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A qualitative assessment of college-students' functional health literacy: a case-study at Syracuse University

A Capstone Project Submitted in Partial Fulfillment of the Requirements of the
Renée Crown University Honors Program at Syracuse University

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ABSTRACT

This case study of Syracuse University's health promotion and student health behavior provides data that may be employed to understand and influence future, functional health literacy. Key components of functional health literacy—self efficacy, independence, institutional services, social influences, gender, etc.—rise to the surface, and are the focus of this analysis. This study was approved by the University's Institutional Review Board for the Fall 2008 term, and received funding through the Crown Wise Scholarship. The research subjects include a convenience sample of 26 full-time, college seniors. The subjects were divided into four focus groups to provide qualitative data on 21 topics that address students' decision-making specific to physical activity and nutrition. Results from this study strive to use findings to help educators and administrators better develop successful campus health promotion programs. The report offers a resource for planning future strategies and programs by: involving people in planning, incorporating data analysis, and assessing factors that affect implementation. Recommendations include targeting information on gender and age, evaluating feedback mechanisms, using social framing, measures specific to institutions, a strategy for using campus resources, and a call for self-produced student materials. Discussed strategies can be expanded beyond the Community Readiness Model, instead using more precise theories to implement future programs and plans. Colleges and universities can use similar methods to analyze student functional health literacy and improve campus community health promotion readiness.

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INTRODUCTION

Authors often ask readers to reflect, react, understand, remember, or simply enjoy a well-written work. This report takes the rare position, and asks instead for action. The author uses the following pages not only to comment, report, and suggest, but to provide practical information for future strategies. Although no war cry, and limited by the syntax of an academic work, this case study of Syracuse University's health promotion and student health behavior provides data that may be employed to understand and influence future, functional health literacy.

Widespread and cross-functional government review has identified health literacy as a critical component for future health promotion efforts. The focus has sparked large-scale effort to define, analyze and report on health literacy with the full resources of a government desperate to reverse negative health trends. Defined by the National Institute of Medicine as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions, health literacy has become a catch phrase throughout many academic circles.¹ Even the former U.S. Surgeon General Richard Carmona joined the bandwagon, explaining that:

“Health literacy is the currency of success for everything that we do in primary and preventive medicine. Health literacy can save lives, save money, and improve the health and well-being of millions of Americans. All of us—government, academia, health care professionals, corporations, communities, and consumers—working together can bridge the gap

¹ Institute of Medicine. (2004). *Health Literacy: A Prescription to End Confusion*. Washington, DC: National Academic Press.

between what health professionals know and what patients understand, and thereby improve the health of all Americans.²”

Improving health is a worthy end-goal, but academics often find themselves grounded in abstract theory of health literacy, while a focus on functional health literacy may prove more salient in obtaining health decisions and behaviors that meet government goals.

While traditional definitions focus on health literacy as a review of necessary skills, functional health literacy is concerned with the direct contact populations have with health information; how it is found, used, shared, etc. Discovering health decisions and behaviors as a process that requires health literacy is inherently multi-dimensional and spans a wide spectrum of academic dimensions. However, key components of functional literacy rise to the surface, and are the focus of this analysis. Self-efficacy concerns, independence, institutional services/facilities, social influences, gender, and leading health indicators are each addressed.

Although acknowledging the many paths a discussion of functional health literacy can take, it remains equally important for health literacy and communication discussion to be grounded in an appropriate, theoretical framework. While increasingly independent, college students are still heavily influenced by their environment. Acculturation to a campus community and lifestyle includes the access, use and availability of community programs. Hence, the Community Readiness Model (CRM), a stage-theory developed to understand

² Dept. of Health and Human Services. (2007). *Health Literacy in America: The Role of Health Care Professionals*. Washington, DC: U.S. Government Printing Office.

dynamics in community planning and development regarding health topics, is an appropriate framework when evaluating functional health literacy on the Syracuse University campus.³ The CRM focuses on using key informant interviews to define a community's stages and goals, and provide strategies⁴. This report conducts the necessary interviews to provide discussion and recommendations that develop future strategies for community actions with an ultimate goal to improve functional health literacy.

RESEARCH PRIORITIES

Health allows people to live longer, higher quality lives. Fortunately, today's scholars and individuals have access to an unprecedented amount of health related content and advice that aims to promote healthy living. From reality television to online disease support groups, the information surge is paralleled by a push for continued, individual independence in the health landscape. The National Institute of Health (NIH) asserts that understanding our consumption of information is especially critical as individuals are commonly assuming new responsibilities and health decision-making roles in the evolving, self-managed health care system.⁵ However, the NIH acknowledges that they are uncertain of Americans' ability to adequately traverse the cultural, social, and scientific influences that impact personal health decisions.

³ The CRM is defined by nine stages that each describes a community's readiness to address health or other social issues: no awareness, denial, vague awareness, preplanning, preparation, initiation, stabilization, confirmation/expansion, and professionalism. See McKenzie, J., Neiger, B., & Thackeray, R. (2009). *Planning, Implementing, & Evaluating Health Promotion Programs* (5th ed.). New York: Pearson, especially chapter seven.

⁴ McKenzie et al. 2009, p. 195.

⁵ Institute of Medicine, 2004.

More than 1.7 million Americans die of a chronic disease each year, accounting for \$1.05 trillion spent on yearly healthcare expenses.⁶ Certainly, death is only an end-note for the 125 million that live with chronic conditions that affect the quality of their livelihoods.⁷ Living with illness contributes to a majority of health-related expenses (30%) being accrued in the last year of life when quality of health is the poorest.⁸ College students are no exception to poor health trends. A majority of college students (85%) do not meet physical activity guidelines, and high risk health behaviors are a self-reported staple of college living.⁹ This combination of factors resulted in *Healthy People 2010* developing targeted objectives for postsecondary educational institutions as a critical setting for addressing young adult health promotion.¹⁰

Attempting to understand the gap between our advanced level of health knowledge and the nation's substandard health behaviors and outcomes has spurred large-scale government, academic and private-sector action with a primary aim to promote health. Many of their publications and programs share common limitations to their effectiveness. First, the nature of quantitative research focuses on single factors of causality, and does not fully capture the complex biological, psychological, social, and spiritual factors that influence

⁶ Dept. of Health and Human Services. (2000). *Healthy People 2010: Understanding and Improving Health* (2nd ed.). Washington, DC: U.S. Government Printing Office.

⁷ Healthy People, 2000, p. 6.

⁸ Hoover, D. R., Crystal, S., Kumar, R., Sambamoorthi, U., & Cantor, J.C. (2002). Medical expenditures during the last year of life: findings from the 1992-1996 Medicare Current Beneficiary Survey – Cost of Care [Electronic version]. *Health Services Research*. Retrieved April 11, 2009, from http://findarticles.com/p/articles/mi_m4149/is_6_37/ai_97177049/

⁹ Healthy People, 2000, p. 7-8.

¹⁰ Healthy People 2010 is a government-wide program that identifies two goals—increase the quality and years of healthy life and decrease the disparity in health—and 467 specific objectives to measure health and well-being promotion across the nation. (Healthy People, 2000).

personal health choices. The NIH recommends a requirement for changing future practice and improving policies based on research that attempts to understand causal relationships between social and cultural systems of health literacy.¹¹ Similarly, the United States Surgeon General promotes using population-based status, needs, and abilities as a critical indicator for future, evidence-based practice.¹² Second, focus is often allotted on a need or impact driven priority, resulting in a spotlight on school-aged children and elderly populations. These needs are more aligned with what proves politically salient than actual health priorities. Children are highlighted as they are accessible through public schools and are at a unique stage to potentially form habits that will influence health decisions later. The elderly receive special attention as this demographic includes high proportions of diagnosed health problems and has a large economic impact through healthcare costs. Both children and the elderly are often mirrored by a focus on adversely affected population subgroups that often include racial and economic class concerns.

The analysis of this study avoids these common limitations by instead conducting qualitative, exploratory research that focuses on college students. The United States Department of Education estimates that the nation's 4,200 colleges and universities service a total 17.5 million students.¹³ The college demographic represents approximately 6% of the U.S. population and captures the accessibility of school K-12 aged populations with the prevention and diagnosis of older

¹¹ Institute of Medicine, 2004, p. 15.

¹² Healthy People, 2000, p. 15.

¹³ American College Health Association. (2008). National College Health Assessment Spring 2007 Reference Group Data Report. *Journal of American College Health*, 56, 5.

demographics. Understanding the rationale for this focus, Luquis, Garcia and Ashford performed a similar study, using seven focus groups to understand college-student health behavior in relation to alcohol, other drug use and sexual activity.¹⁴ The authors' research concludes that:

“Health clinics at the postsecondary level can help empower students to take responsibility for their own health through education, prevention, early detection, and treatment. In addition, colleges and universities can play an important role in eliminating racial and ethnic disparities and other inequalities in health outcomes by influencing how people think about these issues and providing a place where opinions and behaviors contributing to these factors can be addressed.”¹⁵

Certainly, such widespread implications demand further work and research efforts that aim to promote college and university administrators' ability to promote well-being of students.

BACKGROUND

Physical activity (exercise) and diet (nutrition) were chosen as two of the ten leading health indicators recognized by the federal government's *Healthy People 2010* report. The two indicators serve as good discussion for this research as they are uniquely influenced by individual choice and behavior. They include predicted gender differences, and are primary components of healthy living.¹⁶

¹⁴ Luquis, R., Garcia, E., & Ashford, D. (2003). A qualitative assessment of college students' perceptions of health behaviors [Electronic version]. *American Journal of Health Studies*. Spring-Summer. Retrieved Mar. 29, 2009, from http://findarticles.com/p/articles/mi_m0CTG/is_2-3_18/ai_108194974/

¹⁵ Luquis et al., 2003.

¹⁶ Gruber, K. (2008, Sept. 22). Social support for exercise and dietary habits among college students [Electronic version]. *Adolescence*. Retrieved Mar. 29, 2009, from http://www.accessmylibrary.com/coms2/summary_0286-35987537_ITM. Gender differences are discussed in relation to social support and influencing behavior of families, friends, and how referent groups with different female/male ratios influence behaviors. The author notes significant academic work has already explored variance between male and female health behaviors.

Both physical activity and nutrition are essential for growth, development, and overall health; both are considered factors to maintain a healthy body, enhance psychological well-being, and prevent premature death.¹⁷ According to the National Center for Health Statistics, dietary factors influence four of the ten leading causes of death: coronary heart disease, cancers, stroke, and type two diabetes.¹⁸ Similarly, physical activity can reduce risks for heart disease, diabetes, some cancers, and is significant in improving quality of life concerns resulting from chemical and muscular aging.¹⁹ The importance of nutrition and physical activity may be summarized by the U.S. Department of Agriculture which published that, “Many Americans can dramatically improve their overall health by making modest improvements to their diets and by incorporating regular physical activity into their daily lives.”²⁰

Exercise and diet are important not only as single entities, but are highly interrelated in providing positive health outcomes. Improving activity and nutrition trends demands interagency collaborations to recommend and monitor *Dietary Guidelines for Americans*; which encourages consuming fruits, vegetables, whole grains and calcium-rich foods while limiting saturated fats and staying within the limits of daily calorie needs. Guidelines further articulate that adults should be active, getting a minimum of thirty minutes of moderate physical

¹⁷ Healthy People, 2000. *See also* Primary Health Indicators *id.*

¹⁸ *See also* Healthy People, 2000, *Nutrition and Overweight*, Section 19. The report also notes a lack of nutrition raises the risk of illness from high blood pressure, high cholesterol, stroke, gallbladder disease, arthritis, sleep disturbances, and associated weight problems may cause social stigmatization, discrimination, and lowered self-esteem.

¹⁹ *See also* Healthy People, 2000, *Physical Activity and Fitness*, Section 22.

²⁰ Dept. of Agriculture. (2009). *Johanns Reveals USDA's Steps to a Healthier You*. Washington, DC: Press Release.

activity each day.²¹ A recent focus on America's obesity epidemic, along with other factors that include individual time-constraints, has shifted focus toward controlling nutrition, and results in *Healthy People 2010* reporting that while 44% of adults maintain a healthy diet, only 21% receive an appropriate level of physical activity.²²

Reviewing a college student's individual independence to make health choices and uncover relevant information is an equally complex task. The *Information and Health Survey* provides detailed information on college student's self-reported sources for health information, but understanding the process of gaining independence from living at home to on a college campus remains critical.²³ Control as a part of functional health literacy is increasingly important as theories for health communication and advancement rely on underlying assumptions that target populations maintain a certain degree of self-efficacy.²⁴ Understanding college students' perception of their independence, control, and process for making exercise and diet decisions may better allow health promotion at colleges and universities, but also highlights the need for more systematic focus on the nation's young adults. Although college-students may be segmented along multiple lines that can include numerous subgroups, they are generally described as adolescents (above 18 years old), or young adults (below the age of 25).²⁵

²¹ Dept. of Agriculture, 2009.

²² Healthy People, 2000.

²³ The survey reached responding students once as freshman, and four years later as seniors. The 12 question survey includes multiple response inquires to identify students' sources for health information, frequency of health-related activities, and demographic information, etc.

²⁴ Witte, K., Meyer, G., & Martell, D. (2001). *Effective Health Risk Messages*. London: Sage Publications.

²⁵ McKenzie et al., 2009, p. 293.

METHODS

To further the call for efforts to promote college-student health, this analysis employs focus groups to comment on a students' functional health literacy. Although findings are limited to those issues discussed and valued by respondents, primary topics are relevant to understanding student health behaviors and decision shaping influences. Hence, issues of independence and control, social pressures, institutional resources and a focus on gender and age factors related to health decisions take center stage. The study also provides valuable, descriptive exposition to the *Information and Health Survey* conducted by Syracuse University in 2005 and 2008. Discussing health information allows the creation of a proposed model for seeking health advice, and this analysis provides insight on the transition college students undertake to gain independence from parents and the family doctor, how the independence is gained, and how new sources of information are chosen. This study's qualitative data is further used to evaluate independence and decision-making specific to physical activity and nutrition. Using gender difference and a hypothesized divergence between male and female nutrition and physical activity standards, this study assesses potential factors that influence a students' health decision-making process. Gender as a critical factor in targeted health promotion has been supported in many publications, and gender differences widely documented. Finally, content analysis is used to identify common responses across groups, and develop proposed findings.

The report avoids limitations of previous works by focusing on college-aged young adults and relying on qualitative research. Although college-aged populations are underrepresented in most research, they are the target demographic for this study, and the campus setting provides a research structure with direct control measures for personal health decisions and outcomes. School-aged children have less control over personal health decisions because guardians control their diets and access to a healthy lifestyle, and the elderly remain limited by comparatively lower adaptability to changing technology and the projection of decision-making power to medical professionals that manage their health.²⁶ Conversely, college-aged young adults have more direct control as they make health decisions. Hence, the factors they depend on for information become increasingly important, and understanding the level of independence key to shaping future health promotion strategies. Qualitative data is beneficial as focus groups provide a large amount of data in the respondents' words, and allow for deeper levels of meaning through group connections.²⁷ Luquis provides both empirical and academic support for focus groups as a valuable tool for health education, promotion, and needs assessment.²⁸

The recommendations that follow this report's findings provide health promoters support by fulfilling key requirements proposed by McKenzie, Neiger and Thakeray.²⁹ Whereas the *Information and Health Survey* provides collected health-related data, this report offers a resource for planning future strategies and

²⁶ Institute of Medicine, 2004, p. 83.

²⁷ Stewart, D., Shamdasani, P., & Rook, D. (2006). *Focus Groups: Theory and Practice* (2nd ed.). London: Sage Publications.

²⁸ Luquis et al., 2009.

²⁹ McKenzie et al., 2009, p. 189.

programs by: involving people in planning, incorporating data analysis, and assessing factors that affect implementation.³⁰ Discussion and recommendations will be presented to Syracuse University Recreation Services, Food Services and Health Services, and allow program administrators to take the final step and use data to improve and expand current efforts.

PARTICIPANTS

A convenience sample of full-time, college seniors was developed through email recruitment on classroom listservs and faculty announcements in senior classrooms across the Syracuse campus. The university Institutional Review Board approved the study for the Fall 2008 academic term, and the Crown Wise Scholarship was used in conjunction with the honors program for funding. A total of 26 senior students participated in four focus groups. The sample was highly female proportioned (n= 17, males n= 9), although the effects limited as groups were separated by gender to address perceived differences in female and male diet and exercise choices. The students were all 21 years old with two outliers at age 22 and 27. Ethnic and racial diversity was minimal with very high proportions of White (n=23); also represented were Hispanic (n=1), African American (n=1), and “other” (n=1). Respondents reported that they were in good health as a majority claimed “average health” (n=16), a handful claimed “above average health” (n=10), and none claimed “below average health” (n=0).³¹ Respondents

³⁰ McKenzie et al., 2009, p. 287.

³¹ Representing 61.5% as declared “good health,” these findings are supported by national statistics as ACHA Fall 2007 Reference Group found 57.7% self-reported good or excellent health (ACHA, 2008).

were limited to students with senior standing for discussion that reflects a full college career, and allows discussion of transitioning not only to college, but throughout.

EXECUTION

Twenty-one research questions were developed to maintain an approximate 1.5 hour timeline for each of the four focus groups.³² The groups, two male and two female, were both proctored from the question-set. Questions were drafted after reviewing topical literature, discussing primary research areas with campus health and wellness faculty, brainstorming topics with a graduate student assistant, and analyzing question formats presented by Stewart, Shamdasani, and Rook.³³ A final draft was edited with comments from a research Faculty Adviser, and approved for use by a review board.

Female and male groups were conducted simultaneously by two moderators. The research author served as male moderator, and a female graduate assistant moderated female groups to decrease social stigma from revealing information to the opposite gender.³⁴ Moderators met before conducting the groups to calibrate necessary questions, prioritize information, and ensure research guidelines were met. Held in the communication school's focus group rooms, the sessions concluded with a short, written survey to address

³² Questions may be reviewed in Appendix D: *Focus Group Questionnaire*. Groups included female respondents of 9 and 8, and two male groups consisted of 5 and 3 respectively.

³³ Stewart et al., 2006.

³⁴ F. Chew, Syracuse University Public Communications professor, personal communication, March 15, 2009.

demographic information.³⁵ Each group was taped to allow the author to transcribe; reducing the potential for author bias.

In addition to four focus groups, three personal interviews were conducted to accurately represent Syracuse University programs and institutions related to topics addressed by student respondents. Ruth Sullivan, MEd, RD is the university's Registered Dietician and has worked for Food Services for the past two and half years. Sullivan discusses information relevant to Food Services, nutrition planning, and related student concerns.³⁶ Joseph Lore, Director of Syracuse University Department of Recreation Services, oversees the University's \$1.3 million recreation budget that includes responsibility for campus fitness centers and their operations.³⁷ Finally, James R. Jacobs, M.D., Ph.D., FACEP has served as the Director of Syracuse University Health Services for the past five and a half years and explains policies, efforts and challenges faced by the campus' medical care center.³⁸

Upon review, respondent quotations were organized into three primary categories based on content: campus Health Services, health capacity, and diet versus exercise as a component of healthy living. Medical service topics were addressed to measure usage, appropriateness, and choice factors that influence a student's interaction with Syracuse University Health Services. Health capacity addresses student responsibility and capabilities for living healthy and improving community health. Finally, diet and exercise were discussed to determine

³⁵ Questions may be reviewed in Appendix E *Written Survey Questions*.

³⁶ R. Sullivan, personal communication, February 4, 2009.

³⁷ J. Lore, personal communication, January 27, 2009.

³⁸ J. Jacobs, personal communication, February 6, 2009.

potential gender differences in prioritizing, motivating and influencing health behaviors.

FINDINGS

Campus Health Services

Although all respondents have used campus Health Services, usage rates decrease with age. In fact, no males had visited Health Services in the past semester, yet females generally use the service more often and more recently (a few respondents reported use in the past semester). Usage spanned a wide spectrum of services including common colds, physical injuries, chronic illness, prescription refills, feminine care, etc.³⁹

Regarding service, all respondents also cited potential problems. One student claimed, “Some of the experiences are really spectacular, and others are just awful.” “I have heard horror stories, but I really haven’t seen them,” another stated. Overall, a slightly negative perception persists, and emanates from a common view that, “I’ve heard stories from other people that they misdiagnose things and students have had a lot of problems.” In general, females held a more positive perception of Health Services ability to help students. A common perception was summarized by a student who cited stories of misdiagnosis, and that “Health Services are good at dealing with the college stuff... if you have a cold they can probably help you, but anything else and not really.” Primary

³⁹ Health Services reports primary student usage stemming from upper respiratory problems—colds, flu, infections, etc.—and women’s health issues that include routine gynecological care (J. Jacobs, personal communication, February 6, 2009).

concerns include misdiagnosis, treating symptoms rather than problems, and confidentiality.

Although all respondents are quick to discuss rumored misdiagnosis, only two admit experiencing a problem.⁴⁰ Treating symptom issues involved a general feeling that Health Services remains ill-equipped to handle serious health problems, that the service uses a ‘one-size-fits-all’ diagnosis, and that outcomes often end with referrals that students are not able to follow-through with. A student felt that, “every time I’ve gone in there for something serious it has ended in a referral to another doctor.”⁴¹ Confidentiality was a concern only generated from female respondents, who claimed the probability of seeing friends or acquaintances while waiting deterred from using Health Services.⁴² Finally, although service is important to reception of medical care, students also generated discussion beyond service concerns. “In the end I’m not really bothered with service, more with relationship,” one student said. The low level of personable service, a factor that may also influence the “one-size-fits all” mentality was

⁴⁰ The Director of Health Services is James R. Jacobs, M.D., Ph.D., FACEP. Jacobs explains that perceptions of misdiagnosis are a reality of university and campus Health Service organizations. First, Jacobs explains that common cold medicine is still “as much an art as it is a science. Even in 2009 we still cannot say if a cold is caused by a virus. But, we do everything we can.” Specific to campus services, Jacobs comments that “part of the problem with college health is that you wake up with a sore throat and demand to be seen. The problem is it’s too early for any tests to be positive.” Instead, many students go home or to another medical setting a few days after using Health Services and “in general, whoever sees you second is always smarter,” Jacobs said (personal communication, February 6, 2009).

⁴¹ Jacobs claims Health Services is not equipped to follow-up on each referral, but that some referrals are followed-up on depending on the what, who, and other circumstance particulars. It is also noted that referrals are often specifically requested by students, and Jacobs provides acne problems as one example of students that seek referrals as they require a dermatologist (personal communication, February 6, 2009).

⁴² Jacobs points to Health Services new administrative ability to be 100% full with no one in the waiting room, which decreases the chance of meeting someone a student knows. However, Jacobs admits confidentiality at the pharmacy is a significant concern that must be addressed. “We have one big window, we are constrained as we don’t have unlimited space and money,” Jacobs said (personal communication, February 6, 2009).

described by one student as, “a big issue is that they give you a goody bag with some Advil and cough drops and say ‘get better soon.’” The quality of interaction with Health Service personnel was mixed. “They seem nice but I’m not sure about their experience. I know people who’ve been misdiagnosed and them doing tests and stuff wrong,” a student explained. “I think they just have fewer resources and budget to be as good as a regular doctor’s office.”

In general, respondents take a significant period of time to seek professional care. A common standard for seeking care was lack of improvement after attempting “other methods” of care. Students cited multiple methods that substitute for seeking professional help from Health Services or another source. Multiple studies, including the *Information and Health Survey*, have provided quantitative evidence for a college student’s source of health information and behavior forming influences. The American College Health Association conducted a health assessment in 2007 to provide a picture of what sources the 455,732 surveyed students use for health information⁴³. Results, summarized in Figure 1, provide a description of what sources students utilized, and the degree of trust they assigned each source⁴⁴. Although the study shows the highest use of parents and the internet and most trust assigned to friends and campus health service facilities, this research provides context to the process of gaining health information. In fact, both male and female students reported decision-making as a process, and not using a single source as a one-stop answer. A general model for all students interviewed starts with online research, followed by parental and peer

⁴³ ACHA, 2008.

⁴⁴ ACHA, 2008. See also Figure 1: Health Assessment, p. 49.

guidance, and finished with the ultimate decision, behavior, or choice to seek help from Health Services or a family doctor.⁴⁵ The process is illustrated in Figure 2, and can improve how future programs relate to students' decision making process. One student explained, "I check out WebMD for self-diagnosis. If it's something serious I call my parents, otherwise I try to just get some cold medicine or something from the local pharmacy."

Concerning online research, students use WebMD.⁴⁶ Few are aware of any WebMD alternatives, and there was limited use of other sources like Wikipedia to find general information, and Menshealth.com or bodybuilding.com to find specific information regarding diet or exercise. WebMD is most often used to confirm information before talking with friends and parents, or using self-care techniques like reading labels at a local pharmacy. Students were more likely to consult online resources as the seriousness of the health concern increases, using the resource to gain a level of comfort before seeking care. A student explained that, "If I'm really, really worried about something I'd check it online first to get comfort before calling the doctor." WebMD is preferred over calling a doctor because it is, "convenient, you can look real quick and cross-

⁴⁵ See also Figure 2: Health Choice Model, p. 50.

⁴⁶ A lack of WebMD alternatives was persistent across groups. Although the website is generally a trusted source of information, the author notes that a Google search for "alternatives to WebMD" derives numerous WebMD articles as top matches. A single source, especially for health information, concerns some academics as the site is advertiser supported and represents only one opinion once the editorial board concludes what current science to represent as medical truth. In fact, alternatives like Medicinenet.com and Healthline.com do exist, but receive limited use. Whereas WebMD receives an estimated 19.8 million monthly viewers—59% female and 33.3% 18 to 34 years old—Healthline averages only 2.9 million hits each month. Both Medicinenet and Healthline also have higher usage rates among women, but primary users are much older—33% 50 years and older, compared to WebMD's viewers (Quantcast, 2009).

reference it in your own home. It seems fairly accurate with links to other resources.”

After online research, students rely on parents or friends as an alternative to advise what to do next: self-medicate, seek professional care, await further problems, etc. Both males and females rely on Mom over Dad, and all recognize parents as a trusted source of general advice, but not specific information for guiding future behavior. Friends are used based on knowledge gained from sharing similar experiences. “A lot of us feed off knowledge from each other a lot of the time,” one respondent said. Another claimed that, “people are talking with each other and learning from people that have figured it out more than they have.”

Using the model ends with a decision to act, or seek professional advice from Health Services or a family doctor. Family doctors provide a source of trusted service for college students. Although some claimed they did not have a ‘family doctor’ listed in a general attempt to avoid doctors, home doctors were preferred to finding physicians near campus as students value built relationships and fear insurance problems with new doctors.

Students kept the list of health information sources short compared to the many sources cited when listed on quantitative survey questions. Students relied exclusively on specific websites, parents/friends, and professional care. Only when specifically addressed did television, magazines, and other sources become relevant. Females and males both conclude that television’s influence is limited as people do not relate television programming to their personal lives. Using the discussions demonstrates that a transition, though small, does exist. While

students leave high school relying on coaches, mentors and parents for health advice, they leave college focused on online research, confirming opinions with parents and peers, and acting or seeking professional care.

Health Capacity

Capacity issues focused on a student's control, responsibility, and interaction with personal health decisions and behaviors specific to nutrition and physical activity. There is no doubt concern for health skills entering college as one student explained, "You have all these unsupervised kids, freshman and sophomores don't really know how to take care of themselves or the way to do everything right." Age issues may prove the precise factor that contributes to college students' health behavior. Discussing personal decisions, one student claimed that, "People go to the gym but they are eating crappy food and drinking all the time. At twenty and twenty-one we get away with a lot in doing bad stuff to our bodies, and people get away a lot with saying 'oh, you're healthy' but they are not." Many students shared a 'too young to care' mentality when discussing diet and exercise choices.

Although students assume control over their behavior, many agree that campus efforts must parallel individual responsibility. Respondents claim that the university can improve efforts by serving as a "big brother" that helps remind students to take simple steps that improve health each day. "College is supposed to be a place where I know where things are but it's my choice to use them," a student said. Unfortunately, the powers to choose admittedly result in reported negative behavior. "A lot of people just live unhealthy, they eat unhealthy foods

and engage in unhealthy activities,” a student claimed. “Individuals themselves, people, need to take initiative to live a healthy lifestyle and eat better and exercise more.” One respondent agreed, and supporting the need to focus on student’s control with university input, said, “We are all undisciplined and sense we all are for the first time learning what to do the best thing a person could do is put the information out there and make the choices obvious for us.”

University paternalism, however, has not prevented negative behaviors and one cause is students’ self-reported lack of awareness. From high school to college, students are provided resources that attempt to perform exactly what they request: information that nudges them to make the right decisions as they explore the world and make choices about personal lifestyle. According to respondents, current efforts fail. High school health courses are referred to as “gray matter with no biology connection or help to prepare for the future outside of STDs.”⁴⁷ Unfortunately, students receive little formal health education as a part of Syracuse curriculum. No students faced required health courses, and only a few had taken any health-related course: all incidents were a nutrition course used as a science elective.⁴⁸ Certainly, females show more awareness of campus health resources, while males demonstrate little recognition for health programs including Healthy Monday, Recreation Services fitness classes, and *What the Health* magazine.⁴⁹

⁴⁷ The National Institute of Medicine agrees, finding that “the absence of a coordinated health education program across grade levels may impede student learning” (2004, p. 43).

⁴⁸ Dr. Jacobs, Director of Health Services, explains that although important, classroom education isn’t always the best option. “The best place to do teaching is in the exam room. It is a teachable moment, you are in the right place at the right time,” Jacobs claimed (personal communication, February 6, 2009).

⁴⁹ *What the Health* magazine is a student produced work published once each semester. The work contains relevant health information for Syracuse students. Sponsored by the Syracuse Student

Students discussed the daily student newspaper as one source that would provide better awareness of health content, and many remembered old emails regarding health advice that they thought should be issued again. One student explained, “the e-health emails are lame, but they must do something right because I looked at them. I don’t know where they’ve been the last semester.”

Another factor influencing a student’s perception of control over health behavior is time. “I’m running out the door and I’m not thinking about whether the bean burrito I grabbed is good for me, I’m just happy to eat. I just eat what I can get,” one student said. Time also contributes to student’s perception of age influencing control. One student explained students would be healthier after graduation because, “we’ll have a lot more control. Not only will we be cooking for ourselves but we’ll have control of what is there, and when we will be eating. I won’t be like I’m in a rush and have to eat whatever is available.”

Although students report allowing hectic schedules dictate health decisions, lack of motivation was another reported factor. Discussing what causes a student to seek information, one respondent claimed, “it’s more motivation and knowing exactly where you need to go to get what you need when.” One key discrepancy in conveying health messages is college student motivation to act may follow different trends when compared to the general population. Whereas health experts may cite negative consequences and use fear to incite action, college students report an altogether different set of motivators. Building the too-young to care attitude, students replace fear with desire to be socially acceptable.

“You can be healthy, but I think more people care about their shape than anything else,” one student said.⁵⁰

For females, perceived control also has a strong social dimension not shared by male respondents. Although men recognize friends as a source of advice, it is limited when compared to the social process females report. “I think it’s about being around other people. I mean with others I might not order a pizza but if they do I’m probably going to eat a piece,” a student explained. The social component may also explain females reported use of blogs and online social content for information, a source that male respondents did not report using.

Understanding the factors that influence a college student’s desire and ability to take control of health decisions, the respondents were asked to comment more precisely on their actual degree of control and the success of Syracuse University’s influence. Students were asked to discuss a call for action from a 2001 Association of American Colleges and Universities (AACU) report that claimed a student’s capacity to improve health as a key factor in future health promotion.⁵¹ In the discussion, capacity was used to address the ability to take action rather than previously discussed perceptions of control. Students agreed with the AACU 2001 report, claiming that “there is a strategy in place, but there is not much focus on the capacity of students themselves.” Another student said, “I don’t think there is a strong commitment to health. You can go all of college

⁵⁰ Previous research provides an established base to reflect the “sex-appeal” as a critical component for health promotion on campus (Gruber, 2008).

⁵¹ The quotation reads: “...as a nation, we have not made the health of college students a priority; we lack a strong commitment to addressing health on campus, a coordinated strategy to improve health among students, and—most important—a focus on the capacity of students themselves to contribute to solving health problems” (Institute of Medicine, 2004, p. 147).

and nobody will check up on you, or you could never take a nutrition class or anything at all in your four years here.”

Primary issues quickly focused on institutional resources that effect nutrition and physical activity: the university dining centers and exercise facilities. Overall, students perceived Syracuse Food Services as superior to other colleges and universities. “I’m happy with what’s here at Syracuse because I feel like you don’t have to eat the pizza and crap because there is always the salad bar and other stuff,” a respondent said. Primary concerns were the selection of health food choices.⁵² Students echoed an opinion that, “the healthy food can get pretty redundant after awhile. They change all the other foods but the health food always stays the same since we were freshman.”⁵³

There is no similar, positive reaction to exercise facilities in promoting students capacity for health. Respondents agree that the student gyms are behind other college campuses, and that there is not enough equipment at central facilities to support the student population. Students discussed attempts to improve facilities—opening a Marshall Square Mall gym and smaller facilities in dormitories—but all cite having a better campus-wide facility as more important.

“The quality of the gym space effects people’s willingness to go there,” one

⁵² Although an overall positive review of Food Services persists, student concerns were discussed with Ruth Sullivan, MEd, RD. As Syracuse Food Service’s Registered Dietician, Sullivan explained that there is a general “lack of awareness of what we do—and will do—for people. We’ll go buy special cereal because one student wants it.” Most common direct student problems Sullivan reports are vegetarian or vegan meal planning for individual students, and working with students who attempt to find a nutritional rationale for being excused from a University, pre-purchased food plan (personal communication, February 4, 2009).

⁵³ Sullivan claims students’ concern for health-food variety is primarily a perception problem. “There is a large variety of health food, but people do not always realize what is healthy,” Sullivan said. “We are always trying to make our entrees healthier and they are; even though they (students) do not always perceive them as healthy” (personal communication, February 4, 2009).

student said. Discussing the need to improve Archbold as a central facility, another student explained, “Making one place better will attract more people than multiple locations because having a nice place to work out makes it a better experience.” Finally, students cited below-par facilities as a strong example of their limited control as students. “I don’t think we have an impact. If you asked everybody if they think or would like Archbold to be re-done you’ll probably get 95 percent yes; but nothing happens. We do not have the capacity to contribute to what actions the university takes,” a student said.⁵⁴

Diet and Exercise

A focus on diet and exercise was used to discuss respondents concern for each, and test the hypothesis that a major influence of college student living is using exercise to make up for nutrition choices that may often include poor diets and binge drinking. The hypothesis, which may affect how health programs target college students, further addresses a perception that females focus more on diet while males use exercise to offset holistic health deficiencies. The main objective for any health regime should be healthy living. Throughout discussions, however, students use faulty causality to link good health with good looks. “I think college girls are a bit healthier simply because there is more pressure to look good,” one respondent claimed.⁵⁵ The concern, to be desirable in the college

⁵⁴ The author notes a November 2006 independent study by Brailsford & Dunlavey Inc. titled *Syracuse University: Preliminary Recreation Assessment, final report*, which found that “Although SU currently offers a variety of recreational facilities, both the quality and quantity of these facilities fall short of contemporary university standards.” The assessment continued by concluding that there are “gaps between the University’s aspirations and how the recreation program contributes to these goals.”

⁵⁵ In fact, using appearance as a measure of health is not only faulty, but can be harmful. Research indicates appearance driven health focus as a primary cause for health concerns, especially in

setting, seems to guide both genders diet and exercise choices with an overarching opinion that exercise can make-up for poor diet. “Ultimately, exercise can make up for diet. A lot of people exercise and go straight to Burger King,” one student said. Of course, exercise eliminating effects of poor diet is a misperception as Bergen-Cico states that although exercise can counter some negative effects of diet, an unhealthy diet still impacts overall health.⁵⁶

An apparent tradeoff is certain, but do genders prioritize exercise and diet as a means to looking “healthy” differently? First, respondents were asked to self-report exercise and diet activity to provide background on the sample. Females spent an average of 3.4 hours in the gym each week while 70% claimed to actively follow a diet. While 57% of males reported dieting, they spent an average 6.9 hours exercising each week.⁵⁷ Reported activity shows males spending double the time females do exercising, but a minimal difference in dieting. The characteristics, however, are more interesting within the context of discussion.

Although talking about the opposite gender confirms a perception for females relying on diet and males on exercise, responses of personal actions reflect the exact opposite. Discussing the push for strong men and small women, one student explained, “It’s the whole cultural thing. I mean guys aren’t really

females, from physical and psychological conditions resulting from poor body image (Worrel, 2007).

⁵⁶ D. Bergen-Cico, Syracuse University Nutrition professor, personal communication, April 5, 2009.

⁵⁷ It should be noted that respondents report healthier behavior compared to the quantitative, national Fall 2007 Reference Group. Comparatively, the national survey found 44% of males exercising to lose weight with 22.4% dieting. Similarly, women’s behavior is lower showing 58.7% of females exercising to lose weight with 40.7% dieting. Although different percentages, comparison for hours of exercise are congruent across groups, and the ratios for comparing males to females similar (ACHA, 2008).

about what they are eating or that kind of stuff.” In fact, men were more likely to cite diet as more important to their health choices, and females exercise. For females, exercise was seen as a way to “work off the beer” and stay fit within the college environment. Males conversely cite diet as more important. “I don’t have a lot of time to go out and exercise, but diet is something I can control without putting in a huge amount of extra time,” one student said. Another agreed that feeling more control made nutrition more important, explaining, “I also eat three times a day compared to exercising maybe once.”

Near the end of discussions respondents were again asked to rank the relative importance of diet and exercise, but were asked within the context of six leading concerns. Students ranked nutrition and dietary patterns that cause disease, injuries, tobacco use, alcohol and drug use, inadequate physical activity, and sexual behavior that causes pregnancy or STDs from most to least important as future health concerns⁵⁸. The findings provide many levels of insight. First, although males and females claim to value diet and exercise respectively, their priorities change when asked to rank issues without discussion. In fact, males rank physical activity as the most important, future concern with an average 1.6 rating compared to 2.2 for nutrition. Females similarly reverse opinion by ranking nutrition as more important than physical activity; 3.4 and 4.1 respectively. Further, physical activity is the number one and two concerns for male groups, but number three and four for females. Females show relatively more concern for other potential problems, including alcohol and drug use and sexual behavior. Although injuries are the number one cause of serious health

⁵⁸ See Also Figure 3: Health Concerns, p. 51.

problems for the college-aged demographic, it is the lowest concern for both males and females.⁵⁹ Finally, health risk priorities shown in Figure 3 demonstrate that written rankings are similar to reported, actual respondent behavior. That is, a small difference in diet behavior but a large divergence in physical activity; whereas males report performing twice as much exercise, they also rank physical activity two and half points higher than females, etc.

Although the results differ from discussion to written survey, the data may prove why control is such a critical issue for health behavior and choices.

Although both males and females reversed their opinion on which activity is more important, all results show a clear difference between genders. Certainly, strength is also provided to written results as the ranked priorities mirror the respondents reported lifestyle actions. The qualitative assessment, by highlighting the divergent responses between verbal and written queries, demonstrates its value for analysis by providing insight into the potential reason for varying responses: control. It is clear that perceived control and independence is critical. Males rank exercise as most important, but prioritize nutrition as it is easier to control. Females, conversely rate nutrition as more important, but prioritize exercise as a means to control weight and poor college diets.

DISCUSSION

Examining Syracuse University students' interaction with Health Services, capacity and responsibility to make health promoting behavioral judgments, and

⁵⁹ Injuries include vehicle related fatalities. In fact, 40% of deaths among 16 to 20 year-olds result from motor vehicle accidents. About half of all accidents are related to drinking and driving (Timmerman et al., 2003).

relative value associated with maintaining a proper diet and level of physical activity help to propose recommendations for future action. Certainly, the findings are no longer a simple test of health, but of skills necessary to live. There is no longer a need to hunt wild game or outlive physically extreme conditions; instead students must be proficient to traverse the cultural, scientific, technological and constantly evolving environment for health decision-making on a college campus. Compiling analytical data from the focus groups, personal interviews, and extensive secondary research allows a discussion that identifies the following considerations: student control and independence, administrative coordination efforts, the priority for self-produced student resources, and college-student health literacy concerns.

Findings illustrate that college students do maintain a unique profile that requires a detailed understanding of their independence in making health related decisions. Students report a change during the period from enrollment to graduation. “Freshman year I was worried about everything but my mom finally said ‘you’ve got to start taking care of yourself when things happen,’” one student said. Health care professionals and health promotion specialists must recognize their role to support students as they become independent consumers of new information, sources, and opinions regarding health behavior. “A lot of freshmen come in and they are not good decision-makers,” Sullivan explained. “It is important that they get a base while here so that when they get to the big bad world they make the right decision.”⁶⁰ Unfortunately for students, there remains a subtle sense of apathy. Young adults may perceive limited control from the

⁶⁰ Personal communication, February 4, 2009.

practical claim that students remain at the mercy of a culture that determines diet and exercise expectations based on social norms.⁶¹ According to responding students, limited motivation to actively participate in health decisions derives less from a lack of control; rather a lack of responsibility. Whereas current efforts focus on the elderly and child populations, little action is taken to promote health for young adults. Indeed, translating college students' unique level of control over health behavior into taking responsibility for choices may prove the precise goal health promotion services must address. Important steps forward will require a definitive understanding of both age and gender as predictors for successful wellness promotion programs.

Although students see limited examples of health promotion coordination, the Syracuse campus has made significant efforts. Faculty leaders rate campus wellness coordination as "very high," and each note the necessity for all offices and campus organizations to contribute by taking it upon themselves to help integrate and pass information to students. Individual efforts to spread flyers or seek cross-office coordination, however, do not provide a consistent system for coordination. Recreation Services "needs to collaborate more to get word out about opportunities, and create a mechanism so new students have the opportunity in terms of education," Lore said⁶². Student Services took a major step in 2007 to improve cross-service integration by combining administrative leadership of Health Services, Recreation Services, Food Services, and other programs under a new Wellness Portfolio. The offices now hold University Wellness Meetings, and

⁶¹ Luquis et al., 2003.

⁶² Personal communication, January 27, 2009.

are learning new ways to collaborate. Jacobs indicated that the ideal environment for Health Services is “seamless access for students so I can send them to the Counseling Center and students are not caught in any university politics.” To continue integration and coordination, Jacobs notes a “wholesale evaluation of institutional policy and procedure” will be required.⁶³

A discussion of college student behavior and decision making does not exist in a vacuum of individual concerns, but recognizes peer and community influence.⁶⁴ Past student education programs have found that the best results are realized from efforts that are: ongoing, both informal and formal based, use relevant websites, and are peer-to-peer generated.⁶⁵ Past programs provide empirical support for peer created resources that result in greater receptiveness, relatively lower cost, and stronger partner opportunities across campus programs.⁶⁶

It is well-established in health literature that “learner-prepared materials generate enthusiasm in the learner,” and can provide a vehicle to build students capacity for effective behavior change.⁶⁷ The mission of higher education to enhance student wellness can build on academic resources. There are many examples of resources: existing student organizations can provide motivated program participants, health departments can stress applied theories for students

⁶³ Personal communication, February 6, 2009.

⁶⁴ Turner, G. (1993). Peer Support and Young People’s Health. *Journal of Adolescents*, 22, p. 567-572. See also Sloane, B., & Zimmer Z. (1993, May). The Power of Peer Health Education. *Journal of American College Health*, 41, Article 6. P. 241-245.

⁶⁵ Cude, B., Lyons, A., & Cogle F. (2007). Get Financially Fit: A Financial Education Toolkit for College Campuses. *Consumer Interests Annual*, 53.

⁶⁶ *Id.*

⁶⁷ Rima, R., Kichen, J., & Josline, I. (1980, October). Student Produced Health Education Materials. *Lifeway Health Promotion Resource Center*, CDC.

in exercise science, communication programs can create real campaigns, etc.

Lore referenced the new capability of Recreation Services Personal Training Program to accept 14 new clients during one academic term thanks to a campus course that develops students to become certified trainers that feed the program.⁶⁸

Jacobs recalled a collaboration that allowed a public relations course to develop student-produced advertisements for sexually transmitted disease awareness. Not only did the campus adopt the campaign, but Jacobs “liked it because it was better for being grassroots; from students.”⁶⁹

Recognizing students as key composers of future health promotion programs demonstrates that the popular conclusion that health illiteracy affects only a limited group is wrong. Whereas only one percent of the US population is considered illiterate, the National Institute of Medicine indicates that, “nearly half of all American adults—90 million people—have difficulty understanding and acting upon health information.”⁷⁰ In fact, the conducted research provides evidence to support college students as a potential at-risk population for nutrition and diet literacy concerns. “In today’s world students really need nutrition and health information,” Sullivan noted. “But, even doctors don’t have a nutrition class as part of their curriculum.”⁷¹

Multiple studies address a student’s source for health information, but this research highlights a need to focus not only on where to find information, but on how a student identifies with the source chosen. Age, gender, social and trust

⁶⁸ Personal communication, January 27, 2009.

⁶⁹ Personal communication, February 6, 2009.

⁷⁰ Institute of Medicine, 2004, p. 1.

⁷¹ Personal communication, February 4, 2009.

issues all create a landscape that defines how college students interact with health information. Audie Cornish, NPR reporter, concludes that “data suggests that undergraduate students are inaccurate judges of their own competencies and hold a very positive view of their ability to do research.”⁷² Sullivan agrees, noting that she often finds students coming to meetings prepared, but “the problem I find is that they have good information and bad information. Students are not always finding great sources and we want to educate with scientific data.”⁷³ Source identification is increasingly difficult as the status quo continues to grow with new, openly available and participatory resources. The challenge to find good information is no simple task. Norman and Skinner, founders of the Center for Global E-health Innovation, expand the National Institute of Medicine’s health literacy model to include six necessary skills that intersect health literacy: traditional literacy, computer literacy, media literacy, science literacy, and information literacy.⁷⁴ Each functional literacy concern must be fostered to build citizens that can successfully operate in today’s world of health information.

LIMITATIONS

Similar to other focus groups, the size and lack of diversity among respondents limit the generalization of results. Although small sample size is preferred for qualitative research, it results in data that cannot represent all college

⁷² Cornish, A. (2005, April 25). Testing Computer Literacy. *National Public Radio, Morning Addition*.

⁷³ Personal communication, February 4, 2009.

⁷⁴ Norman, C., & Skinner, H. (2006). eHealth Literacy: Essential Skills for Consumer Health in a Networked World. *Centre for Global eHealth Innovation*. Retrieved March 30, 2009, from <http://www.jmir.org/2006/2/e9>

students. Also, the focus group participants are subject to recall bias from reflecting on past events, and face the pressure to give socially desirable answers. Despite concerns, focus groups remain a “viable tool for health educators to assess the college students’ perceptions of their health behaviors.”⁷⁵

RECOMMENDATIONS

Results from this study, though limited, strive to use stated findings to help educators and administrators better develop and promote successful campus health promotion programs. Recommendations include targeting information on gender and age, evaluating feedback mechanisms, using social framing, measures specific to Recreations Services, Health Services and Food Services, a strategy for using campus resources, and a call for self-produced student materials.

Tailoring resources to the appropriate audience is not a new concept; rather a tested and proven necessity for effective health promotion efforts.⁷⁶ However, students’ discussion highlights a need to target from both gender and age perspectives. One student offered the idea that, “more efforts need to be targeted, maybe find what students are interested in and let them know about options. More targeted information is needed. You know the emails sent out about the flu and HPV shots are so general and without information that people do not really know what to do with it.” The finding’s gender analysis can be included to appropriately target students. For example, men are more inclined to be physically active and prefer less healthful diets than women. The

⁷⁵ Luquis et al., 2003.

⁷⁶ Witte et al., 2001, p. 72.

understanding—conversely true for women—shows less need to encourage men toward physical activity, and that they will be less responsive to messages about eating habits. One instance to target males and females separately could be to publish two versions of a publication like *What the Health* magazine.⁷⁷ Similarly, findings demand age specific considerations while targeting health promotion efforts. Age should be addressed as college students face discussed independence and control issues, time constraints, information gathering problems, and a strong cultural concept of what it means to be “healthy.” Indeed, campuses must make health information relevant, important and accessible. Academics agree that, “young people are more likely to question their health behaviors when they are made to feel at risk for diminished physical appearance.”⁷⁸

Primary efforts to find what interests students must depend on stronger feedback mechanisms for campus health service providers. “I’m 44 and know what I want people to learn, but students are different,” Food Service’s Sullivan explained.⁷⁹ “Students know what they think and see.” Food Services maintains many formal feedback mechanisms that include a “meal-talk” email campaign, Facebook account, nutrition counseling by appointment, and plans for new kiosks that will be installed in dining centers to allow on-the-spot nutritional analysis.

⁷⁷ The author notes that this would follow national trends that include numerous examples of health, nutrition, and physical activity publications that provide both a female and male version of similar content. Applying the approach to college campuses may alleviate the reported lack of awareness amongst male respondents. The separate targets may also be applied to students request for better use of the campus newspaper: *The Daily Orange*.

⁷⁸ Stellefson, W., Wang, M., & Klein, Z. (2006, June 22). Effects of cognitive dissonance on intentions to change diet and physical activity among college students [Electronic version]. *American Journal of Health Studies*. Retrieved March 29, 2009, from <http://www.thefreelibrary.com/Effects+of+cognitive+dissonance+on+intentions+to+change+diet+and...-a0164105497>

⁷⁹ Personal communication, February 4, 2009.

Health Services admits its only formal feedback system usually consists of parents who call to discuss student treatment. Jacobs indicates that paper suggestion boxes exist but are never used, and that online feedback is limited as Health Services website has not been maintained in preparation for a new site.⁸⁰ Recreation Services lacks feedback, but Joe Lore commented that students “know how to find me” in discussing his open-door policy.⁸¹ Improvements, especially for Health and Recreation Services, can be derived following a few guidelines. First, administrators can capitalize—especially relevant to Recreation Services and Food Services—on the potential wealth of internal feedback from student employees. Second, a formal feedback process should become a priority as the importance for collaborative and student-involved programming has been discussed as key elements for success.⁸² A formal system may take many forms, but should define frequency, scope, reporting process and other similar concerns. Finally, feedback should be representative of as many stakeholders as possible; including students, faculty, administrators, parents, and student organizations outside the wellness umbrella.⁸³

Social framing may be used in addition to concerns for appropriately targeting age and gender. Perhaps Shakespeare was before his time when he

⁸⁰ Personal communication, February 6, 2009.

⁸¹ The author notes that formal feedback forms exist and were provided as an example of student input. However, no physical forms were available within Fitness Centers, online, and the referenced forms were limited (personal communication, January 27, 2009).

⁸² Banas notes that “When information is personally relevant it is more likely to be thoughtfully processed and is therefore more successful than non-tailored information in guiding a person toward a suggested behavior change (2008).”

⁸³ The author notes that a common complaint for administrators is finding volunteers to participate in the formal feedback process. The problem demonstrates the value of discussed efforts for collaboration amongst organizations on campus and within classes that relate to separate programs. Administrators should use creativity to find participant incentives that do not require resources be diverted from health promotion efforts.

penned, “And frame your mind in mirth and merriment, which bars a thousand harms and lengthens life.”⁸⁴ The United States follows the eloquent advice each year, spending more per capita on entertainment than for health care.⁸⁵ A significant amount of literature defines the recent evolution of entertainment and health information as “edutainment.” Future efforts should ensure programs and policies understand social and entertainment aspects of college health behaviors, and work to support student lifestyle without requesting major change. “A lot of girls will listen to things that already fit their lifestyle,” one female respondent said. Gruber further articulates that “findings clearly show that social support is a powerful motivator for young adolescents’ diet and healthful eating behaviors.”⁸⁶ It is noted that for some students close friends are more powerful influences than either family or the doctor. Although findings show females much more attuned to social influence, health promotion should consider the social aspect for both male and female efforts. Jacobs explained that he had no precise reason for why the 2008 season included a drastic increase in students requesting the flu shot. The social acceptance and positive peer reaction provides one rationale. Discussing social framing, Sullivan notes that Food Services planned for social interaction with a friendly atmosphere and tables, but “not with the food menu.”⁸⁷ Eating and food selection, exercising and gym activities, and even vaccines can be

⁸⁴ Shakespeare, W. *The Taming of the Shrew*. The Literature Network. Retrieved April 21, 2009, from <http://www.online-literature.com/shakespeare/shrew/2/>

⁸⁵ Kiefer, K. (2001, February). Health Literacy: responding to the need for help [Electronic version]. *Center on an Aging Society*. Retrieved March 30, 2009, from <http://ihcrp.georgetown.edu/agingsociety/pdfs/CMEReport1.pdf>

⁸⁶ Gruber, 2008.

⁸⁷ Personal communication, February 4, 2009.

affected by a college student's social influences, and promotion efforts should evaluate ideas and content accordingly.

Specific efforts for Recreation Services revolve around meeting student expectations for proper exercise facilities. Although Lore understands student concern with the primary student fitness center at Archbold Gymnasium, he notes that "this generation is very health conscious. Now there is more emphasis on what we do here more than just working out; its basketball, outdoor activities, etc. It magnifies what we do in the eyes of students who want to see what we do."⁸⁸ Lore and the staff of Recreation Services would do well to follow the independent, 2006 evaluation that concludes, "Renovations to, or replacement of, the existing student recreation facilities would increase the quality of life at SU, serving as an integral tool for the recruitment and retention of superior and diverse students."⁸⁹ As Lore self-addressed, student support for Recreation Services improvements will not be a secondary concern; rather a requirement for success. Recreation staff should make it a priority to recruit young students that will be effected by future changes, and oversee the establishment of a task force that provides student input, support, and passion for improving fitness facilities.⁹⁰

Although least appreciated by student respondents, Health Services remains realistic about its problems and remedies.⁹¹ Foremost, Health Services

⁸⁸ Personal communication, January 27, 2009.

⁸⁹ Brailsford, 2006.

⁹⁰ The author notes that student efforts can often supplement university staff. During the period of this review top positions at both Recreation Services and Health Services were vacant and left unfilled due to a fiscal environment that produces a university-wide hiring freeze. Although personnel problems must be addressed, students are a resource that is always present, and engaging groups to participate can offset staff losses.

⁹¹ A self-addressed review of scheduling techniques and review of pharmacy operations are two examples.

can improve its ability to service students by working to improve negative perceptions. Jacobs explains that he has “no ability to respond, no way to defend myself.”⁹² Health Services can improve perception through collaboration, and encouraging past success with campus public relation courses to create campaigns that provide educational fodder for students and a positive image for Health Services. Future campaigns should focus attention to educate students about planning visits to appropriately allow time for tests to be useful in diagnosing illness and prescribing solutions. As all surveyed students have used Health Services at some point, and the findings support an inherent shift from freshman to senior year, timing visit awareness may prove useful as a part of freshman orientation programs. Building a better public image will include the additional benefit of fostering stronger relationships between students and Health Services personnel that are a concern for students. Finally, inserting an orientation to Health Services into freshman programs provide an example of one method to expand Jacob’s concept for providing information at the “right time, right place.”⁹³ Expanding the library’s role, discussed in relation to increasing students ability to discern quality information, is another example of cross-collaboration that can expand current campus offerings. Expanding the instances for timing and place beyond the examination room walls may provide useful ideas for future brainstorming.

Respondents rate Food Services higher than other university student service entities. Both Recreation Services and Health Services can implement

⁹² Personal communication, February 6, 2009.

⁹³ Personal communication, February 6, 2009.

strategies that have proven successful in the Dining Centers. First, Food Services has encouraged students to approach staff with questions and concerns by placing pictures and titles at all facilities, and continue to evolve promotion of an “ask-me” program. Similarly, each organization can model Health Services by creating stronger connections to the Parents Office as a critical litmus test for quality of services provided near the start of a student’s career. Second, all three programs can work to provide targeted, specific information similar to past e-health emails that students claim was an effective method to communicate health messages.

FUTURE RESEARCH

This report provides initial steps dictated in the community readiness model by evaluating, commenting on, and addressing specific needs of the Syracuse University community. Future work can further contribute, and expand these steps with the hope of leading to better programming and improved student wellness. First, more specific focus can better evaluate precise health needs of students, and how to present information. As control is found to be a decisive factor, focus should be on empowering students. Assessing and addressing a student’s ability to cook healthy meals is an example of a specific need that may prove important.

Perhaps most critical, motivating and involving students must be further examined. Many recommendations and discussion relates to active student involvement. However, a reported lack of student feedback and efforts requires a

creative solution to motivate students to use capacity to positively affect the health of the Syracuse University campus. Future research should examine why students are not involved in current programs, and how to appeal to students' interests.

CONCLUSION

Given student requests and recognition of needs, academic institutions are highlighted as key advocates that must take and promote responsibility for health decisions that help students execute healthy behaviors. Students seek a university administration that puts information out for consumption, and this report helps to identify what information to include. Appealing to students and providing material that provides functional literacy can improve both health decisions, behaviors, and lead to better health outcomes for students. Primary efforts should focus on integrating age, gender and other discussed recommendations to correctly align student perceptions and awareness with expectations for successfully making healthy decisions. Once developed, these strategies can expand beyond the community readiness model, instead using more precise communication and health theories to implement programs and plans. It is no understatement that without a continued improvement of health behaviors the promise of scientific advances to improve longevity and quality of life will be limited. Rather, colleges and universities can use similar methods to analyze student functional health literacy and improve campus community health promotion readiness.

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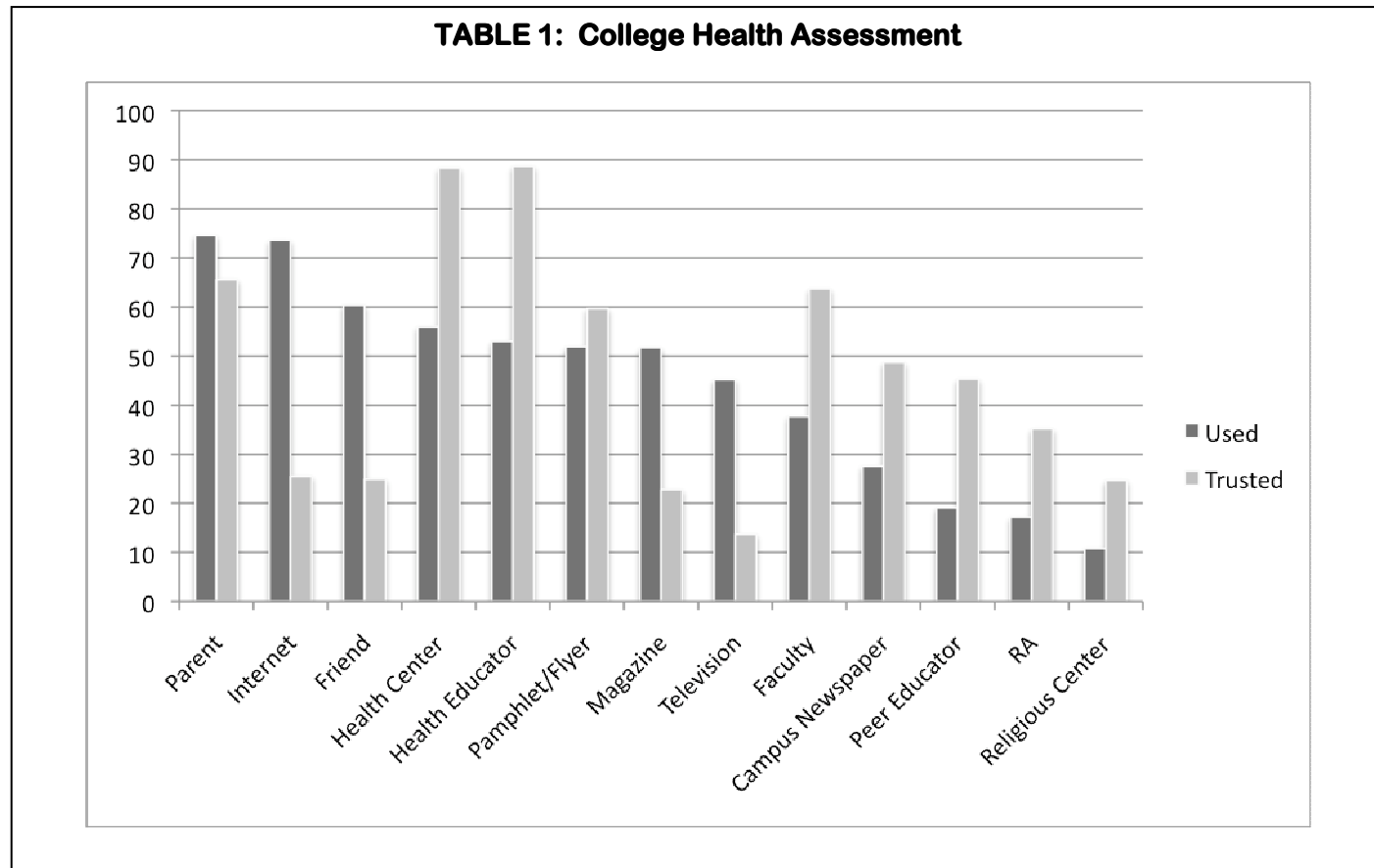
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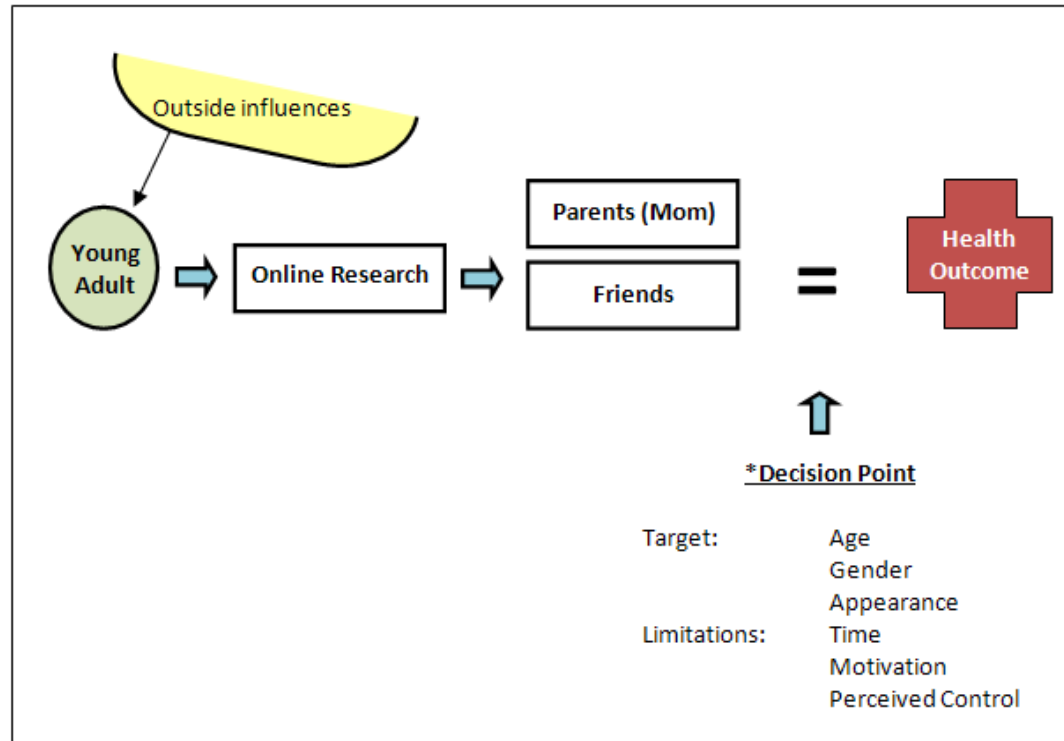
APPENDICIES

Appendix A – Figure 1: Health Assessment⁹⁴

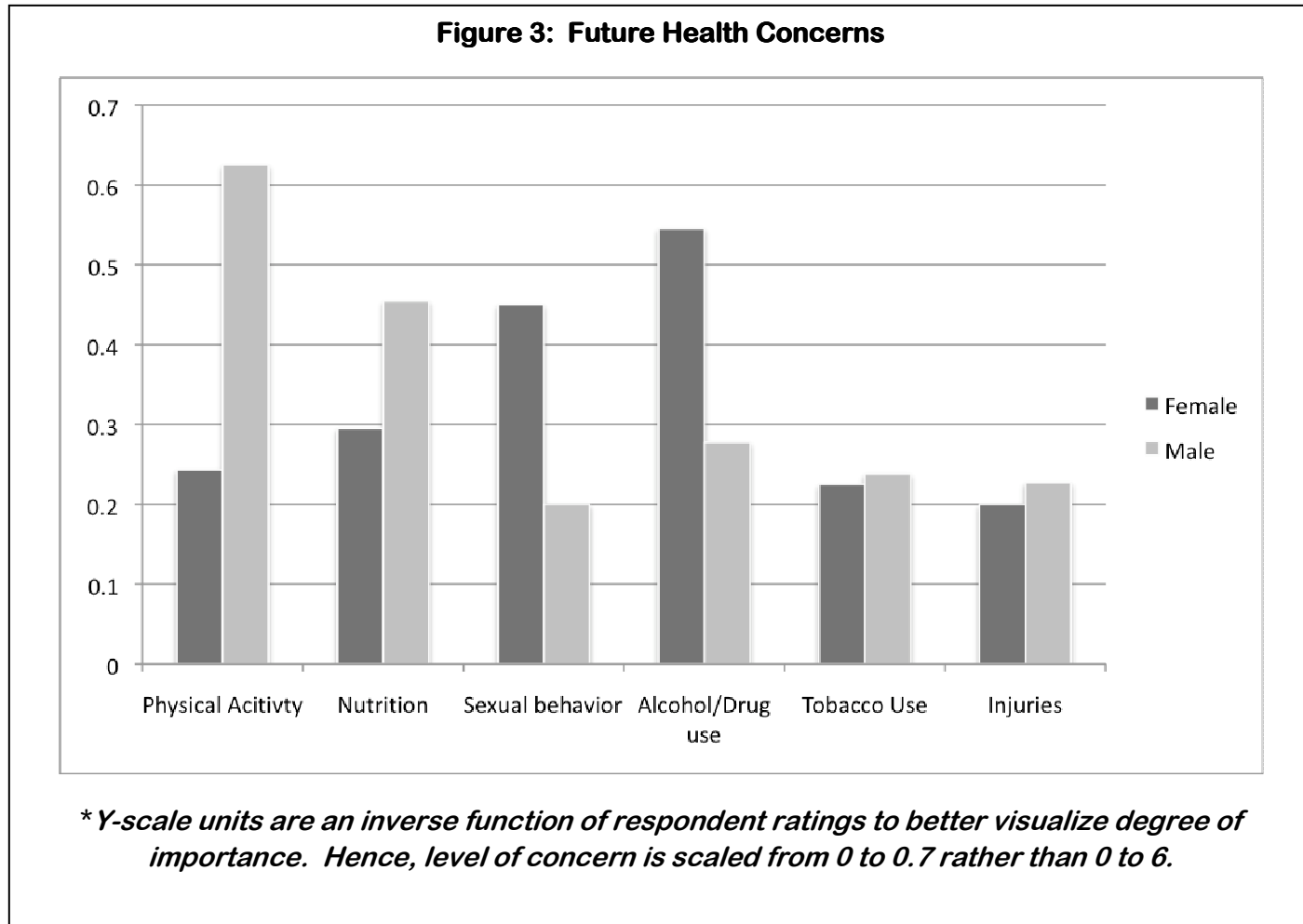


⁹⁴ The American College Health Association. *National College Health Assessment Spring 2007 Reference Group Data Report*. Journal of American College Health, 56.5. 2008.

Appendix B – Figure 2: Health Choice Model



Appendix C – Figure 3 Health Concerns



Appendix D – Focus Group Question-set (page 1 of 2)

Lead-ins: Have you ever discussed health with your parents, family, or educator? What way? What we will do here today is talk about health and wellness in the context of your time here at Syracuse. As seniors, you can offer unique perspective on health here on campus.

Health Services: Use, Usefulness, Interactions

1. How many have used Health Services in the past semester, past year, since freshman year? Anybody not use at all?
2. What are the occasions for using Health Services?
 - a. What, if any, are reasons that you don't go?
3. Oftentimes, when you are sick, who do you call first? Have you ever searched for information online before asking for advice or seeking treatment?
 - a. If you call your parents about an illness, do they have the information needed to provide advice or support?
4. How long do you wait before seeking professional help. For a cold? For an injury? Etc.
5. If you do go to Health Services, do you feel they have sufficient information/treatment/and focus for your medical condition?
6. What, as far as you know, are services provided by Health Services?

Personal Health Information Competency Test

1. As a basis for health, has your education prepared you to make healthy decisions, and do you feel prepared to manage your health and wellness post-graduation?
 - a. What if you were told that only 9.6 percent of health teachers have a health degree in middle and high school classrooms?
2. We have all lived in dorms and may have experienced first or second hand the effects of over-consumption of alcohol, how do you know when to call the ambulance for potential alcohol poisoning? Where did you get information to create your standard?

3. What websites do you use for health topics? Why? Did they work or provide any benefits and what?
4. Besides the internet, where else do you get information about health?
5. If you could change one aspect of your lifestyle and living to improve your overall wellness, what would it be?
6. **SHOW SLIDE QUOTATION.** Do you agree with the quotation? What about the Syracuse campus? Are you empowered to make healthy changes?
7. With that in mind, what can individuals do to make health and wellness happen as a society?

Popular Culture/Media Reaction

1. Supersize Me clip: social feeling toward the obese
2. The Office: different methods of losing weight.

Individual, personal feelings toward exercise and diet

1. Which, to you, is more important, exercise or diet?
2. Do you think most other people listen to professional guidance in pursuing nutrition and exercise rich lifestyles.
3. What was the last source you used for information about diet and nutrition. What was the last source you used to get information about exercise?
4. If your mother told you to be more nutritious, what food would you grab at the next break? What do you know about food groups?
5. We hear so much about exercise, how much should we exercise in a week?
6. How many have ever seen health in popular culture: scrubs, er, grace, etc.? Do you feel like you ever take actual knowledge away, explain?
7. A recent study indicates that 64% of adults gain health information from television, but only 59% put trust and confidence in television as a source of health information. Do you trust television for health information? What do you think causes the disparity? What could be done to improve your confidence in television, the internet, etc?
8. Do men and women react differently in achieving a healthy body, why?
9. What for men is physically important, what for women? Why, and discuss any differences?

10. I'm going to put on the overhead six potential health concerns. Please take a moment to rate the most important (1) and least important (6) concern to you, and then we will discuss them as a group.
11. A recent study indicates that 64% of adults gain health information from television, but only 59% put trust and confidence in television as a source of health information. Do you trust television for health information? What do you think causes the disparity? What could be done to improve your confidence in television, the internet, etc? What programs have you watched recently?

Appendix E – Written Survey Questions

- Rate Importance from 1 to 6
 - _____ Nutrition and dietary patterns that cause disease
 - _____ Injuries
 - _____ Tobacco use
 - _____ Alcohol and drug use
 - _____ Inadequate physical activity
 - _____ Sexual behavior that causes pregnancy or STDs
- Questions, please write number and answer:
 1. First Name (statistical purpose only)
 2. Age, Grade level
 3. Gender
 4. Weight (lbs)
 5. Height (feet and inches)
 6. Appx. GPA
 7. Ethnicity
 8. Rate your families income level from list:
 - a. lower-class
 - b. lower-middle class
 - c. middle class
 - d. upper middle-class
 - e. high class
 9. Rate your own health lifestyle and health choices:
 - a. Poor
 - b. Average
 - c. Above Average
- In the past year, have you altered your eating habits as a part of a diet or nutrition plan?
 - If yes, are you still on a diet? **YES or NO**
- How many days a week, on average, do you exercise? How many hours a week?

Written Capstone Summary

Authors often ask readers to reflect, react, understand, remember, or simply enjoy a well-written work. This report takes the rare position, and asks instead for action. The author uses pages not only to comment, report, and suggest, but to provide practical information for future strategies. Although no war cry, and limited by the syntax of an academic work, the case study of Syracuse University's health promotion and student health behavior provides data that may be employed to understand and influence future, functional health literacy.

Functional health literacy is concerned with the direct contact populations have with health information; how it is found, used, shared, etc. Although acknowledging the many paths a discussion of functional health literacy can take, it remains equally important for health and communication discussion to be grounded in an appropriate, theoretical framework. While increasingly independent, college students are still heavily influenced by their environment. Acculturation to a campus community and lifestyle includes the access, use and availability of community programs. Hence, the Community Readiness Model (CRM), a stage-theory developed to understand dynamics in community planning and development regarding health topics, is an appropriate framework when evaluating functional health literacy on the Syracuse University campus

(McKenzie et al., 2009). This report conducts the necessary interviews to provide discussion and recommendations that develop future strategies for community actions with an ultimate goal to improve functional health literacy.

Health allows people to live longer, higher quality lives. Fortunately, today's scholars and individuals have access to an unprecedented amount of health related content and advice that aims to promote healthy living. The information surge is paralleled by a push for continued, individual independence in the health landscape. Unfortunately, studies and demographics indicate that there is a mismatch between the information and individual decisions to live healthy (National Institute of Medicine, 2004). The lack of health behavior has consistently been reported among college students. There is no surprise that these negative trends have resulted in *Healthy People 2010* targeting postsecondary educational institutions as a critical setting for addressing young adult health promotion (2000).

The analysis of this study avoids common limitations of current research by conducting qualitative, exploratory research that focuses on college students. Although college-aged populations are underrepresented in most research, they are the target demographic for this study, and the campus setting provides a research structure with direct control measures for personal health decisions and outcomes. School-aged children have less control over personal health decisions because their guardians control their diets and access to a healthy lifestyle, and the

elderly remain limited by comparatively limited adaptability to changing technology and the projection of decision-making power to medical professionals that manage their health (National Institute of Medicine, 2004). This analysis employs focus groups to comment on a students' functional health literacy. Hence, issues of independence and control, social pressures, institutional resources and a focus on gender and age factors take center stage. Using gender differences and a hypothesized divergence between male and female nutrition and physical activity standards, this study assesses potential factors that influence a students' health decision-making process.

Physical activity and diet were chosen as two of the ten leading health indicators recognized by the federal government's *Healthy People 2010* report (2000). The two indicators serve as good discussion for this research as they are uniquely influenced by individual choice and behavior, include predicted gender differences, and are primary components of healthy living. The University's Institutional Review Board approved the study for the Fall 2008 academic term, and the Crown Wise Scholarship was used in conjunction with the honors program for funding. A total of 26 senior students participated in four focus groups. In addition, personal interviews were conducted to accurately represent Syracuse University programs and institutions related to topics addressed by student respondents.

Upon review, respondent content was organized into three primary categories based on subject: campus Health Services, health capacity and responsibility, and diet versus exercise as a component of healthy living. Medical service topics were addressed to measure usage, appropriateness, and choice factors that influence a student's interaction with the Syracuse University Health Services. Health capacity involved asking respondents to address their responsibility and capabilities for living healthy and improving community health. Finally, diet and exercise were addressed to determine potential gender differences in prioritizing, motivating and influencing healthy behaviors.

The qualitative assessment, by highlighting the divergent responses between verbal and written queries, demonstrates its value for analysis by providing insight into the potential reason for varying responses: control. It is clear that perceived control and independence is critical. Males rate exercise as most important, but prioritize nutrition as it is easier to control. Females, conversely rate nutrition as more important, but prioritize exercise as a means to control weight and poor college diets. Results from this study, though limited, strive to use stated findings to help educators and administrators better develop and promote successful campus health promotion programs by recognizing the campus' role in the community readiness model. Recommendations include targeting information on gender and age, evaluating feedback mechanisms, using social framing, measures specific to Recreations Services, Health Services and

Food Services, a strategy for using campus resources, and a call for self-produced student materials.

Primary efforts should focus on integrating age, gender and other discussed recommendations to correctly align student perceptions and awareness with expectations for successfully making health decisions. Without a continued improvement of health behaviors the promise of scientific advances to improve longevity and quality of life will be limited. Rather, colleges and universities can use similar methods to analyze student functional health literacy and improve campus community health promotion readiness.