

The Longitudinal Impact of an Undergraduate General Education Wellness Course in Early Adulthood

Georgia N. Polacek, PhD CHES
General Education Cluster 5 Coordinator
Associate Professor, Health Sciences
James Madison University
971 Carrier Dr., MSC 1104
Harrisonburg, VA 22807
Telephone: 540-568-7097
Email: Polacegn@jmu.edu

T. Dary Erwin, PhD
Professor of Leadership Studies and Psychology
School of Strategic Leadership
James Madison University
1077 S. Main Drive MSC 1505
Harrisonburg, VA 22807
Telephone: 540-568-7020
Email: erwintd@jmu.edu

Jennifer G. Rau, M. Ed.
Research Assistant
School of Strategic Leadership
James Madison University
1077 S. Main Drive MSC 1505
Harrisonburg, VA 22807
Telephone: 540-568-7020
Email: raujg@jmu.edu

ABSTRACT

Purpose: *To examine the relationship of general education wellness coursework on wellness behavior and knowledge of students as undergraduates and again four years after graduation.* ***Methods:*** *Participants were 87 college students at a large, southeastern public university. Three administrations of the General Education Wellness Test were conducted with the same participants as freshmen, late sophomores, and as alumni four to five years beyond graduation, spanning nine years.* ***Results:*** *Wellness Behavior increased for participants between freshmen and late sophomore years. Wellness Knowledge increased for participants between freshmen and late sophomore years and again between late sophomore year and as alumni. These changes were the same whether the wellness course was taught from a kinesiology or personal health wellness perspective.* ***Conclusions:*** *This study found that wellness education offered in a general education curriculum has an impact on individuals' wellness; wellness knowledge was retained after graduation.* ***Recommendations:*** *General education wellness courses should be required as part of an undergraduate curriculum.*

INTRODUCTION

People who graduate from college have healthier lives than people who do not attend college. The reasons for this difference is not clear. The collegiate experience or the type of

individual who selects to attend college could provide the difference. Or health may be enhanced by a particular aspect of the collegiate experience or due to one's economic and family circumstances, risk factors of one's work, or access to medical care (Pascarella & Terenzini, 2005). While no one study can examine all aspects of what leads to healthier living, this study focuses on the impact of wellness courses taught within a general curriculum both during the academic career and after graduation.

Educational Attainment and Health

There is strong research evidence that adults who attend college have better health outcomes than those who do not (Furnee, Groot, & Van der Brink, 2008; Goesling, 2007; Link & Phelan, 1995; Pascarella & Ternezini, 2005; Reybold & Polacek, 2006; Ross & Mirowsky, 2010; Woolf, Johnson, Phillips, & Phillipsen, 2007). The Centers for Disease Control and Prevention [CDC] 2011 Annual Report states that "between 1996 and 2006, the gap in life expectancy at age 25 between those with less than a high school education and those with a bachelor's degree or higher education increased by 1.9 years for men and 2.8 years for women. On average in 2006, 25-year-old men without a high school diploma had a life expectancy 9.3 years less than those with a bachelor's degree or higher; women without a high school diploma had a life expectancy 8.6 years less than those with a bachelor's degree or higher." (p.25) These findings indicate that education does play a role in health outcomes. With increasing health care costs and the poor gains seen in some treatment outcomes, prevention programs are considered essential in addressing health outcomes (Woolf, 2008). It is logical to hypothesize that formal education can deliver a prevention program aimed particularly toward enhancing wellness lifestyles.

Colleges and universities have long been concerned about the health of their students. Campuses provide student health centers, offer recreation and exercise facilities, implement healthful advocacy policies (e.g. no smoking in buildings), and offer various health-related academic programs. These are available as options for students; participation is not required. In spite of these campus activities, Becker, Johnson, Vail-Smith, et al. (2008) reported many high-risk behaviors in respondents of the CDC National College Health Risk Behavior Survey. Further, the current American College Health Association National College Health Assessment (2011) [ACHA-NCHA] report showed a decreasing trend in wellness choices. This trend may have a subsequent increase in risk factors such as obesity or hypertension. Only a small number of studies have been published regarding wellness in higher education (Daracott & Daracott, 2009; Hulquist, Duckham, Stinson, & Thompson, 2009; Pearman & Valois, 1997). Daracott & Daracott (2009) and Hulquist et al. (2009) focused specifically on physical activity when a broader conceptualization of wellness is needed. Pearman & Vallois (1997) surveyed alumni health knowledge, attitudes, and behaviors. However, the Pearman and Valllis (1997) study could not attribute collegiate experiences to later life behavior A longitudinal design is a more powerful design (Pascarella, 2006) and provides a stronger basis for drawing conclusions linking curriculum to better health outcomes (Pascarella & Terenzini, 2005).

Wellness and the College Curriculum

Examining particular aspects of the college experience for their effectiveness in promoting better health lifestyles might provide guidance on what specific experiences could be implemented in higher education. Many current institutional health programs or policies depend on students' choices. Thus, it seems important to examine programs that are required curricula interventions of all undergraduates rather than programs that a subset of students self-select.
Undergraduate education is typically composed of general education courses that all students complete regardless of major (Gaff, 1983). While the curricula of general education differ from institution to institution, a wellness course, as a required component of general education (Kulinna, Warfield, Jonaitis, Dean, & Corbin, 2009), could reach all students. Such wellness courses generally include individual development in social, psychological, emotional, physical, and spiritual dimensions. Kulinna, Warfield, Jonaitis, Dean, and Corbin (2009) found that conceptually based wellness courses covering these dimensions were more likely to promote healthy behaviors in college students as they have the potential to ensure that students are provided the information (knowledge and skills) with which to make healthier choices (behavior). Additionally, the campus environment supports healthy behaviors through the exercise and dining facilities provided to students. By providing knowledge,

skills, and a supportive environment, healthful behaviors may be established. These behaviors may then persist throughout adulthood.

The American College Health Association's Healthy Campus 2010 established national college health objectives and created a framework for campuses to utilize in improving student health. The leading health indicators in these objectives were physical activity, overweight and obesity, tobacco use, substance abuse, responsible sexual behavior, mental health, injury and violence, environmental quality, immunization, and access to health care (American College Health Association, 2010). These health indicators are also the nation's biggest challenges in public health. ACHA's (2010) college health objectives included increasing the proportion of students who report receiving information on all of the leading health indicators. General education wellness courses are one option for institutions to address these national health objectives for all students at an institution.

In spite of the ACHA initiatives for better wellness nationally, the literature has a dearth of published wellness research in undergraduate education. Targeted programs such as binge drinking and physical activity do not address the broader concepts of wellness. In addition, such targeted programs address only a limited number of undergraduates when the need for wellness should be for all undergraduates. Even fewer of the published studies utilized a longitudinal design for studying curricula impact on health outcomes. What is particularly needed is longitudinal research to determine if wellness behaviors and knowledge are retained through the college years and continue after graduation.

PURPOSE

The current study provides a longitudinal approach to exploring the following questions: Does wellness behavior and/or knowledge change in the first two years of college with completion of a wellness course? Does one's wellness behavior and/or knowledge change between end of the sophomore year and after graduation? Do individuals differ in their wellness behavior and/or knowledge depending on the type of wellness course (General Health or General Kinesiology) they completed?

METHODS

Participants

Participants were students who had completed the General Education Wellness Test as first-semester freshmen in the fall of 2003 and as late sophomores (45-70 semester hours) in the spring of 2005. Originally, students were randomly selected from the freshmen class based on their student identification number. The participants were attending a moderately selective midsized institution in the mid-Atlantic area, where a general wellness course is required as part of their general education curriculum and required of all students. In the spring of 2012, participants, who are currently alumni of the institution, were contacted to complete the same General Education Wellness Test they took as students. Out of the 311 participants who completed the General Education Wellness Test as freshmen and late sophomores, 87 completed the instrument a third time as alumni, four to five years beyond graduation.

To fulfill the institution's wellness component of general education program, students had a choice of either a course in General Wellness or General Kinesiology. This study explored whether there was a difference between scores on the General Education Wellness Test depending on the type of wellness course students completed, General Wellness or General Kinesiology.

Instrument

The General Education Wellness Test was adapted from CDC's Youth Risk Behavior Surveillance System for the college student population. The two subscales of the instrument were (a) a Wellness Behaviors Subscale and (b) a Wellness Knowledge Subscale initially consisting of 15 and 34 items. On the Behaviors Subscale, respondents were asked to identify how often they participated in health- and wellness-related activities. For example, The Knowledge Subscale consisted of health and wellness related- statements for which participants were asked if the statement was true or false. Through traditional item analysis using classical test score theory, three test items from the Behavior Subscale and seven items from the Knowledge Subscale were removed based on low item-total correlations ($r < .2$) to increase the reliability of the instrument. Using Cronbach's alpha coefficient of internal

consistency, the reliabilities for each administration by subscale were calculated to be .58 for freshmen scores, .64 for late sophomores scores, and .68 for alumni scores on the Behavior Subscale and .64 for freshmen scores, .62 for late sophomore scores, and .59 for alumni scores on the Knowledge Subscale. These reliability estimates are deemed acceptable for research purposes.

General Education Wellness Courses

Each participant completed three credit hours of a general education wellness course, either General Wellness or General Kinesiology. These courses connect health-related behaviors, self-care, and individual decisions with health and influence dimensions of wellness. Courses in Wellness and Kinesiology examine the dimensions of health and wellness and follow the ACHA wellness objectives. An emphasis is placed on the components that influence health and wellness, particularly individual behaviors. Students participate in self-assessments that provide information about their health and wellness behaviors and their overall health status. In addition, students learn strategies designed to improve lifetime health and wellness. General Wellness emphasizes lifestyle behaviors contributing to health promotion and disease prevention, include a physical wellness component, and require students to attend wellness-related events and activities. The General Kinesiology courses follow the same requirements as the General Wellness courses; however, the Kinesiology courses are specific to an activity which students select, such as jogging or strength training. General Kinesiology is designed to help students adopt and maintain behaviors associated with, and learn the importance of, an active and healthy lifestyle. Both courses have conceptual objectives rather than specific content oriented-objectives and address leading health indicators.

Procedure

As indicated earlier, this study consisted of three administrations of the General Education Wellness Test with the same participants as freshmen, late sophomores, and as alumni four to five years beyond graduation, spanning nine years. Alumni contact information for the freshmen-late sophomore cohort was obtained from institutional records. A total of 311 questionnaires were sent, 215 via email using an online survey tool, and 96 via postal mail depending on the type of contact information preferred by the individual. For participants who did not respond to the email inquiry, the General Education Wellness Test was also sent via postal mail if a postal address was available. Of the 87 respondents from the third administration of the General Education Wellness Test, 46 responded via online survey and 51 via postal mail, yielding a 28% (87 of 311) response rate. There were 59 (67.8%) male respondents and 28 (32.2%) female respondents. More participants had completed General Wellness than General Kinesiology, with 54 and 33 respectively. Prior to any data collection, approval from the university Institutional Review Board was obtained. Participants were made aware of the content of the study, and participation was completely voluntary. The consent information also included participants' acknowledgement that the General Education Wellness Test scores from the alumni would be compared to their previous scores collected at the time they were students. The type of general education wellness course, General Wellness or General Kinesiology, was collected from the institutional records.

RESULTS

A repeated measures 2x2 MANOVA was conducted to examine whether differences over time or the type of wellness course a student completed, General Wellness or General Kinesiology, had an effect on wellness behavior and knowledge. The means for each group at the three time points (Class/Alumni Status) are included in Table 1. The means of each group increased over time in wellness behavior and knowledge. Multivariate normality was assumed as skewness and kurtosis fell within the normal range. Mauchly's test indicated that the assumption of sphericity had been violated for Behavior Subscores, $\chi^2 = .81$, $p < .01$. Therefore the degrees of freedom were adjusted using the Huynh-Feldt estimates of sphericity ($\varepsilon = .865$) for behavior. Mauchly's test for Knowledge Subscores indicated the assumption of sphericity was $\chi^2 = .98$, $p = .411$.

Table 2 contains the summary of the MANOVA results. There was no interaction between class/alumni status of participants and course type, $\Lambda = .98$, F (4, 83) = .51, $p = .729$. The type of course taken as part of the general education requirement, General Wellness or General Kinesiology, had no effect on scores, $\Lambda = .97$, F (2, 83) = 1.49, $p = .323$. There was a

main effect of the class/alumni status of the participants on their Behavior and Knowledge Subscores, Λ=.46, F (4, 83) = 23.65, p =.001. Therefore a post-hoc follow up test was conducted. See Table 3 for the ANOVA follow up to determine whether the main effect of class/alumni status was different on the Behavior Subscale or Knowledge Subscale or both subscales.

Scheffe post-hoc tests were conducted on both Behavior and Knowledge subscores to examine the differences by Class/Alumni Status, to see where they improved over time (see Table 4). Students improved their Wellness Behaviors between the beginning of their freshman year (M = 29.03, SD = 4.50) and their late sophomore year (M = 31.69, SD = 4.60). There was no change in Wellness Behavior for participants between late sophomore year and as alumni (M = 32.40, SD = 5.05). Wellness Knowledge subscores increased between each time interval. Students increased their knowledge of wellness as freshmen (M = 18.73, SD = 3.47), to late sophomores (M = 20.26, SD = 3.01), and again as alumni (M = 22.02, SD = 2.56). See Figure 1 for the illustration of the main effect, as there is a continual positive slope across Class/Alumni Status.

CONCLUSIONS

Concern about healthy lifestyles is a well recognized societal issue. How to address this issue is something that confronts all public health educators. Higher education has the potential to affect later health outcomes, but current collegiate programming reaches only a subset of undergraduates. General education, however, has the potential to influence the overall health of all undergraduate students.

This study contributes to the literature because it examines the lasting impact of a general education wellness courses required for all students followed over a nine year period. The instrument used in the study was based on a test from the CDC (National Center for Health Statistics, 2012). Furthermore, it employed a longitudinal design spanning nine years from freshmen to four to five year alumni. The findings show there was no difference on Behavior or Knowledge subscores between the general education wellness courses (General Wellness and General Kinesiology). There was an increase in Wellness Behavior from the freshmen to late sophomores. Wellness Knowledge increased from freshmen to late sophomore and from late sophomores to alumni.

General education is one approach to infuse wellness into the curriculum; however, other approaches should be studied. A wellness course, regardless of General Wellness or General Kinesiology increased participants' Wellness Behaviors and Knowledge. These findings support the current body of research linking college attendance to overall personal health (Pascarella & Terenzini, 2005; Furnée, Groot & Van der Brink, 2008; Goesling, 2007; Link & Phelan, 1995;; Reybold & Polacek, 2006; Ross & Mirowsky, 2010; Woolf, Johnson, Phillips & Phillipsen, 2007). .

Limitations

As with any study, there are a few limitations in the current study. First, there was not a group of non-college students used as a comparison group to the college student participants. Participants selecting to attend college may likely have different characteristics than individuals who do not proceed beyond high school. Second, this study involved only one institution but has the potential to be replicated at other universities. Third, this study focused on wellness in general education and used CDC's work in the criteria survey. Other studies could include other interventions or use other conceptualizations than the CDC's in measuring wellness knowledge and behavior. For instance, our survey was self-reported and more direct behavioral measures might produce other results.

Recommendations

As evidenced in this study, a viable approach to better personal wellness is a curriculum intervention through a general education course. Requiring all students, not just those with health related majors, to complete a general wellness course, aligns with the ACHA's national college health objectives. Our findings support wellness behaviors and knowledge as lasting outcomes that can increase during collegiate years and beyond the college years into citizenship. Furthermore, wellness behavior is specifically retained after college, and wellness knowledge continues to increase even after graduation.

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Table 1. Means for Wellness Behavior and Knowledge by Wellness Course

	N	Means		
		Freshmen	Late Sophomores	Alumni
Behavior Subscores				
General Wellness	54	29.50	31.59	32.92
General Kinesiology	33	28.08	31.91	31.60
Overall Behavior	87	28.97	31.71	32.42
Knowledge Subscores				
General Wellness	54	18.92	20.39	22.13
General Kinesiology	33	18.42	20.12	21.85
Overall Knowledge	87	18.73	20.29	22.02

Table 2. Repeated Measures Multiple Analysis of Variance

	Wilks' Lambda	*Df*	F	p
Class/Alumni Status	.46	4	23.65	<.001
Course	.97	2	1.49	.323
Class/Alumni Status*Course	.98	4	.51	.729

Table 3. Main Effect of Class/Alumni Status on Wellness Subscores

	MS	*Df*	F	p
Class/Alumni Status				
Behavior	329.95	1.68	10.82	<.001
Knowledge	231.24	1.96	34.89	<.001

Table 4. Differences in Class/Alumni Status by Subscores

Effect of Class/Alumni Status	*MS*	*Df*	F	α
Behavior				
Freshmen vs. Late Sophomores	697.87	1	10.76	.002
Late Sophomores vs. Alumni	18.78	1	.65	.423
Knowledge				
Freshmen vs. Late Sophomores	202.65	1	13.861	<.001
Late Sophomores vs. Alumni	251.10	1	22.13	<.001

Figure 1. Comparison of Behavior and Knowledge Subscores by Class/Alumni Status