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Using an Importance-Performance Analysis of Summer Students in the Evaluation of
Student Health Services

A thesis
presented to the faculty of
the Department of Public and Allied Health
East Tennessee State University

In partial fulfillment
of the requirements for the degree
Master of Public Health

by
Candice Cline DuVernois
December 2001

Dr. Richard Wissell, Chair
Dr. James Florence
Dr. Leo Harvill

Keywords: East Tennessee State University, College, Health

ABSTRACT

Using an Importance-Performance Analysis of Summer Students in the Evaluation of
Student Health Services

by

Candice Cline DuVernois

Hitherto, students have not evaluated the importance and performance of services provided by the student health service (SHS) at East Tennessee State University. An evaluation could provide valuable feedback to providers and administration.

In 2001, there were 944 student visits in the summer sessions. Approximately 256 students were offered a survey containing an Importance-Performance scale of which 151 (59.0%) responded. The I-P scale rates the importance students place on healthcare services and the performance of the SHS in delivering services (i.e., patient satisfaction).

Based on mean scores, students reported high importance, high performance on urgent care, pharmacy, and patient education. Contraception education, laboratory, and nutrition education were rated as low importance, high performance. Alcohol education was rated as low importance, low performance.

The student health service at ETSU may use the results of this study to expand, reduce, or modify services. Further research of students in other semesters is needed.

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CHAPTER 1

INTRODUCTION

Historical Overview of East Tennessee State University

Nestled in the Appalachian Mountains in Northeast Tennessee is a 90 year-old institution now known as East Tennessee State University (ETSU). Located in Johnson City, ETSU has enjoyed a rich history since its formative years. As a result of an increased emphasis placed on education after the Civil War, an “act of the General Assembly of 1909 [authorized] the State Board of Education . . . to establish three normal schools for the education and training of white teachers, one for each grand division of the state” (Burlison, 1947, p. 13). Though some funds were appropriated through the act, the location for each school remained to be decided by the board. Johnson City, together with Chattanooga, Cleveland, Morristown, (Williams, 1991), Sweetwater, Dayton, and Athens, (Burlison, 1947), among others, vied intensely to become home to the East Tennessee State Normal School. In the end, a number of factors would influence the board’s decision to select Johnson City from the long list of competitors. Not only was the 120-acre tract of land donated by George L. Carter, a local citizen, but also the combined \$150,000 bid for the school was accompanied by free water and electricity, courtesy of the city council (Williams, 1991). Sidney G. Gilbreath was elected in 1910 as the school’s first president prior to the October 2, 1911 opening of the school. The original buildings consisted of the administration/academic building, dining hall, young women’s dormitory, “powerhouse” or heating plant, and the president’s home (Mullins, 1974, p. 17).

Many recognizable changes have taken place from those early years as a normal school. The most obvious is the progressive expansion to a 366-acre main campus, which includes 63 academic and administrative buildings, 13 residence halls, and the newly constructed Charles C. Sherrod Library. Enrollment at ETSU is approximately 12,000 at present (www.etsu.edu/geninfo.htm), in sharp contrast to the 150 students in 1911 (Williams, 1991). In addition, ETSU has four off-campus centers including ETSU/UT (University of Tennessee) at Kingsport and the Marshall T. Nave Center in Elizabethton (www.etsu.edu/sacs/pr/campus.htm).

The second major modification is the name of the institution from its beginnings as East Tennessee State Normal School. The name has been altered several times in the 90 year history from East Tennessee State Teachers College (ETSTC) in the 1920s to State Teachers College, Johnson City, in 1930. In the early 1940s, the institution was renamed to East Tennessee State College (ETSC) and finally East Tennessee State University, March 5, 1963 with the signature of Governor Frank Clement bestowing university status (Williams, 1991).

With the transition to each new name came revisions in the image, purpose, and intent of the institution. This is reflected most by the evolution from an all-white teachers school to the diverse university familiar to the people of East Tennessee today. The integration of the university (then ETSC) took place in January 1956 with the admission of Eugene P. Caruthers and came “without a murmur of protest” according to Williams (1991, p. 218). Beginning with the omission of the word “teachers” from the name in the 1940s, the university has expanded greatly to include nine different colleges and schools. These consist of the colleges of applied science and technology, arts and sciences,

business, education, medicine, nursing, public and allied health, and the schools of graduate studies and continuing studies. Originally a two- and then three-year school, ETSU awarded the first four-year degree in 1926 with the first master's degree following 25 years later. Remarkably, discussions regarding the establishment of a school of medicine in East Tennessee took place between ETSU President Burgin E. Dossett (1949-1968) and Professor John P. Lamb as early as 1949 (Williams, 1991, p. 251-252). However, it wasn't until 1978 that the James H. Quillen College of Medicine (named for the U.S. Representative from the First Congressional District of Tennessee) began admitting students.

Historical Overview of the Student Health Service to Present

While innumerable details can be found regarding the progression of ETSU over the years, very little is printed regarding the student health service (SHS) on campus. The Academic and Administrative Register of ETSU lists Dr. Benton B. Mitchell as clinic physician (1937-39) and Vela Hoover as nurse (1938c. -1944). However, the exact location and services provided by the SHS at this early time are not easily obtainable.

For the past several years, the student health service has been located in Rooms 53 and 55 in John P. Lamb Hall. The services provided by the SHS have changed dramatically over the past 25 years. As early as 1976, a student reporter expressed her frustration when she asked receptionists and nurses if "V.D. examination and treatment was given at the clinic," to which no one could give a clear answer (Barker, 1976, p.7). In fact, the period between 1976 and 1979 was one in which many questions were raised regarding the purpose, scope of services, and logistics of the health service. On October

19, 1977, the “ad hoc Study Group Student Health Clinic” met with then-president Arthur B. DeRosier (1977-1980) to discuss foundational questions pertinent to the student health service. Among the areas of interest were the location of the SHS, services to be provided, staffing, funding, and the legalities associated with an SHS (“Minutes of the Meeting,” October, 1977). A subsequent meeting of the group took place on November 4, 1977. At that time, it was decided that a survey should be sent to various universities in the eastern states to obtain input on different methods in which a health service might be operated (“Minutes of the Meeting,” November, 1977). While the results of the survey could not be obtained by this researcher, at least some clarity on the role of the student health service followed this transitional period. In the November 13, 1979, edition of the East Tennessean (the school newspaper), student Debi Haglund reported several services available including gonorrhea testing, wound dressing, and provision of select medications as told to her by a clinic clerk although it was also reported that the SHS did not offer pregnancy testing or annual physicals (p. 5). More progress was to be made in the areas of student health.

In a four-part series in the East Tennessean in March and April 1984, plans for expansion of the healthcare provided at ETSU were discussed at length. It was revealed that while the operating budget for the ETSU student health service was \$100,000, the budgets for three of the University of North Carolina schools, Charlotte, Greensboro, and Chapel Hill, were \$600,000, \$1,000,000, and \$3,500,000 respectively (Smith, 1984, March 13, p. 1). It could be argued that not only did the enrollment of the universities vary, but also the ratio of commuting versus on-campus students might have been factors in deciding operating budgets at that time. These topics were not discussed or compared

in the articles. Nevertheless, the lofty plans for expansion at ETSU included proposed options for a counseling center, select laboratory services done in-house, 24-hour per day nursing staff, and an addition of three full-time physicians (Miller, 1984, p. 2), as opposed to the current part-time physician. Through the late eighties, services provided by the SHS increased to respond to the changing times and the changing needs of students. By 1987, family planning advice and birth-control pills were being dispensed at little or no charge to the students and the university had contracted with the Johnson City Medical Center to cover the cost of an emergency room visit, excluding lab tests and x-rays (Johnson, 1987, p. 3).

Today's student health service at ETSU is a nurse-managed clinic under the guidance of the College of Nursing. Among others, the SHS offers urgent and primary care, limited laboratory services and nutrition education, and counseling services to students enrolled full- or part-time. A women's health clinic offers exams, PAP tests, and sexually transmitted disease (STD) screening and continues to provide certain brands of birth-control pills by prescription at a discounted price. An allergy clinic is also offered for students receiving allergy injections provided the student has both the antigen or antigens and written instructions from his allergist. A limited supply of prescription medications is available to the students. For services not provided by the SHS, referrals are made to agencies in the community. The staff at the SHS includes six consulting physicians as well as a full- and part-time clinical staff comprised of seven nurse practitioners (NPs), five nurses, a health education coordinator, a phlebotomist, and administrative support staff including student workers.

The student health service is open Monday through Friday from 8:00a.m. until 4:30p.m. Students are asked to sign in as either a “well visit,” (e.g., allergy injection, medication refill request) or a “sick visit” with waiting rooms assigned to each type of student. For sick visits, students are triaged by a registered nurse (RN) to determine the provider most appropriate for the students’ needs. If the RN or nurse practitioner determines that the student needs to see a physician, an appointment is scheduled. According to the SHS website, the student is warned not to come to the SHS if he or she experiences loss of consciousness, severe head injury, an obstructed airway or a list of other emergency medical conditions. The student is instructed to go at once to an emergency room so as not to waste valuable time for treatment of the condition (www.etsu.edu/studenthealth/emergency.htm).

Patient Satisfaction

The concept of patient satisfaction is one that has been studied from many different angles in recent years. Patient satisfaction is determined by an almost limitless number of variables within the healthcare setting. Satisfaction can be measured in terms of appearance such as interior and exterior of the facility and personnel appearance. Cleanliness and neatness, lighting, and color would all potentially affect the appearance of a healthcare facility and therefore influence the patient’s perception. Satisfaction can be measured in terms of time and verbal and nonverbal communication between staff, providers, and patient and a host of other factors. At ETSU, a general satisfaction survey has been presented to the students in February for the past two years. The items on this survey include staff friendliness and communication, clinic hours, wait time, and number

of times the student has been seen in the past year. These individual traits can be used in evaluating patient satisfaction. However, the experience with the overall visit, combining several patient satisfaction variables into one rating, can be evaluated differently.

Furthermore, in recent years, no attempt has been made to understand value placed on individual services by the students who use the SHS. One caveat to presenting to a patient a list of clinic or staff attributes (e.g., cleanliness, friendliness) by which to obtain a satisfaction rating is that the researcher assumes that the attributes are important to the patient. As an example, the patient may be extremely dissatisfied with the color of the gown he is given to wear but, if asked, would the patient consider the color to be of great importance? While college and university studies have attempted to measure knowledge of services, satisfaction with specific traits and attitudes towards services, one study in particular is focused on the patient, or consumer, combining the performance of the service (satisfaction) with the importance of the service as rated by the patient. This combination, which has been applied to marketing research, is the use of Importance-Performance analysis. According to Martilla and James (1977), "Empirical research has demonstrated that consumer satisfaction is a function of both expectations related to certain important attributes and judgments of the attribute performance" (p. 77).

Each year, a number of students visit the student health service at East Tennessee State University during the summer months. This study, using an I-P analysis, will serve to offer valuable feedback to personnel and administration in the SHS in terms of patient satisfaction with the overall experience with individual services. Also, the results of this study may provide useful information with regards to expansion of services provided to

the summer students or reduction in services which the students feel are of least importance.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

Author's note:

Throughout the literature review, the following terms will be used interchangeably to convey the idea of health services provided to college and university students: student health service (SHS), college health center (CHC), university health service (UHS), and infirmary. Student health service will be used most often, as it is the term that East Tennessee State University applies to its own health service.

Historical Overview of Student Health Services

The studies of health, health services, healthcare financing, and attitudes towards health are not new concepts. Similarly, the references in literature regarding these concepts as they apply to the college or university student population can be dated to the mid- to late-1800s (Christmas, 1995; Christmas & Dorman, 1996; Crihfield, 1995). The following historical overview includes a general description of college students and their attitudes toward health as well as a description of the responsibility of colleges and universities at various time periods.

Since the late 18th and early 19th centuries, colleges and universities have grown and multiplied in America. Christmas (1995) attributes this to the growing importance placed on education by American society. In the earliest years of these institutions, the student population consisted entirely of males with Mount Holyoke College as the first to allow female students to attend. With more and more college campuses and, therefore,

students, new health concerns developed. During this time, because of the close quarters of residential students, epidemics of infectious diseases (e.g., typhoid) routinely plagued college and university campuses (Christmas, 1995). Perhaps in response to the susceptibility of college students to communicable diseases, the idea of a student health service was conceived.

Student health services have enjoyed a history spanning nearly 150 years in the United States. From the earliest beginnings in 1859 through the post-World War II expansion of services to present day, student health services have grown in terms of purpose, staff composition, and services offered. In 1856, the president of Amherst College, William A. Stearns, classified healthcare as a need for a student, much the same as was the education that a college setting could provide (Christmas, 1995). Not surprisingly, Amherst College has been credited with both the first college health center (1859) and the first college health physician, Edward Hitchcock, Jr., MD (1860). Many institutions followed suit. “The early health centers, mirroring the health care system of the times, were mainly infirmaries for sick students” (Olson & Autio, 1999, p. 1). In fact, the term infirmary has been associated with student health services since the early times, even though it only describes care given to the sick or injured. While a major purpose of early infirmaries was isolation, student health services as a whole have continually evolved and expanded to suit the needs of all students. For example, the early 1900s saw an increase in the types of services offered through student health services. These services included education as well as research involving sexually transmitted diseases (Zapka & Love, 1985).

In early student health services, the make-up of medical staff tended to be simple and the operating hours of the center brief. Tagg (1995) reflects on the University of Tennessee, Memphis when physicians cared for sick students between caring for their own patients and making rounds at the hospital. Many times, a single nurse who cared for ill or injured students staffed other health services. At Harvard and Yale in the early 1900s, students could receive common nursing care from the infirmaries for roughly \$1.50 per day; however, students who required special care had to hire their own nurses or doctors (Crihfield, 1995). Crihfield cites a 1935 article entitled “Pioneering in health education,” in which students at one college would inquire about the omission of the \$1 student health fee from their bills stating, “They had never been sick and they didn’t intend to have anything to do with a nurse” (p. 254). It seems that very little has changed over time as students and young adults continue to be accused of thinking themselves indestructible and without need of healthcare services.

In the post-World War II era, as the facilities for consumer healthcare grew in size and number, so did those available to college and university students. Patrick, Grace, and Lovato (1992) go on to point out that by the early 1950s, due to an expanding economy, approximately 85% of colleges and universities incorporated a student health service. With dedicated facilities available, the health of the student body came into focus. As Olson and Autio (1999) reveal, it was in the mid-1900s when colleges and universities began requiring health exams for new students as well as expanding the health services provided. Many institutions today continue the requirement of a health exam and most, if not all, require certain vaccinations prior to entry.

More recently, there is documentation on the attitudes of college health professionals toward students and the issue of health. In an address to a symposium on preventive medicine, Roxby (1966), then-Director of University Health Services and an Associate Professor of Medicine at Temple University, made the following statement:

College students are notorious for their proclivity to waste much of the evening when they should be studying, to study when they should be sleeping, to sleep when they should be eating breakfast, and to be too exhausted to be attentive in class or to study effectively as a result of the whole ill-conceived regimen of living. They are prone to attribute their fatigue to infectious mononucleosis and other ills that they feel certain are beyond the diagnostic acumen of the health service physician. (p. 292)

The latter statement suggested that college students were incompetent to assess the urgency and seriousness of their physical symptoms. Furthermore, it implied that students automatically assumed that the student health service physician was incompetent as well to properly diagnose and treat various physical ailments and conditions.

However, it is interesting to note where the responsibility for insuring availability of healthcare to students fell during this time period. Toward the end of his comments, Roxby urges his colleagues to keep in mind the commitment to students. Roxby (1966) states, “We are not only attempting to keep our students well...but we are helping to educate young people who will one day have families of their own and who will help to determine public policy in health matters” (p. 293). This is a statement of the powerful influence that a health service, as well as a university in general, could and should have in a student’s life.

The Responsibility of the Institution in Providing Health Services

Others in more recent times have agreed to the influence of the college or university both in terms of health outcomes and the use of financial resources to obtain healthcare. Brindis and Reyes (1997) note that student health services might offer students opportunity to prepare themselves as consumers to make decisions on how to most appropriately use healthcare services in the future. The college campus setting is an ideal place for students to learn skills needed for life after graduation.

Similarly, the college campus setting has opportunity to influence students with regards to healthy lifestyles. Many chronic and infectious diseases develop from lifestyle choices, specifically choices made at an early age. According to Boehm et al. (1993), “The young adult may be able to alter unhealthy habits at a younger age [reducing] the accumulated risk of disease” (p. 77-78). Habits ranging from alcohol and drug use to sexual behaviors to eating disorders and dieting can be acquired at this time. Additionally, Guyton et al. (1989) state, “Students are in a transitional phase...and begin to adopt life-long behaviors that either enhance or debilitate their total wellness” (p. 11). With the newfound freedom that a campus setting provides to a student, the responsibility for his health becomes his own. Unfortunately, those students inexperienced with healthcare matters lack the knowledge required to make appropriate decisions (Guyton et al.). Therefore, it is reasonable to expect involvement of the institution in training students.

The American College Health Association (ACHA) would agree that the institution is in a unique position to mold a student’s behaviors. According to the ACHA standards, “Colleges have the opportunity to influence students during a developmental

period in their lives characterized by continuing change and remarkable flexibility (Sarvela, Holcomb, & Odulana, 1992, p. 231). With the new college environment comes new perspective. Coons, McGhan, Bootman, and Larson (1989) note that college provides the student with a “new level of control” while providing health professionals the “opportunity...to influence the development of health-enhancing attitudes, beliefs and behaviors” (p. 123).

Some have narrowed the responsibility of the institution in promoting health. According to Delene and Brogowicz (1990), the responsibility of health promotion lies directly on the student health service, in which the objective is to aid the student in developing a healthy lifestyle. Others have echoed the opinion that college students must be given the opportunity to learn and practice appropriate behaviors in the realm of healthcare. Coons et al. (1989) note, “Young people must be taught to realize that overdependence on professional medical care is costly and often unnecessary” (p. 121). Teaching students to recognize situations that would appropriately require medical treatment could also be an objective for the student health service.

It is the students’ environment that makes the influence of colleges and universities possible. For example, Snaith (1998) reminds us that for many, moving to a college or university is the first time the student has lived away from home for any extended period of time. Accompanying this experience is a myriad of opportunities for the college student. Opportunities to learn, both in academics and in healthcare, present themselves in many forms. Guyton et al. (1989) remind us that due to the structure of classes as well as the campus structure itself, students become a “captive audience” (p.11). With over 14.3 million college students in the United States (Olson & Autio,

1999), educating a captive audience of this size would be a tremendous task. However, many believe that this might be possible. Brindis and Reyes (1997) support this by citing Healthy People 2000, which has observed that colleges and universities provide environments in which many young adults can receive health promotion and education services.

An interesting development in this country could allow colleges to have students as a captive audience for a longer period of time. Olson and Autio (1999) point out a current trend for students is to spend more than four years to complete the undergraduate degree. Not only could the information and training received at the college level have life-long implications, but also the institution might have more time than before in which to train and educate the students. One exception to this is the emergence of off-campus alternatives such as provision of on-line courses by some institutions. Part-time, adult, and non-residential students could have potentially fewer opportunities in which to receive information about existing health services. With this aside, for those living on-campus, the college or university campus is the students' primary environment.

One of the first structured opportunities to receive information regarding student health services lies in the student orientation, which is almost always both prior to the first day of classes and mandatory. However, as with new learning experiences, Stephenson (1999) notes "Efforts to inform [college students] about healthcare options at orientation conferences or new-student packets may be lost in the sheer bulk of information the students receive during their days on campus" (p. 237). Students, who may perceive themselves well at that time, may not be motivated to pay attention to health related information at the beginning of their college experience. Also, formal

orientation to health services is not likely to be repeated during the remainder of the college years.

It is, however, important to remember that a student health consumer is still a consumer. When the need for healthcare services arises, the motivation will be there for the student to actively seek them. McEwen (1985) states, “The public generally expects that the full benefits of medical science should be available when required” (p. 1098). It is reasonable to expect college students to feel similarly.

The Present State of Student Health Services

Various aspects of student health services have continued to evolve over time, similarly to the healthcare system of the general public. These included staffing, hours of operation, and services provided. Also, the priority assigned to each facet of the student health service has changed. Many agree that the type, quality and quantity of services provided by a college campus can vary tremendously (Brassuer & Kaplan, 1986; Olson & Autio, 1999; Patrick et al., 1992; Woolard, Donahue, Crissman, & Cole, 1995; Zapka & Love, 1985). Brindis and Reyes (1997) quantify the access to services by noting that 80% of students are in institutions that provide healthcare ranging from one-nurse practices to complex ambulatory care practices with varying numbers of doctors, nurses and administrative staff. Brindis and Reyes do not account for the other 20% of students. This aside, a range from a one-nurse clinic for minor illness and injury to a multi-physician, multi-service facility with laboratory, radiology, and pharmacy allows for much variance from institution to institution. While Stephenson (1999) indicates that the former is not the norm and that student health services ordinarily offer the student more

than basic first aid and treatment of minor complaints, he does not offer a breakdown of institutions' services. Although the constitution of student health services can vary tremendously, certain components are more common than others. For example, Brindis and Reyes also state that at least one half of the health services provide access to an array of services including family medicine, ambulatory care, psychiatry, health education, immunizations, and sports medicine. Unfortunately, contained in the other half are health services that are extremely limited in the services provided. Patrick et al. state that these resource-poor student health services can only offer advice to the students and aid in finding physicians in the community to care for their needs. Indeed, for the resource-poor student, the ability to both travel off-campus for care and to finance healthcare expenses himself could pose a barrier to access to health services.

Some authors have suggested solutions for student health services with regards to appropriate staffing. Tagg (1995) suggests that nurse practitioners are adequately prepared to care for students with acute illnesses and manage chronic diseases. Nurse practitioners not only have prescriptive powers in many states but a physician must also oversee their actions. This helps to insure that care given to the students is sufficient and appropriate.

The second issue, financing student health services, is a complex one comprised of two separate parts: securing moneys to fund health services and the student's responsibility to secure money to obtain healthcare services. In regards to financing student health services, Woolard et al. (1995) point out that the majority (85%) of funding for health services in colleges is prepaid, which would indicate on the surface

that the student would have access to services in the college environment. However, Brindis and Reyes (1997) are more specific and further define what is meant by prepaid:

A 1991 survey of 400 colleges conducted by the Southeastern Institute of Research for Blue Cross-Blue Shield revealed that 85% of the funding for college health services was prepaid, with 46% from college general funds and 39% from separate, prepaid student health fees. An additional 5% came from service fees collected at the time of clinical visits; the remaining 10% reflected grant funding and gifts to campus funds. (p. 280)

Of paramount importance is the fact that nearly half of the funding for health services comes from college general funds. As educational costs rise, availability of funding for health services may come into question. The implication is that the institution holds the fate of any college-based health service. Colleges and universities are not exempt from the cost containment principles as the costs of providing healthcare continue to rise.

According to Delene and Brogowicz (1990), the public has pressured institutions to avoid abrupt increases in tuition and fees. With the skyrocketing costs of healthcare and the relationship between insurance companies and physicians, an increase in student fees for healthcare would be nearly impossible to prevent. Even so, Delene and Brogowicz go on to state that while student health services must control costs, the college administrators have the ability to freeze the operating budgets of the SHS just as in any other department on campus.

Some wonder if student health services will respond negatively to increasing cost containment and public pressure. With the striking increase in healthcare costs, there is the decision of college administrators to either continue providing care to students on

campus directly or indirectly. Coordinating services through contractual arrangements with outside companies is one example of a cost containment option for college administrators. Patrick, Fulop, et al. (1997) describe this “outsourcing” as a means to make “[the] cash flows predictable and [the] commitments flexible” (p. 289). A second cost containment measure might involve careful selection of health service staff. For example, medical assistants or certified nursing assistants, working directly under physician or nurse practitioner supervision, can perform many tasks commonly considered nursing functions. Tagg (1995) suggests nurse practitioners (NPs) as a benefit to a health service because the salaries for NPs are considerably lower than those of physicians and would, therefore, be a cost containment measure. Elimination of certain services is a third cost containment option. According to Dr. Gordon Bergy, former president of ACHA, college health professionals should carefully scrutinize services provided at the SHS as well as analyze the costs of those services and make preparations in the event that these services are eliminated due to cost containment measures (Cited in Hak & Reid, 1988). Whatever the case, student health services have an obligation to students. Brindis and Reyes (1997) define that obligation as “[providing] quality services at a reasonable cost while maintaining an emphasis on prevention, health education, and the provision of services most needed by the college population, including mental health and substance abuse services” (p. 279).

Barriers to Access

For the college student, barriers to the access of healthcare may appear in many different forms ranging from financial to cultural. These potential barriers include

student status and hours of clinic operation. Also, patient satisfaction variables such as communication, time, technical competence, and others can contribute to the student's overall experience and determine if and when he or she decides to use the clinic at a later time.

While there may be a student health service at the college or university in which the student plans to be enrolled, its use may be restricted. With the change in the average age of the student body, changes in other aspects would be expected to follow. Guyton et al. (1989) support this by noting that of the then-12 million students, merely 2 million students were 18-22 year old, full-time students who were in residence. This indicates that students are more likely living in off-campus housing and are enrolled in classes on a part-time basis, which could affect availability of health services. Furthermore, Mundt (1996) speaks of the students enrolled in urban universities, many of whom have full- or part-time jobs and may have not been continuously enrolled. It is common to find institutions that will only provide healthcare to those students enrolled in the semester in which they seek care. This may mean for those students without health insurance, the summer break would leave them without options for affordable healthcare.

Hours of operation can also play a role in the use of the SHS. It has been suggested that students can be a peculiar group of people when seeking healthcare. Grace (1997) maintains that it is "not uncommon for students to delay treatment of acute respiratory and gastrointestinal infections until an opportune time in their class schedule; then they request immediate access to healthcare" (p. 243). Others have echoed this phenomenon. Brindis and Reyes (1997) attribute this to mostly younger students who have the tendency to delay treatment. Thus, if the hours of operation of the SHS are few

or the appointment-scheduling routine rigid, students may feel unable to access the services. Contrariwise, if the student health service is flexible in the hours of operation and/or allows frequent walk-in appointments for urgent care, the student would be more likely to access the service on his time schedule. Many private physician practices, especially primary care and pediatric offices, have extended hours on certain days, either early morning or late evening hours, to accommodate those patients who are unable to leave work or take a child from school. Another phenomenon of late has been the emergence of free-standing urgent care clinics to respond similarly to the schedules of the general public (Derlet & Nishio, 1990). Perhaps in this way, colleges and universities could seek to emulate the healthcare trends of the general public.

Age and Health Status of Students

At present estimate, the college and university population represents over 5% of the population of the United States (Guyton et al., 1989). The traditional (and mythical) view of the college student is an 18-22 year old who is reasonably healthy. Both adjectives describing college students as “young” and “healthy” are misconceptions regarding today’s college students. The first fallacy involves average age of the college population. Contrary to popular belief, many students are not 18-22 years old. Patrick et al. (1992) found in 1988 that “only 57% [of students] were 24 years of age or younger...[and] nearly 30% were aged 30 years or older” (p. 254). This figure contrasts dramatically with the stereotypical image of the college student. By 1999, Olson and Autio reported figures stating that of the 14.3 million students, about 43% of students are older than 24 years of age. With the influx of relatively older students, the college

campus develops a different image. Therefore, student health services operating under the stereotype of the 18-22 year old healthy youth would fall short of the students' needs.

The second fallacy involves the health status of the college population. Oprendek and Malcarne (1997), among others, point out that college students are similar to the general population with regards to physical and mental health and exhibit many of the same problems. Others argue that certain health problems and conditions are directly related to the college environment. Guyton et al. (1989) describe the college environment as one in which the student potentially faces dangerous risks to both physical and mental well-being. Still others maintain that college students are less healthy than the general population because of lifestyle choices such as eating habits, smoking, and sexual behavior. According to data from the 1995 National College Health Risk Behavior Survey (N=4609), 35% of students were overweight or obese based on body mass index (Lowry et al., 2000). For students away from home for the first time, the college environment provides an ideal time to experiment. For example, a 116-school survey by the Harvard School of Public Health showed a 27.8% increase in cigarette smoking on the college campus nationwide between the years of 1993 and 1997 (Wechsler, Rigotti, Gledhill-Hoyt, & Lee, 1998). These examples of lifestyle choices made by college students do not go undetected. Delene and Brogowicz (1990) remind us that "college healthcare professionals...[are] aware that adventurous college students often expose themselves to risks that lead to...alcohol or drug addiction, eating disorders, and sexually transmitted diseases, including AIDS" (p. 157). For those students who fall into the 18-22 year old category, the benefits of youth are not without significant threats

with regards to health. Grace (1997) stated that young people frequently have higher rates of morbidity and mortality than those of the general population.

Even with the issue of diverse ages, a select number of health problems are still recognized as prominent in the college student population. Hak and Reid (1988) point out that, “The health care needs of the college aged population have become more demanding and complex in the areas of contraception, sexually transmitted disease treatment, chronic disease management, and drug abuse” (p. 65). Furthermore, a panel comprised of health educators, medical professionals and residence staff testified at the May 1987 annual meeting of the American College Health Association (ACHA) that principal concerns regarding student health included sexual health, substance abuse, mental health, and food and nutrition (Guyton et al., 1989). The issues of chronic disease and noninfectious diseases, sexual health and substance use and abuse, as they apply to the college population, will be discussed in the following paragraphs.

The misconception regarding students’ health status (the perception that college students are healthy) can, in some cases, be directly connected to the misconception regarding age. Because of the widened age-range among the student population, the prevalence of chronic disease has increased. For example, Grace (1997) attributes an increase of “chronic medical problems such as hypertension, cardiovascular disease, cancer, diabetes mellitus, arthritis, and gynecologic problems not associated with contraception or sexually transmitted infections” (p. 244) with the large number of students aged 30 and older. Others have supported the claim of the presence of chronic and noninfectious diseases on campus, some of which can be life threatening. Patrick et al. (1992) describe college students as potentially having health problems such as cystic

fibrosis, a variety of mental health problems, and certain types of cancers that are more prevalent in young adults including leukemia and Hodgkin's disease. Institutions of higher learning are becoming more accessible to students with physical and mental disabilities. Brindis and Reyes (1997) support this by noting of the college population, an estimated 10.5% has at least one disability.

Sexual activity as it applies to student health is complex and multifaceted. According to Guyton et al. (1989), the panel testifying at the May 1987 ACHA meeting noted that sexual issues threatened the health of young adults both physically and emotionally. Among others, Guyton et al. listed sexually transmitted diseases (STDs), AIDS, unintended pregnancy, rape, incest, and sexual violence. Needless to say, sexual intercourse is the key component to all of these issues. With nearly 80% of college students engaging in intercourse by age 20 (Grace, 1997), the potential exists for these students to contract one or more STDs and/or be involved in unintentional pregnancy at any given time. Prevention of health conditions such as these is twofold: condom use for sexually transmitted diseases and contraception use (including condoms) for unintentional pregnancy. While contraceptive methods other than condoms aid in preventing pregnancy, they do not protect against STDs. With this in mind, the number of students actually using condoms may be most unimpressive. In a study by MacDonald, Wells, Fisher, Warren, and King in 1990, only 25% of men and 16% of women always used a condom during sexual intercourse (Cited in Patrick et al., 1992). The students' perception of the risk of contracting a sexually transmitted disease may also be unnerving. In a small study by Siegel, Klein, and Roghmann (1999), it was found that only 23% (133) of students who had engaged in sexual intercourse in the past had

ever had HIV testing. With regards to pregnancy prevention, Grace cites an article, “Teenage Pregnancy and Its Resolution,” in which it is reported that almost 20% of female college student use an unreliable method of contraception. The result of these statistics combined, applied to the millions of college students, could be disastrous.

Much has been written regarding college students and health conditions related to lifestyle. Gaines (1984) lists drug uses, misuses, and abuses as particular areas of concern. Specifically alcohol use and abuse will be discussed here. With regards to public health, Patrick et al. (1992) argue that the use of alcohol is the primary public health issue in the college population. Again, in reference to the 1987 ACHA meeting, “Substance abuse of alcohol, drugs, tobacco, and food, was identified by 78% [of the panel] as the second greatest risk to health for young adults” (Guyton et al., 1989, p. 10). Regardless of the status given to alcohol and substance abuse in the list of health concerns, the consequences can be far-reaching. In the aforementioned 116-school study by the Harvard School of Public Health, 63% of 7,061 underage students had consumed alcohol in the past 30 days and 94% claimed that it was either easy or very easy to obtain alcohol (Wechsler, Kuo, Lee, & Dowdall, 2000). Easy access to alcohol, peer pressure, feelings of inadequacy, pressure to achieve, and a party atmosphere are all factors in alcohol use on campus. Fish and Nies (1996) point out that alcohol use is more common in the 18-25 age group than any other. It may be the case that the college campus is an ideal environment in which to use and abuse alcohol. In comparing college students to the population as a whole, Wright, Norton, Dake, Pinkston, and Slovis (1998) note that the rates of drinking are higher among college students than those of comparable age who do not attend college. One could argue that young adults not attending college are more

likely to have employment and family obligations than do college students and are, therefore, less likely to use alcohol.

Some have attempted to quantify and qualify alcohol use among college students. For example, reporting on a study of 140 colleges, Wright et al. (1998) noted that 44% of students were “binge drinkers,” which was defined as having “five or more drinks on a single occasion within a 2-week period” (p. 909). Attempts have been made to identify the typical binge drinker. For instance, Keeling (1999) describes the average binge drinker as “white, male, young, (under 23 years old, mostly), relatively secure economically, [and] often social leaders (many in fraternities)” (p. 101). However, females are by no means immune to the temptation of alcohol at college. In a study of 101 Vanderbilt students presenting to the emergency department at Vanderbilt University Hospital, Wright et al. found that of 28 students diagnosed with severe intoxication, 18 (64%) were freshmen and 16 (57%) were female. Unfortunately, male or female, binge drinking or not, alcohol use is linked to a multitude of health problems. Patrick et al. (1992) estimate as many as 25% of deaths in the college student population may be associated with alcohol consumption. This would not only include overdose and motor vehicle accidents but self-inflicted injury as well. In addition to fatalities, alcohol contributes to health problems in other ways. Grace (1997) states, “Alcohol has been related to nearly two thirds of violent behavior, one half of physical injuries, one third of emotional difficulties, and one third of academic problems that occur on campus” (p. 246). Furthermore, it is widely known that the use of alcohol can decrease the user’s inhibitions regarding personal behavior and, specifically, sexual behavior. Wright et al. include “unplanned and high risk sexual activity, sexual assaults, ... and other

unintentional injuries” (p. 909) to the list of consequences of alcohol use and abuse.

Other health problems exist in the college population but certainly chronic and noninfectious disease, sexual health conditions, and alcohol abuse are all of concern to college health professionals.

Student Use of Student Health Services

The use of health services by college students has been tremendous in the past as well as today. In their study on SHS usage, Sidhu and Klotz found that a high percentage of students sought care at the SHS (Cited in Wright & Atwood, 1978). In the last decade, it has been shown that college students continue to use the SHS in high numbers. Patrick et al. (1992) found that college students make two to three visits per school year to student health services. Some have attempted to attach a dollar amount to these visits. For example, Woolard et al. (1995) cite findings showing that about 10 million students visit SHSs for a total of approximately 20 to 25 million visits each year, the cost of which is about \$1.4 billion. Many factors are involved in use of student health services by students. Factors may include availability and student knowledge of services, hours of operation, financial ability, patient satisfaction and students’ attitudes toward the SHS. In regards to availability, Woolard et al. point out that at rural colleges, the SHS may be the only healthcare available to students. Even in larger area, private physician practices frequently limit the numbers of new patients allowed in the practice. Furthermore, the students must have knowledge of the available services to them as part of the SHS. For example, in a study at the University of Kentucky, Stephenson (1999) found that, while many students who actually used the SHS were satisfied, many were unaware that among

services available to students were mental health services as well as chronic disease management.

As previously mentioned, it has been suggested that young adults do not perceive themselves susceptible to illness or injury. While it may be true of young adults' perception, others have disagreed with both the stereotypical age range (as has been previously discussed) as well as the concept of "optimal health." First of all, in the general population of 19 to 24 year olds, Brindis and Reyes (1997) points out that according to the national studies involving healthcare expenditure, young adults in this age group average 3.5 visits per year to a physician. However, this 3.5 visit contact rate applies only to 50-57% of college students because of the wide age-range presently found on college campuses (Olson & Autio, 1999; Patrick et al., 1992). In a society of "well-checks," college students may not fare similarly. In fact, Reith (1991) points out that a large portion of visits to student health services are for medical treatment of illness.

Patient Satisfaction

Patient (student) satisfaction with the service provided at the SHS can be an influential factor in the student's experience with healthcare. According to a definition by Press (1994), "Patient satisfaction reflects the broadest range of experience within the entire institution. It encompasses technical interventions, personal interaction, logistical, environmental, dietary, and a host of other experiences with care" (p. 60). At this point, a differentiation must be made between the role patient satisfaction plays and the variables within patient satisfaction.

The Role of Patient Satisfaction. Many authors have noted that patient satisfaction, in part or whole, determines if, when, where, and by whom the patient is seen and if he will follow the recommended plan of care (Dansky, Colbert, & Irwin, 1996; Gillette, Byrne, & Cranston, 1982; Hailey, Pargeon, & Crawford, 2000; McDaniel, 1979). In the student health service situation, a dissatisfied student may convince others not to visit a specific provider, may not follow the treatment regimen planned by the provider, and may not follow up as directed. An atmosphere of dissatisfaction among students by those who have and have not used the SHS can result with possible consequences to those students in terms of health outcomes, cost to go to a private physician or emergency department and confidence in the university's ability and desire to provide adequate and appropriate medical care.

The Variables within Patient Satisfaction. The variables put forth by authors to determine an appropriate measure of patient satisfaction are virtually inexhaustible in both type and nature. An attempt to encompass all aspects would be an arduous task indeed but there are several categories on which many have agreed. Further, each variable presents an opportunity to become a barrier to the student seeking care.

Communication. Communication between the provider and patient is one aspect mentioned among those studying patient satisfaction (Gillette et al., 1982; Glanz, Lewis, & Rimer, 1997; McDaniel, 1979). In a study by Jackson, Chamberlain, and Kroenke (2000) of 500 adults at a walk-in clinic at Walter Reed Army Medical Center, doctor-patient communication was cited as the measure most strongly related to satisfaction.

Others have explored the facets of communication individually. Hailey et al. (2000) make reference to an increase in satisfaction “when the physicians use speech that is consistent with the patient’s usage” (p. 111). Satisfaction with a physician’s ability to communicate extends far beyond use of speech, politeness or even medical knowledge. According to Glanz et al. (1997), increased satisfaction is noted when patients are treated in a “more partner-like manner” by the physician (p. 212). While the provider-patient relationship could be considered as the primary arena in which communication is important, certainly communication with other staff, verbally and nonverbally (e.g., body language, written instructions, and pamphlets) could all present opportunities to measure patient satisfaction.

Time. As mentioned briefly, time can be of great importance to the patient. The time factor as it relates to the patient experience is present in a number of ways. One of the most apparent is waiting time to be seen by a provider in both the waiting room and in the treatment room. According to Gillette et al. (1982), “Patient dissatisfaction has been linked frequently to excessive waiting time” (p. 168). It has been recognized that wait time can be of special significance to the college student. A correlation to this phenomenon has been assigned by Brindis and Reyes (1997) who have concluded that, developmentally, younger students tend to have a greater need for prompt appointments because of a low threshold for waiting. In addition, the ability to be seen quickly or conveniently to the student’s schedule and the length of time the physician and other staff spend with the student are aspects of the time factor. Multiple authors use instruments with items on wait time to see a physician (Comstock & Slome, 1973; Dansky et al.,

1996; Kisa & Dziegielewski, 1999; Wright & Atwood, 1978). Moreover, the Student Health Services (SHS) scale (Franklin & McLemore, 1967) and a student questionnaire by McDaniel (1979) include an item on the feeling of being rushed at the appointment and time spent with the physician respectively. Less frequently considered is the length of time for a patient to receive notification of laboratory or radiology results or length of time needed to get a referral to outside resources.

Technical Competence. Items regarding the technical competence of the reception services, nursing and ancillary staff and providers can comprise a substantial number of items found on a patient satisfaction survey. However, McDaniel (1979) points out, “The lack of technical medical expertise has been said by experts to invalidate the patient’s evaluation of care” (p. 214). True or not, the perception of competence or any other satisfaction items need not be based on health knowledge to be influential to the patient.

Language in earlier surveys such as the SHS scale by Franklin and McLemore (1967) focused on “doctor” competence. However, as the healthcare setting has evolved over time, nurse practitioners (NPs) and physician assistants (PAs) have been employed to meet many of the needs in a student health service. Therefore, phrasing in more recent surveys such as the questionnaire used by Gillette et al. (1982) and the Patient Satisfaction Questionnaire by Hailey et al. (2000) has been changed to practitioner and healthcare provider respectively.

Other Variables. Other patient satisfaction variables studied by researchers over time have included cost, the physical structure in which care is provided (Donabedian, 1988), availability of technological equipment (Kisa & Dziegielewski, 1999), accessible location (McDaniel, 1979), and in relation to the seriousness of the patient's physical complaint (Comstock & Slome, 1973). Additionally, the study by Jackson et al. (2000) as previously mentioned and a literature review on 23 satisfaction studies by Rao, Weinberger, and Kroenke (2000) focused on the ideas of patient expectation and unmet needs upon which to evaluate patient satisfaction. All of these variables are worthy of consideration when providing care to college students. Moreover, in determining the variables most important to the patient, improvements in the student health service could be made based on findings of these studies.

While innumerable patient satisfaction variables could be explored, the combination of the variables as they relate to the overall student experience is of primary concern here. Also, the importance the student places on the service (to be discussed in the following chapter) is of particular interest. The individual factors described are by no means irrelevant. However, space, time and financial constraints prohibit the survey instrument from collecting data on all aspects of patient satisfaction.

CHAPTER 3

METHODOLOGY

Research Situation

East Tennessee State University is a school of approximately 12,000 students as of October 2001 (www.etsu.edu/geninfo.htm). ETSU provides many healthcare options through the student health service (SHS), open Monday through Friday, from 8:00am until 4:30pm and located in Rooms 55 and 53 of John P. Lamb Hall. Room 55 is the reception area with a “sick visit” waiting room. Room 53 contains a “well visit” waiting area, office of the director of the student health service, patient exam and treatment rooms and the offices of the providers and support staff.

As a nurse-managed clinic under the auspices of the College of Nursing, the staff consists of nurses, one full-time nurse practitioner, five part-time nurse practitioners, and six consulting physicians. The physicians accept limited appointments based on referral from the nurse practitioners. The average physician clinic time varies from six hours per week during the academic year of September through April to three hours per week from May through August. The operating budget for the SHS is derived from the Student Activity Fees and was \$430,000 including salary and benefits for the fiscal year of 2000-2001. Both full- and part-time students are eligible for the services; however, students who are temporarily out of school or who have already graduated are not eligible.

Every year, several hundred students visit the student health service at East Tennessee State University during the summer months. These students present to the SHS with a variety of healthcare needs. The SHS is open during all three summer

sessions. These sessions were divided as follows in Summer 2001: Pre-Summer (May 14-June 1), Session 1 (June 4-July 9), and Session 2 (July 10-August 13). During an initial meeting with the SHS director, it was decided that the researcher would be required to personally distribute the surveys to the students due to the heavy workload of the SHS staff. Also, the number of students presenting to the SHS during the individual sessions was not known. With this information in mind, the researcher, in consultation with the thesis committee, decided the minimum number of surveys required for the study would be set at 100. Because of the assumed lower attendance of students in the Pre-Summer session, it was decided that the surveys would be distributed only to the students presenting in Session 1 and Session 2. The sample included all students enrolled in classes full- or part-time, on- or off-campus, and from all programs of study regardless of age, gender, or year in school (freshman, sophomore, etc.).

As previously mentioned, the student health service has separate waiting rooms for “sick” and “well” visits, and the sample included students from both rooms. A patient in for a sick visit is triaged by a registered nurse (RN) to determine the most appropriate provider for his or her condition. Well visits include those for immunizations, allergy injections, blood pressure checks, lab results, and refills on medications such as birth-control pills. The SHS also offers gynecological services including PAP smears, sexually transmitted disease (STD) testing, and pregnancy testing. Selected prescription and over-the-counter medications are available in the SHS pharmacy at a discounted cost to the student. A dental hygiene center is located on-campus but is not directly affiliated with the services provided at the SHS.

The sample was chosen out of convenience from those students entering the service. Prior to Session 1, the director of the student health service asked that the researcher personally distribute the surveys. Just prior to Session 2, the director and staff of the SHS consented to distribute the surveys on behalf of the researcher. For the most part, students completed the survey prior to being seen by the registered nurse or nurse practitioner.

Students made a total of 1,164 visits to the SHS over the summer with 220 in Pre-Summer, 450 in Session 1 and 494 in Session 2. The SHS does not differentiate between genders in recording numbers of students seen. However, it is interesting to note that a portion of these students (e.g., allergy patients) is seen as often as once a week. These “repeat” patients were instructed by the researcher and staff not to complete more than one survey. The number of repeat patients during Session 1 and Session 2 was not obtainable due to confidentiality issues. The surveys were distributed on different days of the weeks during both sessions. In Session 1, 120 students were offered the survey and 70 students completed the survey with a response rate of 58.3%. In Session 2, an estimated 136 students were offered the survey and 81 completed it with a response rate of 59.6%.

The Importance-Performance Technique

As a measure of consumer expectation and of satisfaction, the Importance-Performance technique has been useful in measuring satisfaction in the marketing arena. Because of the complexity of the technique, its development warrants a brief explanation. According to authors Myers and Alpert, it was argued “that only a limited set of

attributes, the ‘determining attributes,’ play a critical role in determining choice between alternatives” (Cited in Swan and Combs, 1976, p. 26). Swan and Combs give a practical example using automobiles by stating, “If all automobiles are safe enough to meet a buyer’s requirements then safety is not a determining attribute” (p. 26). Therefore, discovering the determining attributes of any one field, product, or service could certainly be an arduous task for any researcher. The use of focus groups or preliminary surveys would be a practical first step. However, by determining those factors that are attractive to consumers and by eliminating the ones that are not, a product or service of any kind could be potentially restructured to increase cost effectiveness, decrease waste and increase consumer satisfaction.

As a case in point in the area of consumerism, the chain of Motel 6® establishments offer a “clean, comfortable room at the best price of any national chain” (www.motel6.com). Through either research or presumption, the marketing campaign assumes that its target population places importance on cleanliness, comfort, and affordability, all of which are separate attributes. However, these may or may not be determining attributes. If asked by a consumer, most, if not all, hotel chains would at least purport to have clean and comfortable rooms. By certain health and safety regulations, all hotels in the United States are obliged to meet minimum requirements on cleanliness of features including bed linens. Given these requirements with all hotels being theoretically equal in terms of cleanliness, the use of the words “best price” may be the determining attribute by which the consumer decides between one hotel and another.

Likewise in the healthcare arena, a move toward viewing the patient as a healthcare consumer has taken place in recent years. Insurance companies, wellness

programs, and health advocate groups have all demonstrated marketing techniques through television, radio, and magazine articles. Even with the simplest or least refined marketing campaigns, the aspects of the promotion that are considered the determining attributes are presented to the consumer. On a smaller scale, private physicians' offices will advertise the insurance companies with which the office participates or will offer to file insurance as an attraction to patients. Nonetheless, some attributes in healthcare are considered standards of practice. For example, in the United States, patient confidentiality of records mandates that a signature of the patient be required to release medical records to any agency or person. Therefore, confidentiality is assumed and perhaps not a determining attribute of where patients seek care. The question remains as to what the determining attributes of a student health service are as they apply to college students.

Kennedy and Kennedy (1987) applied the Importance-Performance technique to the University Health Service (UHS) at Pennsylvania State University (PSU). Given the notion of determining attributes, the development of the survey itself can be critical. In evaluating the UHS of PSU, the director of health promotion and education, her staff and a University Health Services Strategic Planning Task Force developed the feature list, shown in Table 1. This feature list remained the same in both the importance and performance sections of the questionnaire used at PSU because the UHS offered all of the 33 services to PSU students. This feature list was revised for use at ETSU was revised and these modifications are discussed in further detail in the "Descriptive Survey Research Design" section of this thesis.

Table 1

Feature List from Pennsylvania State University Health Services (Kennedy & Kennedy, 1987)

1	Urgent care
2	Contraception education
3	Sexuality education
4	Pharmacy
5	Ambulance service
6	After-hours care
7	Primary health care
8	Psychological counseling services
9	Emergency psychological and psychiatric services
10	Women's health clinic
11	Nutrition education
12	Sexual health care
13	Health promotion
14	X-ray
15	Alcohol education
16	Special events emergency coverage
17	Laboratory
18	Patient education
19	Nutrition counseling

Table 1 (continued)

20	Psychiatric services
21	Social services
22	Emergency dental
23	Physical therapy
24	Preprofessional experience ^a
25	Athletic injuries
26	In-patient care
27	Public health
28	Preventive dental care
29	Nurse clinic
30	Teaching ^a
31	Food service to patients ^a
32	Sports medicine
33	East Halls Clinic ^a

^aThese items were removed from the PSU feature list and the remaining 29 items constituted the ETSU feature list in the Importance section of the survey.

In keeping with the study by Kennedy and Kennedy the target population of this study involved the portion of students enrolled in classes in the summer months. However, whereas the UHS study took the sample from the entire summer student

population, the sample at ETSU includes only consumers of the student health service during the summer months.

Objectives

The objectives of this survey were as follows:

1. To determine demographics of students visiting the student health services in the summer sessions.
2. To evaluate the importance summer students place on specific healthcare services.
3. To evaluate the performance (i.e., patient satisfaction) of the SHS on specific healthcare services as rated by the summer students.
4. To make possible recommendations to the SHS regarding services on which to concentrate during the summer sessions.

In meeting these objectives, the study will serve to offer valuable feedback to personnel and administration in the SHS in terms of patient satisfaction. Also, the results of this study may provide useful information with regards to expansion of services provided to the summer students or reduction in services which the students rate are of least importance.

In approaching this topic of study, other methods of obtaining students' opinions on healthcare services could have been used. For example, the use of focus groups could have provided a forum through which students could have given healthcare opinions. However, a focus group would have been held face-to-face with the interviewer and would have been lacking in student anonymity. Responses to importance and satisfaction

could have been biased if the focus group participants were afraid to respond honestly. Moreover, students may have been reluctant to admit to services they had used (e.g., contraception education, psychological counseling services) in front of a group of peers. Additionally, for the purpose of this study, only consumers of the SHS were approached to participate. In order to form a focus group of SHS consumers, patient confidentiality might have been breached to recruit participants. Similarly, surveys through the mail or over the telephone would have required the names, addresses, and telephone numbers of students from the SHS patient lists. Therefore, the descriptive survey research design was chosen because of the anonymity provided to the student and its use in gathering only the necessary data. Certainly, the student maintained the right to refuse participation as denoted by the cover letter.

The Descriptive Survey Research Design

Along with a brief cover letter explaining its purpose, each student was asked to complete a three-page survey. All efforts were made to protect the student's identity on the survey because health is both private and personal. It was hoped by the researcher in this way that honest responses would be given by the students. The first page was composed of demographic items. Items 1, 2, 3a, 3c, 6a, 6b, 7 and 8, (age, gender, full-versus part-time status, housing status, college of declared major, type of degree, zip codes of the student, and immediate family respectively), were based on the demographics page of the student health service survey that has been administered to the students by SHS personnel for the past two years in the spring semester. The age categories were 18-21, 22-27, 28-33, 34-39, and 40+. Students selected either on- or off-

campus as their housing status. The options in the “college of declared major” section included applied science and technology, arts and sciences, business, education, graduate studies, nursing, medicine, public and allied health, School of Continuing Studies, undeclared, and other. Students selected the type of degree that they were pursuing as associate, bachelor, master, or doctorate. These items were repositioned on the page and numbered to aid in the processing of responses. The student’s year in school, (freshman, sophomore, junior, senior, or graduate), transportation to health clinic (walked, shuttle, bike, in a private vehicle, or other), and number of past visits made by the student (0, 1-2, or 3 or more) were added to gain clarity on the types of students using the service. The researcher dated the surveys from the first session while the students from the second session were asked to date the surveys prior to returning them to the front desk.

The second and third pages of the instrument were based on the Importance-Performance (I-P) scale on university health services (UHS) used by Kennedy and Kennedy (1987). This I-P scale initially consisted of 33 services offered at the UHS of PSU in 1987. This instrument was altered in two main respects prior to being offered at East Tennessee State University. First of all, four items, pre-professional experience, teaching, food service to patients, and East Halls Clinic, were removed from the original scale. The meaning of the first three items was unclear to the researcher, thesis committee, and SHS director, and the items were removed to improve the validity of the instrument. The East Halls Clinic was a satellite clinic offered specifically to the students at Pennsylvania State University and was, therefore, omitted from the survey feature list. The remaining 29 items made up the second, or “Importance,” page of the survey together with the original seven-point Likert scale ranked from 1 (not important) to 7

(very important) (See Table 1). All 29 items were included though ETSU does not offer all of them. Because of the unique opportunity to gain insight on the services important to the summer population, the SHS director agreed to this. In this way, the staff and administration of the ETSU student health service have a basis for choosing additional services to complement the SHS should financial support become available in the future. For example, while the SHS does not provide x-ray or special events emergency coverage (e.g., football games), if a majority of students reported that these services were of extreme importance, the administration could consider integrating them into the SHS at some point in time. The survey included a disclaimer at the top of this second page stating that ETSU does not in fact offer all the services so as not to mislead students in regards to current ETSU services.

The second major alteration to the original I-P scale was the formatting of the third, or “Performance,” page of the survey. In the study by Kennedy and Kennedy (1987), the original sample included summer students across campus and not strictly consumers of the UHS. The performance section contained a seven-point Likert scale ranked from 1 (not satisfied) to 7 (very satisfied). In the study at ETSU, a “never used” column was added to the performance section in which the students could circle an asterisk (*) if they had never used the service. Also, the items on the performance list were abbreviated to reflect only those services provided by the ETSU student health service or affiliates on campus (See Table 2). Both the health education coordinator and the SHS director reviewed the list for accuracy.

In reference to the reliability of the instrument, as directed by Martilla and James (1977), the importance and performance lists were separated to help minimize

Table 2

Feature List for the Performance Section from the East Tennessee State University Student Health Service Survey

1	Urgent care
2	Contraception education
3	Sexuality education
4	Pharmacy
5	Primary health care
6	Psychological counseling services
7	Women's health clinic
8	Nutrition education
9	Sexual health care
10	Health promotion
11	Alcohol education
12	Laboratory
13	Patient education
14	Nutrition counseling
15	Athletic injuries
16	Public health
17	Nurse clinic

compounding and order effects. If the importance and performance of an attribute were asked consecutively, Martilla and James argue, the response to the first could influence the response to the second. Additionally, in the analysis of the results from ETSU, the responses given by students from Session 1 will be compared to those from Session 2. This not only serves to ascertain the reliability of the instrument but will also show any notable differences between those surveys distributed by the researcher personally and those distributed by the SHS staff.

Several measures were taken to improve the validity of the instrument. As aforementioned, three items on the feature list were removed due to the uncertainty of their meanings. Also, as in the original Pennsylvania State survey, the language was kept simple to keep ambiguity of the meaning of the items to a minimum. Furthermore, as the purpose of the instrument was to evaluate the student's experience with the service, no mention of healthcare providers was made. It was intended that this would help minimize the influence of potential personality differences between the student and staff. Finally, in the meetings with the SHS director and health education coordinator, attempts were made to determine whether or not the survey was appropriate in relation to the objectives.

Limitations

The limitations of the research design are twofold. First of all, the student is not questioned regarding the reasons for dissatisfaction (rating the item as low performance). Similarly, the student is not asked why he or she values certain services over others in the importance section. These reasons might be useful in improving existing services offered

at the SHS. Secondly, students outside of the SHS were not included in the sample. If included, the services important to non-consumers might be ascertained in order to both expand services and attract the non-consumers to the student health service.

Analytical Tool

In the analysis of the Importance-Performance scale used at ETSU, two statistics, the median and the mean, were calculated. In the example of the Pennsylvania State survey, the author calculated the mean scores for each item or service. However, according to Martilla and James (1977) on Importance-Performance analysis, both the medians and the means should be calculated with the median, in theory, being the preferable measure of central tendency. Martilla and James concede that if the mean and median are “reasonably close,” the mean should be used in the final analysis (p. 79). Also, in the analysis, a two-dimensional, four-quadrant grid was formed from the results (See Table 3).

Table 3

The Four Quadrants Used in the Importance-Performance Technique

High importance (≥ 5)	<u>Quadrant A</u> Concentrate here	<u>Quadrant B</u> Keep up with the good work
Low importance (< 5)	<u>Quadrant C</u> Low priority	<u>Quadrant D</u> Possible overkill
	Low performance (< 5)	High performance (≥ 5)

The four quadrants were titled according to the placement of the item on the importance and performance axes. The titles adapted from Martilla and James (1977) were as follows:

1. Quadrant A, “Concentrate here”: high importance, low performance.
2. Quadrant B, “Keep up with the good work”: high importance, high performance.
3. Quadrant C, “Low-priority”: low importance, low performance.
4. Quadrant D, “Possible overkill”: low importance; high performance. (p. 78)

Using the Pennsylvania State survey as a guideline, the line of distinction on the two scales of importance and performance was set at 5. That is, ratings of 5 and greater were considered important or satisfactory while ratings of less than 5 were considered unimportant or unsatisfactory. The East Tennessee State University SHS director agreed to this line of distinction, as did the thesis committee and researcher.

CHAPTER 4

ANALYSIS

The purpose of this study on the East Tennessee State University student health service is fourfold: to determine summer student demographics, to evaluate the importance of specific services as rated by the students, to evaluate the performance of those services offered at ETSU, and to make recommendations to the SHS. Using the Importance-Performance technique, 29 specific health services were presented to the student to rank on a 7-point Likert scale ranging from 1 (not important) to 7 (very important). The performance of 17 of the 29 services actually offered on the ETSU campus was also rated from 1 (not satisfied) to 7 (very satisfied). Each of the aforementioned objectives will be discussed individually and in combination as appropriate.

Student Demographics

As previously mentioned, the student demographics page was taken in part from the satisfaction survey administered by the SHS for the past two years in February. Although the items were repositioned on the page, the resulting demographics from this study may be compared to the previous surveys if the SHS administration wishes to do so.

Session 1

In Session 1, 120 students were offered the survey containing the demographics page and the I-P scale of services. Seventy students completed the survey with a response rate of 58.3%. Of these, 22 (31.4%) were male and 47 (67.1%) were female and 1 (1.4%) gave no response to gender. The age range of the students was varied in Session 1 with 29 (41.4%) aged 18-21, 26 (37%) aged 22-27, 10 (14.3%) aged 28-33, and 5 (7.2%) aged 34 and older (Due to low responses, the last two age categories, 34-39 and 40+, were combined in the analysis).

While the demographics page was designed to be as straightforward as possible, one section in particular had a low response rate. This section was headed as the “student classification” section and included three parts: (a) Full- versus part-time status, (b) year in school (freshman, sophomore, etc.) and (c) housing status (on- or off-campus). All three parts had some rate of “no response” from 8.6% to year in school to 55.7% to housing status. A full 30% (21) had no response to the first section, full- versus part-time status. One reason for the low number of responses to this item in particular could be due to the differences between full- and part-time statuses at ETSU. Full-time status for an undergraduate student is 12 hours or more. Graduate students must take more than nine hours per semester to be considered full-time. A second reason for the low number of responses could be of confusion regarding full- versus part-time status as applied to the summer sessions. The summer sessions are shorter than a regular semester in numbers of weeks while time spent in class daily is usually extended. This difference may have confused some students. Also, some students may have been taking classes at ETSU for

transfer to another institution and may have thought that the questions regarding student classification did not apply to them. Another reason for the low responses to these items could have been because the three parts were single-spaced on the page and presented as parts of the same question. In retrospect, had these items been either double-spaced or made into three separate questions, the response rates might have been higher.

As it was, 91.5% of students responded to year in school with the majority (23) being seniors, followed by 15 juniors, 13 sophomores, four freshmen, and nine graduate students. Ten students (14.3%) indicated on-campus status; 21 (30%) marked off-campus status. The mode of transportation taken to the SHS could indicate a much higher portion of off-campus students than those who responded because 70% (49) indicated arriving in a private vehicle as opposed to the 30% (21) who walked. No students took the ETSU shuttle or rode bikes to the SHS.

Rates of past number of visits were high for these summer students. Only 10 (14.3%) indicated that they had never used the SHS in the past prior to the date the survey was administered. Fifteen (21.4%) indicated visiting the SHS one or two times in the past and 45 (64.3%) indicated visiting the SHS three or more times. This is particularly relevant because the performance section of the survey is dedicated strictly to those students who have been consumers prior to the visit in which the survey was completed. It would not be accurate for a majority of the students to rate the SHS performances as satisfactory or unsatisfactory if they had never taken an opportunity to use the services.

In the college of declared major section of Session 1, most students (21.4%) were education majors. It is interesting to note that 16 students (22.9%) were studying health

sciences in the fields of nursing, medicine, or public and allied health. The type of degree most students were pursuing was overwhelmingly a bachelor's degree (80%).

Session 2

In Session 2, approximately 136 students were offered the survey. The number of students offered in this second session is estimated because on the last date of surveying, the SHS staff handed out the remaining 3 surveys to be completed. While it is not known the number of students offered the survey before these last three were completed, the response rates for Session 1 and Session 2 were nearly 60% each. Therefore, it would have theoretically taken offers to five students to receive three completed surveys. Also, it was during the middle of the surveying process in Session 1 that the minimum number of surveys (100) had been completed by students. The SHS staff members were approached by the researcher and were asked if they would consider administering 50-60 additional surveys. They cheerfully agreed and were given 54 additional surveys, of which three were incomplete and, therefore, unusable.

Using the estimated 136 students, 81 completed the survey in Session 2 with a response rate of 59.6%. Of these, 24 (29.6%) were male and 57 (70.4%) were female, similar to the ratio found in Session 1. In Session 2, the age range varied with 20 (24.7%) aged 18-21, 42 (51.9%) aged 22-27, 10 (12.3%) aged 28-33, and 9 (11.1%) aged 34 and older. Again, in Session 2, the rate of "no response" for the three student classification items was particularly high with rates from 12.3% (student year) to 58% (on- or off-campus). Likewise in Session 2, most (23) were seniors. However, the number of graduate students in Session 2 more than doubled to 22 students (as opposed

to nine in Session 1). This was followed by 14 juniors, seven sophomores, and five freshmen. Again, the mode of transportation taken to the SHS could indicate a higher-than-reported portion of off-campus students. While only 28 (34.6%) of students indicated off-campus housing, 58 (71.6%) arrived by private vehicle. Twenty-one (25.9%) walked and 2 (2.5%) rode a bike to the SHS. Similarly to Session 1, 46 (56.8%) students visited the SHS three or more times, 21 (25.9%) visited one or two times and 14 (17.3%) had never visited the SHS.

The college of declared major section for Session 2 showed a wide range of student choices with the least marked item as undeclared (2 students). Both the College of Applied Science and Technology and the College of Arts and Sciences claimed 13 students each. In Session 2, 27 students (33.3%) reported health-related majors. Most students (61.7%) were pursuing a bachelor's degree.

Importance-Performance Analysis

As previously mentioned, in Importance-Performance analysis, both the median and mean should be calculated for each item on the feature list as rated by the students. For the 17 items on the feature list that the SHS at East Tennessee State University offers, a true I-P score was calculated. On the remaining 12 items, both the medians and means were calculated on the importance of the service to give feedback to the student health service. The students were divided first by the session in which they visited and then by gender.

To review, the calculation of an I-P score places the combined student rating into one of four quadrants:

1. Quadrant A, “Concentrate here”: high importance, low performance.
2. Quadrant B, “Keep up with the good work”: high importance, high performance.
3. Quadrant C, “Low-priority”: low importance, low performance.
4. Quadrant D, “Possible overkill”: low importance; high performance.

(Martilla & James, 1977, p.78)

The researcher primarily used the median scores (unless otherwise indicated) as suggested by Martilla and James (1977). As a result, several commonalities between males in the two sessions were found. Firstly, the following items were rated as high importance and high performance (Quadrant B) by males in both sessions: urgent care, pharmacy, primary healthcare, health promotion, patient education, public health, and nurse clinic. Additionally, Session 1 males ranked the athletic injuries item into Quadrant B. The women’s health clinic was given a performance rating by two male students (one in each session) but this I-P score was not considered valid by the researcher.

Secondly, the four items were rated as low importance, high performance (Quadrant D, described as “possible overkill”) by males in both sessions. These items consisted of contraception education, psychological counseling services, alcohol education, and laboratory. Additionally, Session 1 males placed sexuality education, nutrition education, sexual healthcare, and nutrition counseling in this quadrant. Session 2 males placed these four items in Quadrant C (low importance, low performance) instead. When both sessions were combined, males placed contraception education and

sexuality education in Quadrant C based on either medians or means (See Tables 4 and 5).

Based on median scores, there was an overwhelming consensus between females in both sessions on 13 items (See Tables 6 and 7). All 13 were placed in Quadrant B (high importance, high performance). These included urgent care, contraception education, sexuality education, pharmacy, primary healthcare, women's health clinic, nutrition education, sexual healthcare, health promotion, laboratory, patient education, public health, and nurse clinic. Additionally, Session 1 females placed nutrition counseling into this quadrant. Alcohol education was rated as low importance by females from both sessions but Session 1 females rated it as a high performance item (Quadrant D) and Session 2 as a low performance item (Quadrant C). Similarly, psychological counseling services and athletic injuries were given low performance ratings. Session 1 females ranked these two items as "low priority" (Quadrant C) and Session 2 ranked them as "possible overkill" (Quadrant D). When both sessions were combined, females placed alcohol education and athletic injuries in Quadrant C based on mean scores (See Tables 6 and 7).

An analysis of the findings for all students in both sessions was summarized (See Tables 8 and 9). In an effort to determine if using the mean rather than the median would make a significant difference in the ratings students placed on services, the mean I-P score was used in the following analysis of all students from both sessions. Based on the means, all students regardless of session placed the following services in Quadrant B ("Keep up with the good work"): urgent care, pharmacy, primary healthcare, women's health clinic, patient education, and nurse clinic. All students regardless of session

Table 4

Importance-Performance Scores for Services Offered at ETSU Student Health Service by Males Based on Median (Ranked by Quadrant)

Feature	Importance Rating	Performance Rating	Quadrant	Performance n=
1. Urgent care	6.5	6.0	B	16
4. Pharmacy	6.0	6.0	B	23
5. Primary health care	6.0	6.0	B	24
10. Health promotion	5.0	5.0	B	11
13. Patient education	5.0	5.0	B	18
15. Athletic injuries	5.0	6.0	B	13
16. Public health	5.0	6.0	B	19
17. Nurse clinic	5.0	6.0	B	29
2. Contraception education	4.0	4.0	C	8
3. Sexuality education	4.0	4.0	C	7
6. Psychological counseling services	4.0	6.0	D	38
7. Women's health clinic ^a	4.5	5.0	D	2
8. Nutrition education	4.5	6.0	D	9
9. Sexual health care	4.0	5.0	D	4
11. Alcohol education	4.0	5.5	D	8
12. Laboratory	4.0	6.0	D	20
14. Nutrition counseling	4.0	5.0	D	11

^aThis rating is not considered valid based on the gender.

Table 5

Importance-Performance Scores for Services Offered at ETSU Student Health Service by Males Based on Mean (Ranked by Quadrant)

Feature	Importance Rating	Performance Rating	Quadrant	Performance n=
1. Urgent care	5.80	5.50	B	16
4. Pharmacy	5.31	5.43	B	23
5. Primary health care	5.37	5.58	B	24
17. Nurse clinic	5.20	6.00	B	29
2. Contraception education	3.93	4.88	C	8
3. Sexuality education	3.61	4.29	C	7
9. Sexual health care	3.93	4.75	C	4
6. Psychological counseling services	3.78	5.00	D	38
7. Women's health clinic ^a	4.13	5.00	D	2
8. Nutrition education	4.30	5.44	D	9
10. Health promotion	4.70	5.18	D	11
11. Alcohol education	3.93	5.13	D	8
12. Laboratory	4.07	5.55	D	20
13. Patient education	4.57	5.33	D	18
14. Nutrition counseling	4.33	5.18	D	11
15. Athletic injuries	4.85	5.38	D	13
16. Public health	4.89	5.79	D	19

^aThis rating is not considered valid based on the gender.

Table 6

Importance-Performance Scores for Services Offered at ETSU Student Health Service by Females Based on Median (Ranked by Quadrant)

Feature	Importance Rating	Performance Rating	Quadrant	Performance n=
1. Urgent care	6.0	6.0	B	41
2. Contraception education	5.0	6.0	B	32
3. Sexuality education	5.0	6.0	B	19
4. Pharmacy	6.0	6.0	B	65
5. Primary health care	6.0	6.0	B	68
7. Women's health clinic	6.0	7.0	B	39
8. Nutrition education	5.0	6.0	B	16
9. Sexual health care	5.0	6.0	B	20
10. Health promotion	5.0	6.0	B	24
12. Laboratory	5.0	6.0	B	51
13. Patient education	5.0	6.0	B	42
16. Public health	5.0	6.0	B	35
17. Nurse clinic	5.0	6.0	B	61
11. Alcohol education	4.0	4.5	C	10
6. Psychological counseling services	4.0	6.0	D	12
14. Nutrition counseling	4.0	6.0	D	18
15. Athletic injuries	4.0	5.0	D	11

Table 7

Importance-Performance Scores for Services Offered at ETSU Student Health Service by Females Based on Mean (Ranked by Quadrant)

Feature	Importance Rating	Performance Rating	Quadrant	Performance n=
1. Urgent care	5.93	5.71	B	41
4. Pharmacy	5.58	5.95	B	65
5. Primary health care	5.43	6.01	B	68
7. Women's health clinic	5.84	6.44	B	39
12. Laboratory	5.07	6.02	B	51
13. Patient education	5.19	5.86	B	42
17. Nurse clinic	5.18	6.31	B	61
11. Alcohol education	3.89	4.60	C	10
15. Athletic injuries	3.75	4.55	C	11
2. Contraception education	4.93	6.13	D	32
3. Sexuality education	4.54	5.74	D	19
6. Psychological counseling services	4.19	5.42	D	12
8. Nutrition education	4.67	5.63	D	16
9. Sexual health care	4.85	5.80	D	20
10. Health promotion	4.68	5.67	D	24
14. Nutrition counseling	4.35	5.83	D	18
16. Public health	4.71	5.91	D	35

Table 8

Importance Ratings for Individual Services as Rated by All Students from Both Summer Sessions (in Descending Order by Mean)

Feature	Median importance ratings	Mean importance ratings	Importance n=
1. Urgent care	6.0	5.89	151
4. Pharmacy	6.0	5.49	150
7. Primary health care	6.0	5.41	151
10. Women's health clinic	6.0	5.31	150
6. After-hours care ^a	6.0	5.23	151
28. Nurse clinic	5.0	5.18	149
27. Preventive dental care ^a	5.0	5.01	151
18. Patient education	5.0	4.99	150
22. Emergency dental ^a	5.0	4.80	151
26. Public health	5.0	4.76	151
17. Laboratory	5.0	4.75	151
13. Health promotion	5.0	4.67	151
2. Contraception education	5.0	4.58	151
11. Nutrition education	5.0	4.56	151
12. Sexual health care	5.0	4.56	151
5. Ambulance service ^a	5.0	4.50	151

Table 8 (continued)

Feature	Median importance ratings	Mean importance ratings	Importance n=
25. In-patient care ^a	5.0	4.50	150
14. X-ray ^a	5.0	4.48	151
19. Nutrition counseling	4.0	4.34	151
16. Special events emergency coverage ^a	4.0	4.32	151
3. Sexuality education	5.0	4.25	151
23. Physical therapy ^a	5.0	4.19	150
24. Athletic injuries	4.0	4.07	151
8. Psychological counseling services	4.0	4.05	151
21. Social services ^a	4.0	4.04	151
29. Sports medicine ^a	4.0	3.97	151
15. Alcohol education	4.0	3.91	151
20. Psychiatric services ^a	4.0	3.89	151
9. Emergency psychological and psychiatric care ^a	4.0	3.85	151

^aThese services are not currently provided by the ETSU student health service.

Table 9

Performance Ratings for Individual Services as Rated by All Students from Both Summer Sessions (in Descending Order by Mean)

Feature	Median performance ratings	Mean performance ratings	Performance n=
7. Women's health clinic	7.0	6.24	41
17. Nurse clinic	6.0	6.21	91
2. Contraception education	6.0	5.95	39
5. Primary health care	6.0	5.90	92
12. Laboratory	6.0	5.88	72
16. Public health	6.0	5.87	54
4. Pharmacy	6.0	5.81	89
13. Patient education	6.0	5.69	61
1. Urgent care	6.0	5.64	58
9. Sexual health care	6.0	5.63	24
14. Nutrition counseling	6.0	5.59	29
8. Nutrition education	6.0	5.56	25
10. Health promotion	6.0	5.51	35
3. Sexuality education	6.0	5.35	26
6. Psychological counseling services	6.0	5.26	19
15. Athletic injuries	6.0	5.00	24
11. Alcohol education	5.0	4.83	18

placed the following services in Quadrant D (“Possible overkill”): contraception education, nutrition education, sexual healthcare, health promotion, laboratory, nutrition counseling, and public health. Based on the means, no services were placed on Quadrant A (“Concentrate here”). Overall, the only service classified as low priority (Quadrant C) was alcohol education. In both sessions combined, based on performance scores alone and using both mean and median ratings, the summer students were satisfied with the performance of the services they used (See Table 9). (The only exception was alcohol education in which the mean was 4.83 and median was 5.0).

A comparison of the Importance-Performance scores was made between the means and medians of each service (See Tables 10 and 11). Using the median scores, the majority of services fell into Quadrant B (“Keep up with the good work”); using mean scores, the majority of services fell into Quadrant D (“Possible overkill”). With the exception of alcohol education, all services had high performance ratings. The services were basically divided in the ratings students placed on the importance on services. The number of students who reported using each service in the past ranged from 18 (alcohol education) to 92 (primary healthcare).

Importance

With regards to those 12 services East Tennessee State University SHS does not currently provide, both the median and mean was calculated for each item on the importance section only. The two services considered of high importance regardless of the statistic used were after-hours care and preventive dental care. The five services

Table 10

True Importance-Performance Scores for Services Offered at ETSU Student Health Service Based on Median (Ranked by Quadrant)

Feature	Importance Rating	Performance Rating	Quadrant	Performance n=
1. Urgent care	6.0	6.0	B	58
2. Contraception education	5.0	6.0	B	39
3. Sexuality education	5.0	6.0	B	26
4. Pharmacy	6.0	6.0	B	89
5. Primary health care	6.0	6.0	B	92
7. Women's health clinic	6.0	7.0	B	41
8. Nutrition education	5.0	6.0	B	25
9. Sexual health care	5.0	6.0	B	24
10. Health promotion	5.0	6.0	B	35
12. Laboratory	5.0	6.0	B	72
13. Patient education	5.0	6.0	B	61
16. Public health	5.0	6.0	B	54
17. Nurse clinic	5.0	6.0	B	91
6. Psychological counseling services	4.0	6.0	D	19
11. Alcohol education	4.0	5.0	D	18
14. Nutrition counseling	4.0	6.0	D	29
15. Athletic injuries	4.0	6.0	D	24

Table 11

True Importance-Performance Scores for Services Offered at ETSU Student Health Service Based on Mean (Ranked by Quadrant)

Feature	Importance Rating	Performance Rating	Quadrant	Performance n=
1. Urgent care	5.89	5.64	B	58
4. Pharmacy	5.49	5.81	B	89
7. Women's health clinic	5.31	6.24	B	41
5. Primary health care	5.41	5.90	B	92
17. Nurse clinic	5.18	6.21	B	91
11. Alcohol education	3.91	4.83	C	18
2. Contraception education	4.58	5.95	D	39
3. Sexuality education	4.25	5.35	D	26
6. Psychological counseling services	4.05	5.26	D	19
8. Nutrition education	4.56	5.56	D	25
9. Sexual health care	4.56	5.63	D	26
10. Health promotion	4.67	5.51	D	35
12. Laboratory	4.75	5.88	D	72
13. Patient education	4.99	5.69	D	61
14. Nutrition counseling	4.34	5.59	D	29
15. Athletic injuries	4.07	5.00	D	24
16. Public health	4.76	5.87	D	54

considered unimportant regardless of statistic used were emergency psychological and psychiatric care, special events emergency coverage, psychiatric services, social services, and sports medicine. Five services were considered borderline, that is, if using the medians, they were considered important, if using the means they were considered unimportant. These five services were ambulance service, x-ray, emergency dental, physical therapy, and in-patient care.

Anecdotally, using the mean scores, the 42 health students (nursing, medicine, and public and allied health majors combined) placed a startling 22 of the 29 items in the low importance category. Only seven services were rated as important by health students including urgent care, pharmacy, after-hours care, primary healthcare, laboratory, preventive dental care, and nurse clinic. If the medians had been used, only 10 of the 29 services would have been rated as important and would have included women's health, patient education, emergency dental, and public health among others. Those students reported as health majors comprised 27.8% of the total number of students surveyed.

Recommendations

In fulfilling the fourth objective of this study, recommendations can be made based on the results of the descriptive survey. First of all, as indicated by the performance section, the 151 subjects in the study reported using the 17 services from the feature list in a combined 797 instances and were generally satisfied with the services they used. The SHS could consider using the Importance-Performance format in determining performance ratings at other times of the school year. While the survey could be administered by hand, another option might be to post the survey on the website

in an interactive form. Students could be encouraged at the time of their visit to complete the on-line survey. Reporting the results in a public forum such as the university newspaper or the student health service website might inform non-consumers with regards to the quality health services available on campus.

As previously mentioned, students overall placed various items in Quadrants C (low importance, low performance) and D (low importance, high performance). The common bond between these two quadrants is low importance. In any other area of consumerism the reduction or elimination of these items might be conceivable. However, in terms of services appropriate to college students, this modification is not as realistic. For example, alcohol education (placed in Quadrant C by females and Quadrant D by males) is seen as a vital and necessary service for the college population. Citing the American College Health Association's annual meeting in May 1987, alcohol and substance abuse was rated by a majority as the second greatest threat to the health of young adults (Guyton et al., 1989) More recently, Healthy People 2010 includes reduction in binge drinking as an objective specifically designed for college students (www.health.gov/healthypeople/document/html/objectives/26-11.htm). Therefore, one recommendation is to educate college students, both male and female, as to the physical and psychological dangers of alcohol and signs and symptoms of binge drinking.

Another Healthy People 2010 objective targeted towards the college population is a proposed increase of those who receive information from their university or college on “sexual behaviors that cause unintentional pregnancies and sexually transmitted diseases, dietary patterns that cause disease” and others (www.health.gov/healthypeople/document/html/objectives/07-03.htm, paragraph 3).

This relates directly to contraception education and sexuality education, placed in Quadrant C by males regardless of statistic used. Females ranked these two items in Quadrant D based on mean scores. Therefore, one recommendation would be to target students regarding the importance of contraception education including the use of condoms to prevent sexually transmitted disease. Additionally, males and females placed nutrition education and counseling in Quadrant D based on median scores. The latter half of the aforementioned objective is dedicated to dietary patterns. Therefore, males and females alike should be counseled, perhaps during routine visits in the SHS regarding the relationship between eating habits and disease.

With this information in mind, no student health service would purposely eliminate these services. Therefore, one recommendation to the SHS might be to further investigate the manners in which students could be both educated about the importance of these services and encouraged to utilize them. For example, visitation to classes within the colleges of medicine, nursing, and public and allied health to discuss these various health topics might be one approach. Encouraging professors to assign projects within these classes regarding these least valued services might promote awareness of their importance. Furthermore, these students might be influential to students in other non-health majors.

As indicated by the importance section of the survey, preventive dental care was rated as important to students. In the interviews with the SHS director and health education coordinator, it was not mentioned that ETSU provides a dental hygiene clinic in Lamb Hall, Room 70, for dental cleaning and x-rays, performed by dental hygiene students (www.etsu.edu/cpah/dental/pages/service1.htm). Only after the survey was

completed did the researcher discover this service on campus. While the SHS does not provide the service directly, it is available to ETSU students.

One service in particular, after-hours care, could be considered an appropriate addition to the SHS should budgeting for this service become available. After-hours care for students could consist, perhaps, of one clerical staff member and one registered nurse who could be seen by students in the evenings or at night. This may minimize absenteeism from daytime classes for those services that a nurse can provide such as blood pressure checks and patient education including counseling and contraception education. After-hours care could be provided on a trial basis to determine if students would use the service. If the number of student visits after hours justified the use of a nurse practitioner, the services provided to the student would automatically expand to patient examination and treatment, prescriptions, the ordering of lab tests, and other urgent care needs appropriate to a nurse practitioner's scope of practice. In either case, a nurse or nurse practitioner could assess the student and make recommendations as to whether or not the student needed emergency medical attention and could direct the student to the nearest emergency department. With these recommendations aside, according to the overall results from the summer study, the SHS has provided excellent care to these ETSU students in the past.

CHAPTER 5

CONCLUSIONS

The four objectives of this study at the East Tennessee State University student health service were accomplished using the Importance-Performance (I-P) technique. These objectives were to determine summer student demographics, evaluate the importance of specific services as rated by the students, to evaluate the performance of those services offered at ETSU, and to make recommendations to the SHS. As noted by Kennedy and Kennedy (1987), “Obtaining student (consumer) input is seen as a primary ingredient in the development and improvement of programs and services” (p. 27). Furthermore, Kennedy and Kennedy describe the Importance-Performance technique as a “useful tool in the marketing and evaluating of university health services” (p. 31). Using the I-P scale adapted from Kenney and Kennedy, 29 specific health services were presented to the ETSU students visiting the SHS. These services were first ranked on a 7-point Likert scale from 1 (not important) to 7 (very important). The performance of 17 of the 29 services actually offered on the ETSU campus was also ranked from 1 (not satisfied) to 7 (very satisfied).

Based on overall mean I-P scores, students placed these services into Quadrant B (“Keep up with the good work”): urgent care, pharmacy, primary healthcare, women’s health clinic, patient education, and nurse clinic. As indicated by these findings, the SHS should be commended on providing these important services with a high level of patient satisfaction. College and university health professionals are expected to consistently provide quality services to an ever-changing population with professionalism and

compassion, a difficult task by definition. Therefore, based on the median performance scores, the staff and providers at ETSU should be recognized for the high performance ratings given by these summer students on all services.

Based on overall mean I-P scores, the students placed the following services in Quadrant D (“Possible overkill”): contraception education, nutrition education, sexual healthcare, health promotion, laboratory, nutrition counseling, and public health. While these services should by no means be eliminated, the SHS could potentially seek ways to increase student awareness of the importance and value of these services. Health students especially should be made aware as at least a portion of them will doubtlessly enter careers caring for patients who need these services.

The initiation of after-hours care might be considered a very desirable addition based on the findings. Should funding become available, a nurse or nurse practitioner could be used to staff the SHS after regular office hours. While more research may be needed in this area specifically to determine whether or not this service would be used by a substantial number of students, the preliminary findings are promising.

One limitation to this study is the sample size. Because the number of students or student visits during the summer months was not known, the number of surveys was set at a minimum of 100. In retrospect with 944 visits in Sessions 1 and 2 combined, a sample of 274 would have been advantageous based on required sample sizes put forth by Leedy (1997). Therefore, a second, larger study might be recommended to substantiate the findings of this study.

In retrospect, a second limitation to the study was the use of the finalized feature list that did not include at least one service frequently used by students. As observed by

the researcher during Session 1, a number of students visited the SHS to receive allergy injections. These students contributed to the number of “repeat” patients as described in the Methodology Chapter. While allergy injections fall into the category of nurse clinic, it is a specific service and could have been evaluated separately.

A third limitation to the study was the omission of why services sustained a low importance rating by the students. These reasons might have provided encouragement to the SHS staff regarding the low ratings. Using alcohol education as an example, a majority of students could be committed to total sobriety and abstinence from alcohol. Because of this commitment, the student could consider alcohol education unimportant. Likewise, contraception education might be unimportant to the sexually abstinent student just as a physically fit student with a well-balanced diet could consider nutrition education unimportant.

Similarly, the reasons for high performance of services were not asked of the student. Was the student primarily influenced by staff and provider friendliness, time, technical competence, or some other elusive characteristic? An expanded survey or focus group of volunteers might result in more ideas of why the SHS has such high performance (satisfaction) ratings.

Regardless, the Importance-Performance technique can provide abundant information when used appropriately. The student health service could benefit from incorporating at least a portion of this scale to the existing patient satisfaction survey it has used in the past. As new services are considered for expanding the SHS, the I-P technique would be invaluable in determining the student’s perspective on the importance of a particular service. As healthcare is moving more towards a consumer-oriented, cost

effective state, the Importance-Performance scale is a beneficial tool to tailor any SHS program to the student's needs.

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