health information.

Physical activity levels and exercise are a commonly Health intervention. The activity deploys the college student's attention from everyday matters and positive physiological benefits ensue. Zimmerman-Sloutskis, Wanner, Zimmermann and Martin reported the prevalence of inactivity/"no sport" and non-membership in a sport club increased with age. The reported low levels of physical activity trends from their cross-sectional study of a national representative data base points to alarming results. Sedentary activity has been identified as a risk factor associated with mid-life development of cardiovascular and metabolic disorders. Grossman reported the utility of massage relieving not only activity related strain but also as a stress management intervention. Increases in blood flow, lymph flow, white blood cells and T lymphocytes were measured following massage. The associated between causes of preventable death and risk factors has been identified. Tobacco, poor diet and physical inactivity, alcohol consumption, sexual behavior, illicit drug use and other factors account for 48.2% of the variance in predicting mortality [7].

Perhaps a pathway to facilitating the college student to engaging in a greater number of health practices consistently could be found in the adherence literature. Adherence rates typically start low and reduce further with the passage of time [11]. Patients that adhere to

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treatment reported improved psychological functioning and reduced hospital rates. Medication non-adherence is predictive of relapse and hospitalization. With the deterioration of adherence rates overtime, consideration of influencing factors such as literacy, education level, social support, belief systems and knowledge about their condition have to be examined. The recognition that a condition is or may compromise one’s health, the awareness of the impact of a condition on the body and a confident understanding of what to do to ameliorate the situation are fundamental to understanding adherence [11].

With the college student being in an education environment, investigations have examined how college students learn about their health so as to circumvent these serious health risk behaviors largely induced by stress and low regard of Health or Health knowledge [3,5,6,10]. College students seek health information on the internet [6]. The common areas include: relationship issues, financial concerns, sexually transmitted diseases and their treatment, medical concerns related to pain, rashes, cold symptoms. Less common health areas that are searched include: learning difficulties, independent living issues such as budgets/affording an apartment. Mandanello and Clayman reported findings from their secondary analysis of the Health Information National Trends Survey. The findings indicated differing skills and abilities among college students to use and understand health information. Specifically, the numeracy level indicated a statistically significant difference between the groups with those of lower numeracy more commonly reporting negative interactions with health providers including feeling less able to rely on their providers (65% vs. 86%, $p < 0.0001$) and less likely to say to their provider that they understand their provider (70% vs. 88%, $p = 0.0001$). Thus, the impact of numeracy on health information seeking and health provider communication suggests the need to evaluate the college students’ numeracy level. Gowen reported that college student health information seeking on the internet was influenced by the way the information was presented and the possible reduced validity of the information. Thus, little screening and still yet, a smaller amount of critical thinking has been reported in the health information internet searches. Gowen reported that college students search for mental health information was more commonly sought in areas of medications, diagnosis, treatment options, access to health care and supports and resources. In further analyses of college student’s motivations for seeking online health information, Gowen reports that seeking additional information, reducing isolation by connecting to the online community, lack of other resources and to prepare for an upcoming health visit were most commonly indicated by college students.

Thus, the issues of college students’ health knowledge are largely represented by college students Health information internet searches that represent both the quality of the website displaying Health Information and the College student user of internet sites for Health information that display highly verbal and numeric presentations of information that may not be understood by those using the site. With these issues a question emerges as to what college students Health Knowledge is when presented with validated, contemporary resources such as in a college course.

The current investigation examined the premise of college students’ health knowledge given the documentation of their reliance on online resources and the health risk behaviors associated with this group. It was hypothesized that college students level of health knowledge is poor and a small, significant increase would occur with educational instruction that has been validated as accurate (i.e., course materials, published peer reviewed textbook used the instruction).

Methods

Participants

Twenty participants from a small Midwestern college agreed to complete a questionnaire asking about several health conditions before and following a Health Psychology course. The students elected to be in the course, it was not required for their major. There were eleven females aged 19-24 years and nine males ages 19-23 years in the study. The students received course credit for an alternative assignment by participating in the study. The study was approved by the IRB and all students completed an informed consent.

Instruments

A 30 item true/false Health Knowledge Questionnaire was used in the study. Each item represented a major health finding. The students responded to each statement by selecting a true or false response. The Health Knowledge Questionnaire is published by Cengage press, correct responses are provided; there is no reporting of psychometric properties (norm group, reliability, validity) (Tables 1 and 2).

Procedure

A Case Control design was used to measure pre and post intervention Health Knowledge using the Health Knowledge questionnaire during the first week of class and during finals week. All twenty participant’s names were removed from the materials and a subject number was assigned to provide privacy and confidentiality. The twenty participants were members of a Health Psychology course with a total enrollment of 33 students. The course was taught in a traditional face to face manner meeting twice a week for lecture presentations and discussions. All students were required to complete three exams, a final exam and develop a health promotion project proposal in teams of 3-4 students that culminated into a presentation on the last class meeting day. The course intervention used a typical undergraduate Health psychology textbook (Cengage Publishers, Brannon, Feist and Upgraff authors) and pdf files of contemporary empirical articles that addressed common Health Psychology topics as supplemental reading.

Results

Each item response was treated as a separate variable and coded as correct or not. An overall score of the number correct was computed by a summation of the correct responses. The pre to posttest analysis was

Testing	Mean score correct (30 possible points)
Pre	17 (2.889)
Post	24 (3.427)

Table 1: Health knowledge questionnaire results, $t = 0.452^*$.

Pre and Post testing’s
United States Life expectancy
Reasons for increases in life expectancy
Smoking related death and cardiovascular disease
High and Low cholesterol age effects on health
At Post testing:
Alcohol and vehicle crashes
Low cholesterol levels and death rates
Most common areas of learning:
Alcohol and poor health risks
Heart disease prevalence in males
Direct and indirect cigarette smoke exposure and health

Table 2: Most frequently incorrect health knowledge questions.

computed using a paired t- test analysis of the overall score at pre and at post testing ($t=0.452$). The mean overall score at pretest was 17 correct ($SD=2.889$) and 24 ($SD=3.427$) at posttest. A percent correct overall for the group was calculated at pre and post testing, these values were 57% and 83%, respectively.

The participants were incorrect on the following statements at pre and post testings: United States Life Expectancy, Reasons for increases in Life Expectancy, Smoking related death and Cardiovascular disease, High and Low Cholesterol age effects on health. The most common incorrect responses at post testing were on items about Alcohol and Vehicle crashes and Low Cholesterol and Death rates. The most common areas of learning were in terms of items about Alcohol and poor health risks, Heart disease prevalence in males and Direct/Indirect cigarette smoke exposure and health.

Discussion

College students have an understanding of health information. College students need to have an understanding of Health information to balance their stressful lifestyle and prevent the development of risky behaviors that could lead to poor health. The hypothesis that college student Health Knowledge would increase as a result of a college course in Health Psychology was supported ($t=0.452$). Given the limitations of the design and sampling, this finding is to be held with caution. It is equally plausible that the participants in the study as a result of being in the course, independently sought Health Information and perhaps understood what they were reading more so as the time passed while being in the course. This factor was not measured. The comparisons of each participants scores at pre and post testing, individually did not yield a pattern by demographic level to overall score. However, the case control design limited the framework for comparisons and a between groups analysis with a control group for future studies in this area, which affords more meaningful comparisons should be used in future studies. Additionally, the design of the study using a measure with questions linked to the intervention materials (i.e., Textbook authors Health Knowledge questionnaire contained in the textbook) should be replaced with a psychometric measure with demonstrated reliability, validity, established norms. The instrument used in this study has a strength in terms of its congruence to the intervention materials presented but conclusions should be guarded given the limitation of an absence of psychometric properties of the measure.

The pre to post testing of Health Knowledge following a completion of a Health Psychology undergraduate course findings indicated an overall change of 17 correct responses of 30 possible at pretest, or 57% correct was compared to the average number correct at post testing, 25 correct of 30 possible point (83%). With an estimate that 25% of college students have intermediate literacy and 56% have intermediate numeracy, the findings in the study were higher than was expected [8]. Health Information instruction through a college course would yield elevated results both in terms of comprehension of information as well as retaining the information [12].

Our findings support that college students can broaden their health information knowledge with course work given that a full complement of topics in Health are studied as compared to preferred topics internet searches. The consistency of error on some of the questions from pre to post may reflect this intermediate level of proficiency, on average of college students [13]. The uplifting results that students' performed better at post testing on serious, severe conditions of alcohol risk behaviors and consequences, prevalence of heart disease and risks to health from cigarette smoking. These larger scale areas reflect morbidity

rates and a recognized understanding of these areas is associated with having a health perspective.

An implication of this reporting examination of college student health information suggest a need for an emphasis in teaching information literacy directly as part of formal academic course work. While the college student naturally seeks health information from internet sources, the efficacy of that practice has to be improved. Further, if adherence and types of interchanges with health providers are influenced by the college student's understanding of health information from the internet, modification and means to determine that level will need to be put into place in health care. For example, the common approach of Motivational Interviewing use by healthcare practitioners could be expanded to include an open ended question to the potential college student patient of what health information they know and how they obtain that information. With the myriad of challenges to health that the college student may encounter, adjustments to understanding how they know the information about their health or risk factors will improve their approaching a healthier lifestyle.

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