IMPROVING ACCESS TO HEALTH SERVICES AT A CHRISTIAN UNIVERSITY HEALTH CLINIC

By

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Abstract

A private Christian university in the Midwest is home to a full-service clinic staffed by nurse practitioners, registered nurses, and student nurses. The clinic offers services available at public clinics, including diagnosing and treating physical and mental ailments and referral for mental health counseling. However, undergraduate students underutilized the clinic services. There was a notable decline in clinic encounters over five years while the university enrollment remained consistent. The project aimed to increase the clinic encounter rate by decreasing students' perceived barriers to access. The Perceived Barriers to Health Service Access at the University Clinic Survey was administered to undergraduate students 18-24 years. The survey results and Andersen's behavioral model of health services use guided the development of interventions to address the most common barriers. The pre and post-implementation data collection included the monthly clinic encounter rate and STD test rate. Statistical analysis with Microsoft Excel revealed the *t*-test comparison of means did not show a statistically significant difference in the pre and post-implementation monthly encounter rates. However, the rate of STD tests tripled post-implementation, suggesting that the intervention to decrease the barrier of "I fear judgment from the student nurse" was potentially successful. Additional interventions are needed to address students' perceived barriers to access to increase undergraduate students' use of health services at the university clinic.

Table of Contents

Figures

Tables

Chapter I: Introduction

Universities began establishing healthcare clinics over 100 years ago to safeguard and improve students' health by offering accessible healthcare (Christmas, 1995). University clinics are vital in helping students achieve optimal physical and mental health. Services provided by clinics vary; some may only offer treatment for minor complaints and injuries, while others may provide diagnosis, testing, treatment, and referral. A significant function of university clinic staff is to manage and prevent the spread of infectious diseases through health education and vaccinations. Both physical and mental health are essential to academic success (Romo & Luurs, 2021).

As of 2015, approximately 1,500 university health clinics existed in the United States (Turner & Keller, 2015). The American College Association reported that 49% of students at private institutions did not use available university health services (American College Health Association, 2018). Though individuals in the 18-24 age group are typically healthy, physical and mental illnesses still occur and require treatment. Mental illness can occur at any age, and onset is typical during the second decade of life. Recent statistics showed that approximately 75% of college students in the nation reported psychological distress symptoms, including anxiety, mental exhaustion, loneliness, and sadness (American College Health Association, 2022). Undiagnosed and untreated mental and physical illness in the college-age population adversely affects students' ability to earn their degrees and achieve goals. As a result, their employability decreases, ultimately limiting the productivity of the United States (U.S.) workforce.

There are no federal or state requirements for universities to provide health services. However, a clinic on campus is advantageous to the students. Romo and Luurs

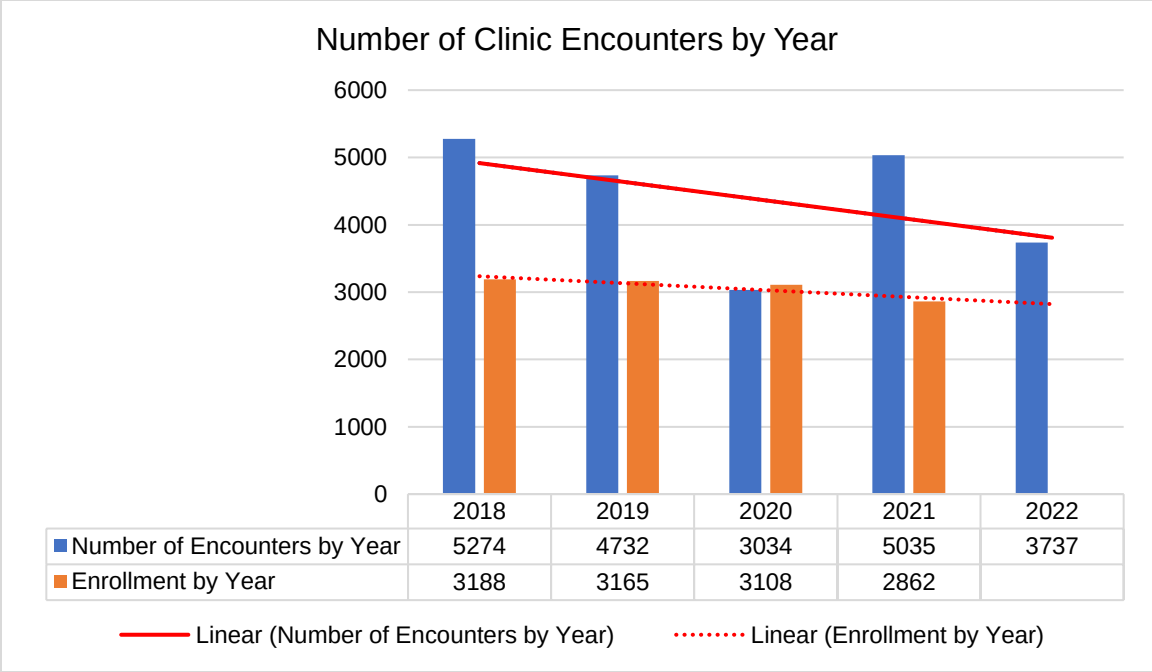
(2021) indicated that students who used health services completed their courses at a higher rate than the general student population. If students are to be successful, treatment for their physical and mental healthcare needs is essential.

Statement of Problem

A private Christian university in the Midwest is home to a full-service clinic staffed by nurse practitioners (NPs), registered nurses (RNs), and student nurses. The clinic offers services available at public clinics, including diagnosing and treating physical and mental ailments and referral for mental health counseling. However, clinic management reported that the student population underutilized the clinic's services (K. Aaron, personal communication, February 10, 2022). Statistics from the clinic revealed a steady decrease in encounters from 2018 to 2022. The clinic had 5,274 encounters in 2018 versus 3,737 in 2022 (Figure 1). The decline was notable over five years while enrollment remained consistent. The only exception was 2021 when numbers increased due to COVID-19. Clinic management believed the decrease in clinic encounters was related to students' lack of knowledge regarding available services, the cost of services, and student concerns about confidentiality (K. Aaron, personal communication, February 10, 2022).

Figure 1

University Clinic Encounters 2018-2023



Purpose/Aim of the Project

To increase student utilization of the university clinic, the project aimed to reduce barriers students perceived to accessing clinic services. Though traditional age (18-24 years) undergraduate students typically experience good health, new challenges and behaviors can adversely affect their physical and mental health (MacLeod et al., 2020). The result is decreased student well-being, lower quality of life, and less academic success for students (Romo & Luurs, 2021; Jessop et al., 2020), leading to an increase in student attrition rates (Thurber & Walton, 2012; Van Ameringen et al., 2003).

Background/Problem of Interest Supported by the Literature

Most students enrolled in undergraduate universities fall within the emerging adult phase with an age range of 18 to 25 years (MacLeod et al., 2020). Emerging adults' physical health may be affected due to risk-taking behaviors (MacLeod et al., 2020), communicable diseases (Turner & Keller, 2015), and stress (Jessop et al., 2020). Nearly 75% of emotional and mental health problems are seen before age 24 (Pehlivan et al.,

2021). Depression and anxiety are the most common presenting concerns at university clinics.

In the emerging adult phase, students may engage in risky behaviors such as multiple sexual partners, unprotected sex, and substance abuse (MacLeod et al., 2020). As such, students are at increased risk for sexually transmitted diseases (STDs), overdose, alcohol poisoning, and risk for accidents and injuries. The rate of STDs in the United States has steadily increased since 2015 (Centers for Disease Control and Prevention [CDC], 2021). According to the CDC (2021), reportable STDs were at an all-time high each year from 2015 to 2019, with chlamydia and gonorrhea rates highest among 20 to 24-year-olds.

Students are at increased risk of communicable diseases because of living in residential housing and engaging in large social gatherings (Turner & Keller, 2015). Examples include acute respiratory conditions such as the common cold, acute bronchitis, influenza, and COVID-19. Other common ailments include gastroenteritis and pharyngitis. Bacterial and viral infections spread quickly in close living quarters such as dormitories and classrooms. The COVID-19 pandemic is a prime example. Young adults are not the most vulnerable group regarding the severity of symptoms or complications from COVID-19. However, the virus is transmitted from person to person via airborne droplets and surfaces (CDC, 2022a). Though social distancing decreases transmission, it may not be feasible in dormitories, and undergraduate students do not always abide by the recommendations. In addition, students' failure to seek COVID-19 screening when symptoms appear contributes to the spread of the disease.

Mental health, including emotional, psychological, and social components, is

essential to overall health and well-being. Mental health directly impacts how an individual handles stress, relationships, and decisions (CDC, 2022b). Mental illness can occur at any age. Recent statistics showed that approximately 75% of college students reported psychological distress symptoms, including anxiety, mental exhaustion, loneliness, and sadness (American College Health Association, 2022). However, 55.8% reported no mental illness diagnosis (American College Health Association, 2022, p.15). Mental health issues in the student population may be new onset or an exacerbation of an existing mental illness brought on by university-related and university-unrelated challenges. University-related challenges include high academic demands, pressure to succeed, and lack of peer support (Porru et al., 2022; Tonsing & Tonsing, 2023). University-unrelated challenges include financial pressure, adapting to a new social environment, establishing new social networks, and homesickness (Porru et al., 2022; Tonsing & Tonsing, 2023). The challenges experienced by students lead to increased levels of stress, anxiety, and depression.

Financial concerns are also a factor affecting the health and well-being of undergraduate students. According to the National Center for Education Statistics (2022), the average annual tuition, housing, and fees for 4-year, non-profit, private universities for 2020-2021 were $54,500. Undergraduate students frequently assume significant debt to pay for a degree. Financial-related concerns are associated with worse mental and physical health outcomes (Jessop et al., 2020). Students with financial concerns have increased emotional problems, stress, and anxiety. Prolonged emotional stress increases cortisol levels causing physical health concerns such as high blood pressure and decreased immune response leading to increased susceptibility to infectious disease

(Jessop et al., 2020).

Undergraduate students living away from home are at risk for both mental and physical health issues. They are responsible for making health care decisions, including whether to seek care. If they seek care, they must decide where and when (Romo & Luurs, 2021). The university clinic is one healthcare option for private Midwest Christian university students. University clinic patient visits are by appointment and walk-in. Conveniently located in the student center, hours of operation are weekdays from 8:00 AM to 5:00 PM. The clinic is full service, offering many services other local public clinics provide, including diagnosis and treatment of physical and mental ailments and referral for mental health counseling.

The clinic manager and staff believe students do not use the university clinic because of a lack of knowledge regarding available services and the cost of services (K. Aaron & T. Heath, personal communication, February 10, 2022). They believe students are also concerned about confidentiality. An informal survey of students confirmed the staff's beliefs. Students stated that the clinic does not accept their insurance. Students also expressed concerns regarding fear of judgment and fears of confidentiality breaches. The confidentiality concern is particularly true regarding sensitive information such as sexual healthcare needs. The university expects that students abide by the rules outlined in the student handbook. The handbook states that students will not engage in sexual activity outside marriage. Because of this, managers in the clinic believe students avoid seeking STD testing and treatment due to fear of punitive action by the university (K. Aaron & T. Heath, personal communication, February 10, 2022).

Significance of the Project

Students' physical and mental health is essential for their overall quality of life and well-being (Jessop et al., 2020). The implications of untreated illness are significant. Poor physical or mental health is detrimental to student academic success (Romo & Luurs, 2021; Jessop et al., 2020). Health problems can result in students dropping out of school (Thurber & Walton, 2012; Van Ameringen et al., 2003).

Undiagnosed and untreated infectious diseases on university campuses impact the student with the illness and other students. Because of the nature of college life, disease outbreaks are possible. Residential students share housing, bathrooms, study, and dining areas. As a result, bacterial and viral illnesses spread quickly. The effect of disease outbreaks is widespread with short- and long-term consequences. As discussed previously, short-term effects include missed classes, decreased academic progress, and potential delays in graduation. Some infectious diseases may produce more significant and longer-lasting consequences. Measles, mumps, meningococcal meningitis, norovirus, colds, influenza, and COVID-19 are among the more common diseases on university campuses (Parks et al., 2016). Though vaccinations are available for most and will prevent outbreaks, the rate of uptake of vaccinations by students may not be enough. Infectious diseases such as influenza and COVID-19 can cause complications even in healthy young adults, including bronchitis, pneumonia, and exacerbation of chronic conditions such as asthma. In severe cases, influenza and COVID-19 can be fatal. Meningococcal meningitis is the most concerning since it spreads through droplets from sneezing, coughing, kissing, and close living conditions. Meningitis can be deadly, with 5-10% of patients dying within the first 24-48 hours (Parks et al., 2016). The rate of

meningitis among the 17–20-year age group is twice that of the general U.S. population (Parks et al., 2016).

The long-term consequences of undiagnosed and untreated STDs are devastating. Untreated STDs in men may cause infertility, pain, and in extreme cases, cancer. Some STDs do not cause any symptoms in men. As a result, they unknowingly pass the disease to others. The effects are especially significant in women. There is a variance among STDs, but potential implications include infertility, pelvic inflammatory disease, ectopic or tubal pregnancy, miscarriage, and cervical cancer in women (Hubert & VanMeter, 2018).

Undiagnosed or untreated mental illness has consequences ranging from the inability to achieve goals to death. An extended time between the onset of symptoms and diagnosis of mental illness results in a complicated clinical course and more severe consequences (Pehlivan et al., 2021). Researchers found that students with untreated mental and emotional issues are likelier to have increased absences from class and poor academic performance (Pehlivan et al., 2021). Undiagnosed and untreated mental illness in the college-age population can adversely affect students' ability to earn their degrees and achieve goals. However, the most severe consequence is fatality from suicide, a leading cause of death among young adults (Pehlivan et al., 2021; Porru et al., 2022).

Impact of the Project

It was imperative to determine student-perceived barriers to increase the students' use of healthcare services offered by the clinic. It was necessary to verify the assumed barriers causing the decreased encounter rate to guarantee the correct choice of interventions to address student concerns. Increased student encounters were an expected

result of project implementation. Ultimately, students were expected to experience improved health, increased academic success, and decreased attrition rates.

The clinic nurses were likely to develop positive relationships with the students through increased contact. The nurses were expected to have a positive, influential impact on student health, as trust grew. As a result, students were more likely to seek the clinic's services.

Role and workflow changes were anticipated to increase staff productivity and decrease the documentation burden. As a result, staff satisfaction was likely to increase. The workflow, role changes, and increased encounter numbers were predicted to generate revenue. As a result, expanding clinic hours, services, and staff would be possible.

The project was likely to increase enabling resources and improve students' predisposition to seek care. As students' trust and knowledge increased, they were expected to recognize healthcare needs readily. Ultimately, health services use was anticipated to increase.

Chapter II: Literature and Theory Review

To improve the number of encounters and the STD testing rate at a Christian university clinic in the Midwest, the project aimed to explore perceived barriers and evidence for best practices. Electronic databases such as the Cumulative Index to Nursing and Allied Health Literature and ProQuest were accessed for the literature review. Key search terms and phrases included university clinic, college clinic, barriers to access, healthcare access, healthcare use, young adults, undergraduate students, infectious disease, mental health, sexually transmitted diseases, documentation efficiency, and electronic health record.

Literature Review

The literature included many barriers to students using university clinics. Few studies explored the barriers to clinic access for any cause. Most studies investigated barriers regarding specific healthcare needs. For this reason, this author has first discussed general barriers to access, followed by a focused review of barriers related to mental health issues and STDs.

Perceived Barriers to Accessing Care

Romo and Luurs (2021) investigated university students' uncertainty regarding the use of campus healthcare services. Specific access barriers identified in the study included uncertainty of services offered, costs of services, and insurance acceptance. Though students were aware of a campus clinic, they were unfamiliar with its services. Additionally, students indicated they did not know if the clinic would accept their insurance or if they could afford the cost of services. Other barriers included unfamiliarity with providers, concerns about quality care, and peers' negative clinic

experiences. The clinic providers were unknown to the students. Therefore, they questioned the providers' competence and trustworthiness. Peer stories of poor clinic experiences negatively influenced students' perception of the providers. Study participants repeatedly expressed concerns that the providers and staff would not keep their appointment private. The Romo and Luurs (2021) study explored barriers to students using campus healthcare services for any illness or need. The most common barriers identified were unfamiliarity with services and costs, provider competence, privacy, and confidentiality.

Confidentiality/Privacy

Students perceived lack of privacy and confidentiality adversely affects their willingness to seek health services. The concerns originate from an associated stigma that can lead to shame and embarrassment (Cassidy et al., 2018; Bersamin et al., 2017; Fleming et al., 2020; Nobiling & Maykrantz, 2017; Kosyluk et al., 2021). Additional privacy concerns are clinic location and other patients in the waiting room. Literature indicated students did not like seeing other students in the clinic when seeking care for sexual health concerns. Students in one study suggested a breach of confidentiality occurred upon checking into the clinic as clinic staff announced the student's reason for the appointment (Cassidy et al., 2018). A study of barriers to STD testing revealed students were concerned that testing was a type of behavior surveillance and that clinic staff would share test results with parents (Fleming et al., 2020). When students feel privacy and confidentiality are maintained, they are more comfortable seeking care (Cassidy et al., 2018; Romo & Luurs, 2021).

Perceived Barriers to Accessing Care for Mental Health Issues

Mental illness is common among traditional-age college students. The 2021-2022 National Healthy Minds Survey of university undergraduate students revealed 44% reported symptoms of depression, 37% reported anxiety, and 15% said they were considering suicide. The rates are the highest in the 15-year history of the survey, with a 50% increase since 2013 (Flannery, 2023). The Healthy Minds Survey showed that students are seeking mental healthcare at a higher rate, with 37% reporting they had received counseling in the last year, a 7% increase from 2020. Despite improving mental healthcare utilization, most students reporting symptoms did not seek care. Studies showed students do not seek mental healthcare due to fear of labeling and the stigma associated with mental illness (Nobiling & Maykrantz, 2017; Kosyluk et al., 2021). Stigma is the simultaneous occurrence of stereotyping, labeling, separation, status loss, and discrimination (Frasso et al., 2021). According to Kosyluk et al. (2021), the stigma related to mental illness and the associated discrimination is one of the most significant barriers to mentally ill individuals achieving life goals. Normalization of mental health care is necessary to reduce the health disparities of stigma and label avoidance.

Perceived Barriers to Accessing Care for STDs

Young adults are more susceptible to contracting STDs than other age groups. However, only 27% of university students indicated they had used services for sexual health (Cassidy et al., 2018). Barriers to university students accessing sexual healthcare include a perceived lack of confidentiality or privacy (Bersamin et al., 2017; Cassidy et al., 2018) and embarrassment or fear of peer judgment (Bersamin et al., 2017; Cassidy et al., 2018; Fleming et al., 2020). Other barriers are a lack of sexual health and STD knowledge and awareness of the availability of services (Cassidy et al., 2018; Fleming et

al., 2020; Bersamin et al., 2017; Martin et al., 2018). Studies conducted at Christian universities indicated religious beliefs as a barrier (Best et al., 2019; Martin et al., 2018; Davidson et al., 2017).

Embarrassment and Peer Judgement. The influence of peers is vital in the young adult age group. The actions of undergraduate students are often guided by peer opinion. Regarding STD healthcare, researchers showed that peer influence can be positive or negative. Some students fear their peers will judge them harshly, viewing them as unclean or morally corrupt, ultimately harming a student's social status (Fleming et al., 2020; Cassidy et al., 2018). Conversely, peers can also have a positive effect on the uptake of STD testing if supportive and encouraging (Fleming et al., 2020).

Sexual Health Knowledge and Awareness of Services. Students who lack sexual health and STD knowledge are unlikely to seek care. Bersamin et al. (2017) found a lack of knowledge was a significant barrier to college students using sexual health services. Many students were unaware of their risk or the long-term effects of untreated STDs. Some STDs are asymptomatic, so students do not believe they have reason to seek care (Bersamin et al., 2017; Fleming et al., 2020; Martin et al., 2018; Cassidy et al., 2018). Sometimes, students may not be aware that sexual healthcare is available at university clinics. As a result, they do not utilize the services. Cassidy et al. (2018) cited that students felt they were playing 'hide and seek' trying to access sexual health services. Students did not know where or how to find sexual healthcare.

Sexual Health and Religion. Many students at Christian universities have firmly held religious beliefs regarding abstaining from sex before marriage. The effects of religious belief in abstinence on sexual health can be protective against STDs. Studies

showed students with high levels of religiosity have their first sexual experience at a later age, have fewer lifetime sex partners, and are less likely to engage in casual sex (Martin et al., 2018).

Though potentially protective, Martin et al. (2018) posited the conservative attitudes of such students in delaying or avoiding sexual activity can contribute to a lack of sexual health knowledge and resources. The authors stated that the same students are not prepared to make informed decisions regarding their health when engaging in sex. Students with high religiosity are less likely to agree with birth control use and participation in sex education (Martin et al., 2018).

Martin et al. (2018) examined the impact of religiosity on sexual and reproductive health knowledge and awareness among college students. The authors found religiosity is a risk factor for reduced sexual health knowledge and understanding, especially among women who frequently attended religious services. Though religiosity did not have the same effect on men's sexual knowledge and awareness, the study found that the male participants who were sexually active had less knowledge and awareness of sexual health than male participants who were not sexually active (Martin et al., 2018).

Documentation Efficiency Best Practices

Hospitals have used electronic health records (EHRs) since the 1960s (McBride & Tietze, 2019). Since then, EHRs have become commonly used throughout the nation in all realms of healthcare, including outpatient clinics. EHR use can improve the quality of patient care, improve care coordination, increase efficiencies, and provide cost savings (McBride & Tietze, 2019). However, if nurses cannot use the EHR efficiently, they will not realize the benefits.

The literature indicated the implementation of EHRs has decreased nurse efficiency due to the increased time required to document (Swietlik & Sengstack, 2020; Lanier et al., 2017). The authors of one study stated admission assessment documentation takes 30-120 minutes to complete (Staggers et al., 2018). Additionally, researchers indicated inefficiencies due to a lack of clarity regarding workflow (Swietlik & Sengstack, 2020). If required documentation is unclear to the nurses in the clinic, then over-documentation and redundancies occur. Studies showed inconsistencies in workflow and documentation appear when guidelines are not followed (Wieczorek & Clark, 2014). Written documentation guidelines should be developed and obeyed.

Staggers et al. (2018) suggested standardizing EHR elements such as templates and predetermined text to resolve workflow and documentation inefficiency. Because admission intake assessments require extended time to complete, Swietlik & Sengstack (2020) recommend improving the admission assessment to reduce the documentation burden. Reviewing policy, procedure, and regulatory requirements is essential to determine needed documentation.

The addition of predetermined text also decreases the documentation burden. Typically, the same nursing documentation is used repeatedly from patient to patient. Users can create predetermined text, so typing the entire statement every time is not required. Once created, using predetermined text requires a single mouse click, decreasing the time spent documenting.

The literature review guided the project's development. Data from the literature and evidence-based interventions supported the need for practice change. Using the research studies' conclusions, the project manager developed the Perceived Barriers to

Health Services Access at the University Clinic survey (Appendix A). The literature provided valuable information for developing and implementing interventions to address confirmed access barriers. Documentation efficiency improved by using the best practices from the literature. An analysis of the outcome measures demonstrated the successful implementation of evidence-based interventions.

Review of Theory

In 1968, Andersen initially developed the behavioral model of health services use in the late 1960s to understand why families use health services, define and measure equitable access, and assist in developing policies to promote equitable access. Though the family was the initially intended measure for analysis, Andersen later adapted the model for individuals. The model suggests that an individual's use of health services depends on predisposition, factors that enable or impede the use, and the need for care. The model can predict and explain healthcare use (Andersen, 1968; Andersen, 1995).

Predisposing Factors

Predisposing factors are characteristics existing before the onset of illness that predict a family or individual's likelihood of using health care services. They include demographics (age and gender), social structure, and health beliefs (Andersen, 1995). In his dissertation, Andersen (1968) stated that age is not a reason to seek healthcare, but people in different age groups have different degrees and types of illness. Therefore, they have different needs for medical services. It is also possible to apply the same principle to gender since women require other healthcare services than men.

Andersen's original model from 1968 defined social structure as a family's location in society and was measured by the characteristics of the primary breadwinner,

such as employment, social class, and occupation (Andersen, 1968). Additional factors include education, race, and ethnicity. Andersen stated the features suggest a family's lifestyle and physical and social environments, which may influence a family's pattern of healthcare use. He said employment, social class, and occupation are associated with income and health insurance, enabling resources. Andersen (1995) revisited his model and provided an updated description of the social structure more appropriate for the year and individual. Andersen still included social status as a measure but added a person's ability to cope with problems and use resources appropriately. How healthy or unhealthy a person's physical environment is, is a more concise description of the environment. While both sets of measurements were appropriate for the era in which Andersen wrote them, further modifications today are relevant due to increased interaction via social media and the availability and ease of accessing information.

Health beliefs are individuals' attitudes, values, and healthcare knowledge. Health beliefs influence perceptions of the need and use of health services. What a person thinks about health will ultimately affect their health-seeking behavior. Andersen's original measure of health beliefs is the value of health services, the value of physicians, the value of good health, the value of health insurance, the attitude toward health services, the attitude toward physician use, and knowledge of disease (1968).

Andersen (1995) stated that two more predisposing factors should be added to the model: genetic factors and psychological characteristics. Genetic measures such as genetic testing, gene mapping, gene therapy, and genetic counseling are predisposing factors for seeking healthcare. An individual may be motivated to seek care because of a family history of genetically linked cancer such as breast cancer. Psychological

characteristics are another distinct predisposing factor. Characteristics within this factor include mental dysfunction and cognitive impairment (Andersen, 1995). Today, psychological characteristics include mental and behavioral health issues such as anxiety and depression. It is more common now than in 1968 or 1995 to seek care for mental health.

Enabling Resources

Andersen (1968) defined enabling as a condition that allows an individual to act upon a value or satisfy a need regarding health service use. Enabling resources make healthcare services available to individuals or families and are characterized as personal or community resources. Personal resources include income, health insurance, a regular source of care, and travel and wait times. Community resources refer to the availability of healthcare facilities and professionals in the community in which they live. Healthcare facilities and professionals must be available where a person lives, and they must have the means and knowledge to use them.

Current enabling resources could include social determinants of health (SDOH). SDOH are the conditions in the environments where people live, work, learn, and age which can affect health, functioning, and quality of health outcomes (U.S. Department of Health and Human Services, 2022). One SDOH is healthcare access and quality. Healthcare facilities and providers may not be present in some communities, which may present a challenge in using health services if adequate transportation is unavailable.

Need

The third element of Andersen's model is need. Need consists of two components, perceived need and evaluated need. Regardless of predisposing and enabling resources,

individuals must first perceive healthcare needs before they seek health services. Perceived need is measured by self-report, symptoms, health level, and disability days (Andersen, 1968). The measurement of evaluated need is the professional judgment of an individual's health status and need for care (Andersen, 1995). It is the clinical verification of disease or illness.

Use of Health Services

Ideally, the perceived need will lead to the use of health services by the individual. Social structure (social networks, interaction, culture) plays a role along with health beliefs in enabling resources, needs, and use (Andersen, 1995). Individuals react differently to perceived illness. Some may not deem their symptoms severe enough to warrant health services, and others may readily seek care. Predisposing factors and enabling conditions may impede the use of health services.

Andersen (1968) stated utilization of health services is non-discretionary or discretionary. The severity of perceived need dictates non-discretionary behavior. If an illness is severe or urgent care is needed, predisposing factors and enabling conditions play a minimal role in the decision to use health services. If the perceived need is minimal, then discretionary behavior is more likely. Predisposing factors and enabling conditions will have a more significant impact on the decision to use health services. Poor income or lack of insurance will result in non-utilization of services. Individuals may need to prioritize basic needs such as food and housing over the expense of health services. The sparsity of enabling resources, such as local health facilities and providers, transportation, and time may also result in the non-use of services for perceived need.

Alignment of Theory

Andersen's model suggests that utilizing health services is not an absolute result of perceived need. Instead, barriers may prevent an individual from seeking care. It was necessary to assess predisposing characteristics, enabling resources, and perceived needs of the students to increase their use of the university clinic.

Discussion with the clinic manager and staff was essential to assessing enabling resources. Interviews and shadowing in the clinic revealed each staff member's role, the services offered, and the clinic's workflow. Other information gleaned included insurance types accepted, costs of services, and referral options. The assessment provided personal and community-enabling resources available to students.

Consideration of predisposing factors and need led to the development of the Perceived Barriers to Health Services Access at the University Clinic survey. Predisposing factors also structured the interview with the clinic manager to determine common reasons students seek care.

Andersen's model was used to select outcome measures. Andersen (1995) stated that beliefs about a particular disease, measures of need, and services received for the disease will show a more substantial relationship than measuring beliefs about general health. STDs are a common reason for 18–24-year-olds to use health services. Accordingly, project outcome measures included STD testing and the number of clinic encounters.

Chapter III: Method

The project aimed to increase student use of the university clinic by addressing perceived barriers to clinic access. A change to the intake process of the clinic and RN documentation were implemented to overcome student barriers, thereby improving the clinic student encounter numbers and rate of STD testing.

Design of the Project

The clinic manager permitted the project and conditional approval of interventions developed, pending survey results. The university's institutional review board approved the project before implementation and data collection (Appendix B).

Discussions with the clinic manager and project advisor led to the development of the Perceived Barriers to Health Services Access at the University Clinic survey of undergraduate students to confirm suspected barriers to clinic access. Because no survey tool was available in the literature, it was necessary to create a survey. Potential barriers to clinic access included in the survey are those found in the literature. A statistician guided the creation of the tool and analysis of the data. A small sample of students tested the survey to determine readability and understanding. Faculty, peers, clinic management, and the project advisor reviewed the survey before data collection.

The survey sample included 18- to 24-year-old undergraduate students. There were no exclusions for gender, race, or culture. The initial attempt to recruit survey participants occurred on a single day. The project manager set up a table in the student center displaying a poster and cookies. As students approached or walked by, the project manager asked each to complete the survey electronically in exchange for cookies. In addition to the initial one-day recruitment efforts, volunteer undergraduate nursing

students recruited other survey participants through word of mouth, text messages, and emails over eight weeks.

The second part of the project required interventions to decrease students' perceived barriers to clinic access. Development of the interventions involved the clinic manager, clinic staff, and evidence from the literature. The collaboration with the manager and staff resulted in the implementation of two interventions.

Modification of Admission Intake Process

The university clinic's intake process involved assessing patient concerns and health history. A student nurse, RN, or NP completed the intake assessment in the exam room through oral questioning of the patient. According to the clinic manager, student nurses frequently failed to fulfill health screening requirements that included sensitive information due to feelings of embarrassment. The student nurses were not comfortable asking for this personal information from the patients who were their peers. If the student nurses attempted to complete every assessment section, the patients often declined to answer or perhaps answered dishonestly because of embarrassment or fear of judgment. Therefore, and because of the confirmed access barrier of confidentiality concerns, modification of the intake process was necessary.

Modification of the intake process involved changing the role of the student nurse. The student nurse walked the patient to the exam room for RN and NP appointments and completed vital signs. The RN or NP completed the remainder of the intake assessment. The purpose of the change was to decrease student concerns regarding privacy, confidentiality, and fear of judgment.

Modification of Documentation

The final intervention was to increase staff efficiency, thereby decreasing the

average length of each encounter and allowing more time for additional appointments each day. The clinic has three main patient appointment types: visits for vaccinations, allergy shots, and other routine items, RN visits, and NP visits. Documentation requirements of the RNs are different depending on the type of appointment. Patients may see an RN at no charge. The RN can assess the patient, swab for COVID-19, influenza, and strep throat, and treat minor ailments. The RN documents any assessment findings and treatment. Anything requiring in-depth assessment, testing, and treatment requires an NP visit. For an NP appointment, the RN documents basic intake information only. The NP then follows, completing a more in-depth assessment of the patient's presenting complaint. However, many nurses charted more detailed information and assessment data than was needed.

Much of the extra documentation by the RNs caused redundancy because the NP repeated the information in their assessment documentation. Patients were required to answer the same questions multiple times, resulting in a lengthier visit than necessary and an increased wait time for other patients. Ultimately, the RNs' lack of efficiency in documenting resulted in a decreased number of patients seen in a day and increased pay for overtime.

The documentation required for an NP visit was unclear to the nurses in the clinic. For this reason, over-documentation existed. Based on stakeholder interviews and findings from the literature, efficiency and competency were improved by creating an admission intake template for RN documentation for NP appointments. The clinic manager, NP, and RNs determined the information needed for an admission intake assessment. Required information included primary complaints, medications or changes

from previous medication, and allergies. They created a template containing only the required information. RN's template use reduces redundancy, over-documentation, and visit length. In addition, clinic RNs created predetermined text to decrease the documentation burden. Typically, the same nursing documentation is used repeatedly from patient to patient. Once created, using predetermined text requires a single mouse click, decreasing the documentation time.

The project manager provided education before the implementation of the interventions. The education included the change of the student nurse role and requirements for documentation. Additional instruction included the use of the admission intake assessment by the RNs. The RNs were also encouraged to use predetermined text and to create more predetermined text as needed.

To evaluate the effectiveness of the intervention, the project manager completed an analysis of pre and post-implementation data. Outcome measures included annual clinic encounter numbers and annual STD testing rate. Data were collected electronically by the clinic manager. Potential risks were minimal but included a breach of confidentiality. The data collected did not contain patient identifiers such as name, medical record number, or student identification number. The project manager stored the data on a password-protected computer.

Setting

The setting for the project was a health clinic at a Christian university in the Midwest. The clinic’s staff includes student nurses, RNs, and NPs. Patient visits are by appointment and walk-in. Located in the student center, hours of operation are weekdays from 8:00 AM to 5:00 PM. The clinic offers many services, including diagnosing and

treating physical and mental ailments and referrals for mental health counseling.

Population

Undergraduate students aged 18-24 completed the Perceived Barriers to Health Services Access at the University Clinic survey. There were no exclusions for gender, race, or culture. The clinic manager and staff, including the RNs and NP, were included in the project design, interventions, implementation, and evaluation. The project interventions and implementation included the clinic student nurses.

Data Collection

Data collection before and after intervention implementation included total clinic encounter numbers and the rate of STD testing. The clinic manager tracked encounter numbers through the clinic's scheduling program. The manager abstracted the STD testing rate via ICD-10 codes used by the nurse practitioner to charge for services.

University undergraduate students aged 18-24 participated in the Perceived Barriers to Health Services Access at the University Clinic survey. There were no exclusions for gender, race, or culture. Survey completion was voluntary and anonymous. A statement regarding consent, potential risks, and benefits preceded the survey questions. For participants, survey completion implied consent (Appendix C).

Survey participants indicated their level of agreement with perceived barrier statements. Demographic questions followed and included age, year in school, gender, race, and major. Survey results guided interventions to address barriers.

Chapter IV: Results

Students completed the Perceived Barriers to Health Services Access at the University Clinic survey. The survey results determined the development and implementation of interventions to decrease perceived barriers. Data collected pre and post-implementation included monthly encounter rate and annual STD testing rate.

Results of Data Collection/Analysis

The Perceived Barriers to Health Services Access at the University Clinic survey began with 12 barrier statements. Participants chose their level of agreement for each. The response format for the statements was a Likert scale, ranging from 1, strongly disagree, to 5, strongly agree. Demographic questions followed and included multiple-choice options for age, year in school, major, and race/ethnicity.

Survey Demographic Analysis

A summary of the demographic data is in Table 1 and Table 2. In total, 265 out of 2,862 students (9.3%) completed the survey. The majority of respondents were seniors, 160 (60.4%). Freshmen accounted for 6%. Racial and ethnic representation was consistent with the undergraduate university population, with 86% of respondents choosing “white.” Respondents by major were also consistent with the population.

Table 1

Perceived Barriers to Clinic Access Demographics by Year

	Freshman	Sophomore	Junior	Senior
Respondents by year	16 (6%)	38 (14.4%)	51 (19.2%)	160 (60.4%)

Table 2

Perceived Barriers to Clinic Access Demographics by Major

Major	
Art	14 (5.3%)
Business	44 (16.6%)
Chem/Bio/Physics	18 (6.8%)
Communications	6 (2.3%)
Criminal Justice	3 (1.1%)
Econ/Political Science	4 (1.5%)
Education	31 (11.8%)
Health Care Sciences	17 (6.5%)
Math/Comp Science	5 (1.9%)
Modern Lang/Lit	1 (0.4%)
Music	13 (4.9%)
Nursing	47 (17.7%)
Psychology	20 (7.6%)
Religion	16 (6.1%)
Social Work	16 (6.1%)
Other	10 (3.8%)

Perceived Barriers to Health Services Access at the University Clinic Survey Analysis

Barrier statements were analyzed using Microsoft Excel to calculate the level of agreement with each barrier statement. Table 3 provides the percentage of respondents indicating they strongly agreed or agreed with each statement. The students indicated their top concerns were fear of judgment, privacy, and fear of discipline.

Table 3

Percentage of Agreement with Barrier Statements

Barrier Statements

I fear judgment from the student nurses in the clinic	33.6%
The clinic location is not conducive to privacy	33.2%
The clinic hours are not convenient	29.8%
I fear disciplinary action from the university	28.3%
The clinic services are too expensive	26.0%
I fear judgment from the clinic staff	24.9%
I fear judgment from my peers	24.2%
I am concerned about my privacy during my clinic visit/examination	22.3%
I am concerned my information will not be kept confidential	21.9%
The clinic does not take my insurance	21.5%
The clinic does not offer the services I need	18.1%
I am concerned my parent/guardian will be informed of my clinic visit	15.1%

Perceived student barriers differed by major (Table 4, Table 5) and grade level (Table 6). The survey results showed “fear of disciplinary action from the university” as one of the primary barriers for nursing majors, indicating concerns about confidentiality. The finding is interesting as nursing majors are well-educated on the Health Information Portability and Accountability Act, a federal law protecting the privacy and confidentiality of personal health information (U.S. Department of Health and Human Services, 2021). Nursing majors know that personal health information is confidential and cannot be discussed or shared. Despite their knowledge, nursing majors do not trust the clinic staff will abide by the law.

Only 6.3% of freshmen identified “I fear judgment from nursing students” as a barrier to clinic access. The fear of student nurse judgment was among the top three

concerns for sophomores, juniors, and seniors. Over 41% of juniors agreed to strongly agree with the barrier statement, making it their top concern.

Table 4

Percentage of Agreement with Barrier Statements by Major Part 1

	Fear discipline	Inconvenient hours	No services I need	Does not take my insurance	Too expensive	Location not private
Art	21.4%	35.7%	14.3%	28.6%	35.7%	50.0%
Business	20.9%	25.6%	16.3%	27.9%	27.9%	27.9%
Chem/Bio/Physics	26.3%	42.1%	21.1%	26.3%	26.3%	10.5%
Communications	50.0%	50.0%	16.7%	16.7%	50.0%	50.0%
Criminal Justice	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Econ/Political Science	25.0%	50.0%	50.0%	25.0%	0.0%	25.0%
Education	35.5%	25.8%	25.8%	25.8%	35.5%	35.5%
Health Care Sciences	23.5%	29.4%	5.9%	11.8%	11.8%	11.8%
Math/Comp Science	40.0%	0.0%	0.0%	0.0%	0.0%	20.0%
Modern Lang/Lit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Music	23.1%	38.5%	38.5%	23.1%	30.8%	30.8%
Nursing	27.7%	25.5%	10.6%	23.4%	21.3%	29.8%
Psychology	30.0%	15.0%	25.0%	15.0%	25.0%	55.0%
Religion	37.5%	50.0%	6.3%	25.0%	25.0%	50.0%
Social Work	37.5%	43.8%	31.3%	18.8%	50.0%	43.8%
Other	30.0%	20.0%	20.0%	0.0%	0.0%	50.0%

Table 5

Percentage of Agreement with Barrier Statements by Major Part 2

	Exam privacy	Fear of judgment peers	Fear of judgment staff	Fear of judgment nursing students	Concern confidentiality	Concern parent will be notified
Art	35.7%	35.7%	50.0%	50.0%	28.6%	21.4%
Business	23.3%	27.9%	25.6%	30.2%	30.2%	18.6%

Chem/Bio/Physics	10.5%	15.8%	10.5%	26.3%	26.3%	42.1%
Communications	33.3%	33.3%	33.3%	66.7%	33.3%	33.3%
Criminal Justice	33.3%	0.0%	0.0%	0.0%	33.3%	66.7%
Econ/Political Science	50.0%	50.0%	25.0%	50.0%	25.0%	0.0%
Education	29.0%	32.3%	38.7%	41.9%	32.3%	12.9%
Health Care Sciences	5.9%	0.0%	5.9%	17.6%	0.0%	0.0%
Math/Comp Science	20.0%	40.0%	20.0%	20.0%	20.0%	20.0%
Modern Lang/Lit	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Music	15.4%	30.8%	23.1%	38.5%	15.4%	7.7%
Nursing	17.0%	14.9%	14.9%	25.5%	17.0%	6.4%
Psychology	30.0%	20.0%	30.0%	45.0%	25.0%	20.0%
Religion	25.0%	43.8%	18.8%	31.3%	37.5%	25.0%
Social Work	18.8%	37.5%	43.8%	43.8%	12.5%	18.8%
Other	30.0%	0.0%	30.0%	30.0%	20.0%	20.0%

Table 6

Percentage of Agreement with Barrier Statements by Grade

Barrier Statements	Freshman	Sophomore	Junior	Senior
I fear judgment from the student nurses in the clinic	6.3%	23.7%	41.2%	36.3%
The clinic location is not conducive to privacy	18.8%	23.7%	27.5%	38.8%
The clinic hours are not convenient	25.0%	26.3%	29.4%	31.3%
I fear disciplinary action from the university	12.5%	28.9%	15.7%	33.8%
The clinic services are too expensive	18.8%	21.1%	29.4%	26.9%
I fear judgment from the clinic staff	0.0%	15.8%	19.6%	31.3%
I fear judgment from my peers	6.3%	21.1%	25.5%	26.3%
I am concerned about my privacy during my clinic visit/examination	6.3%	13.2%	23.5%	25.6%
I am concerned my information will not be kept confidential	0.0%	18.4%%	25.5%	23.8%
The clinic does not take my insurance	25.0%	13.2%	21.6%	23.1%
The clinic does not offer the services I need	12.5%	10.5%	29.4%	16.9%

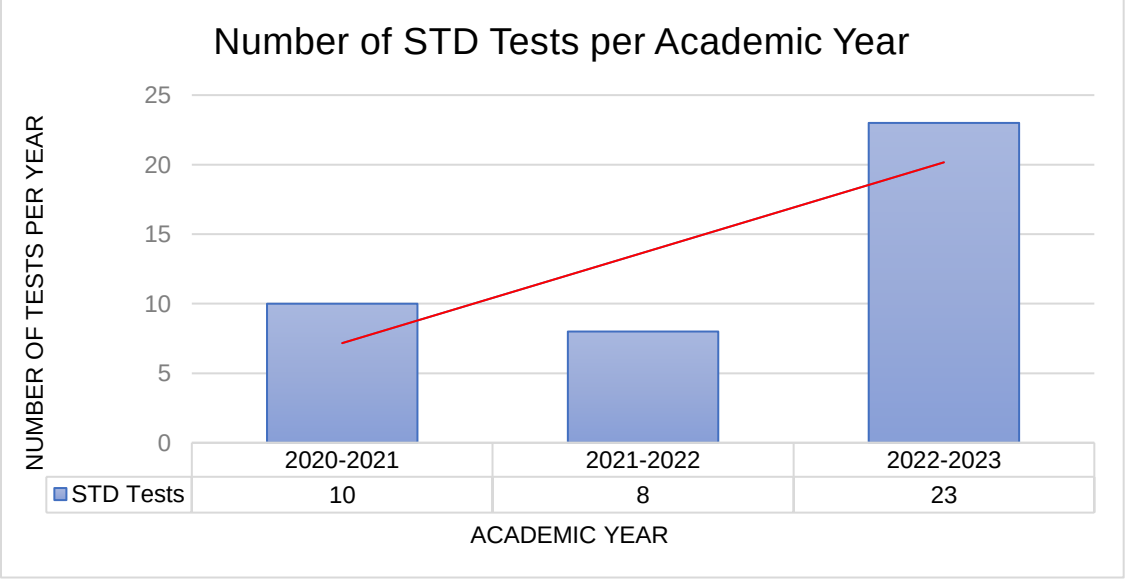
I am concerned my parent/guardian will be informed of my clinic visit	6.3%	21.1%	15.7%	14.4%

Data Analysis for STD Testing

Modification of the student nurses' role was necessary to address the barrier of fear of judgment from student nurses in the clinic. The student nurses stopped asking admission intake questions at the beginning of the 2022-2023 academic year. The student nurse completed vital signs after escorting the patient to the room. The outcome measure for the student role change intervention was the quantity of STD tests. Students are more forthcoming with personal information, such as sexual healthcare needs, if the RN or NP completes the intake assessment instead of the student nurse. After modifying the student role, the quantity of STD tests increased nearly three-fold (Figure 2).

Figure 2

University Clinic STD Tests per Academic Year



Data Analysis for Clinic Encounter Rate

The implementation of two interventions addressed the need to increase the clinic encounter rate. They included the previously discussed change in the student nurse role and RN documentation modification. The RNs began using the admission intake template and predetermined text at the beginning of the 2022-2023 academic year.

Monthly clinic encounter rates were collected for the four preceding academic years, 2018-2022, and the year following intervention implementation, 2022-2023. Microsoft Excel was used to calculate descriptive statistics and compare means through independent *t*-tests to determine statistical significance (Table 7). The mean monthly encounter rate for the four years preceding intervention implementation was 494.19 per month. The monthly encounter rate for the year following the interventions was 400.85 per month. A comparison of means using *t*-test analysis revealed a *p*-value of 0.278. With a significance level of $\alpha = 0.05$, the analysis indicated no statistically significant difference.

Table 7

Encounter Rate Statistical Analysis: Two-Sample Assuming Unequal Variances

	2022-2023	2018-2022
Mean	400.875	494.1875
Variance	35786.125	77994.41532
Observations	8	32
Hypothesized Mean Difference	0	
Df	16	
t Stat	-1.122489344	
p(T<=t) one-tail	0.139108508	
t Critical one-tail	1.745883676	
p(*T*<=*t*) two-tail	0.278217016	

t Critical two-tail	2.119905299

Discussion

The Perceived Barriers to Health Services Access at the University Clinic Survey results were consistent with the literature and supported Andersen's behavioral model of health services use. The model suggests that an individual's use of health services depends on predisposition, enabling factors, and need for care (Andersen, 1968).

Survey participants indicated they did not use health services at the university clinic because the clinic did not accept their insurance or the service cost was too expensive. Both barriers are predisposing characteristics. A student who needs healthcare may choose not to use the clinic services because they cannot afford it. Romo and Luurs (2021) found the cost of services was one of the top reasons students in their study did not use university healthcare services. The university does not accept all insurance types. Two primary forms of private insurance are not accepted because the clinic is not in the network. Two other insurance types not accepted are federal and state-funded. A clinic appointment with an NP is cost-prohibitive for uninsured students or those with one of the four non-accepted insurance types. The clinic can offer financial assistance when needed. However, the availability of the aid is not publicized or well known.

Students indicated the location of the clinic is not conducive to privacy. Findings from the literature stated students did not seek care at university clinics because of the public site of the clinic. Additionally, students did not want peers to see them at the clinic in the waiting room (Cassidy et al., 2018; Bersamin et al., 2017; Fleming et al., 2020). The location of the university clinic is in a public area of the student center. During the COVID-19 pandemic, the space outside of the clinic was used as a waiting room to

ensure proper social distancing. This practice continued. After students check in for their appointments, they are sent to the chairs outside the clinic to wait until called. The students' expectation for privacy is congruent with the predisposing characteristic, health beliefs.

The results of the survey showed students fear disciplinary action from the university. The fear is related to concerns for privacy and confidentiality. The expectation for undergraduate students is to abide by the rules in the student handbook. The rules state students are not to engage in sexual activity outside of marriage, and drinking alcohol is prohibited. Students fear that if they seek care at the university clinic for an illness related to a violation of the rules, they will be reported by the clinic staff, resulting in disciplinary action by the university. The finding is consistent with the literature. Previous studies revealed students did not trust and were afraid that providers would not keep their appointments confidential (Romo & Luurs, 2021). Andersen's model applies to the identified barrier. Though a student may recognize the need for healthcare services, predisposing characteristics such as attitude towards health providers may keep the student from seeking care. In this instance, the students identified doubt that the clinic staff would keep their appointment confidential. An additional predisposing characteristic is social status. In Andersen's original model, social status related more to a person's ability to afford healthcare services (Andersen, 1968). In this instance, a student may decide not to seek care for fear of disciplinary action and potentially dismissal from the university, adversely affecting their student and social status. An enabling factor is the environment (Andersen, 1968). The environment can involve several factors, but in this instance, the environment's safety is a consideration. If an individual feels unsafe, they

will not use available healthcare services (Cassidy et al., 2018; Romo & Luurs, 2021).

Fear of judgment from the student nurses in the clinic was the most agreed-upon barrier statement. Findings from the literature show that students do not like seeing other students in the clinic when seeking care for sexual health concerns (Cassidy et al., 2018). At the university, the student nurses in the clinic are peers of students seeking care. Peer influence is vital in young adults, and some may avoid seeking care for STDs as they are concerned their peers will judge them harshly (Fleming et al., 2020; Cassidy et al., 2018). In some instances, peers may view students seeking care for STDs as morally corrupt, which is of particular concern at a Christian university. Many students at Christian universities firmly believe that sex before marriage is wrong (Martin et al., 2018). The expectation for unmarried Christians is abstinence. Therefore, students coming to the clinic with STD symptoms may feel shame or embarrassment (Bersamin et al., 2017; Cassidy et al., 2018; Fleming et al., 2020). Students coming to the clinic may assume the student nurses will see their health record and reason for the visit, exacerbating the shame and embarrassment.

The literature indicated students often do not seek care for mental health due to fear of labeling and stigma (Nobiling & Maykrantz, 2017; Kosyluk et al., 2021). The fear of judgment by the student nurses in the clinic could be a factor in students not seeking care for mental illness. Unfortunately, the fear of judgment, stigma, and labeling only exacerbate symptoms, further increasing the need for treatment.

The purpose of changing the student nurse role was to address the students' perceived barrier of fear of judgment from the student nurses in the clinic. Research indicated students were more forthcoming with personal information, such as STD

symptoms, when asked by a licensed professional and not a peer (Bersamin et al., 2017; Cassidy et al., 2018; Fleming et al., 2020). If students indicate they have STD symptoms, then STD testing is ordered. Changing practice in the clinic to only the RNs or NPs completing the intake assessment and not the student nurses was influential. Though the data set was too small for statistical analysis, the raw numbers showed an increase in the rate of STD testing in the clinic. The increase is likely related to the change in practice.

The NP and RNs created and implemented an admission intake assessment template and predetermined text to improve documentation efficiency and decrease patient appointment length. As such, appointment availability increased daily, improving the monthly encounter rate. Data analysis did not show a statistically significant increase in the rate of encounters. The average rate post-implementation decreased by 94 patients per month compared to the mean monthly encounter for the four academic years preceding the interventions. The larger mean for the pre-implementation data could be related to the COVID-19 pandemic. More students were seen in the clinic during the 2020-2021 school year due to the need for COVID-19 testing. However, the post-implementation mean was insignificant compared to individual years before the COVID-19 pandemic.

Implications for Practice

The results of the project were not statistically significant. However, the interventions may have a more considerable impact with time. Though the encounter rate did not increase following the documentation modification, redundancy and documentation efficiency should improve. As a result, the RNs will have more time to develop positive relationships with students seeking care. Ideally, student trust in the

clinic staff will increase. Literature indicated that peer stories of poor clinic experiences negatively influenced students' perceptions of the providers (Romo & Luurs, 2021). Therefore, it stands to reason that peer stories of good clinical experiences would positively influence students' perception of providers.

The increase in the STD testing rate indicates that changing the role of student nurses working in the clinic decreased the barrier of fear of student nurse judgment. Ideally, as students' fear reduces, the NP can offer valuable education to prevent the occurrence and spread of STDs. Though not measured, the student nurse role change may positively impact the rate of clinic encounters for mental and behavioral health issues.

Limitations

Further evidence-based interventions were needed to address students' perceived barriers to healthcare services in the university clinic. However, the lack of funds and university support did not allow for development and implementation. Another limitation of the project was time. The university clinic is not open during the summer and the three weeks between Fall and Spring semesters. Therefore, the opportunity for observation, implementation, and evaluation was limited.

Recommendations

A survey tool with proven validity and reliability data is needed to assess student-perceived barriers accurately. An extended evaluation period is required to show the statistical significance of outcome measures. Additional interventions to address student-perceived barriers would improve the impact of the project. Post-implementation administration of the survey would confirm intervention effectiveness.

Undergraduate students underutilized health services at a clinic at a private

Christian university in the Midwest. The identification of perceived barriers to health service access guided the development of interventions to address the barriers. Implementation of the interventions did not increase the clinic's monthly encounter rate. However, the rate of STD tests tripled post-implementation, indicating that the intervention to decrease the barrier of "I fear judgment from the student nurse" was successful. Additional interventions are needed to address students' perceived barriers to access to increase undergraduate students' use of health services at the university clinic.

References

American College Health Association. (2018). *National college health assessment* (Reference Group Executive Summary). https://www.acha.org/documents/ncha/NCHA-II_Spring_2018_Reference_Group_Executive_Summary.pdf

American College Health Association. (2022). *National college health assessment* (Reference Group Executive Summary). https://www.acha.org/documents/ncha/NCHAIII_SPRING_2022_REFERENCE_GROUP_EXECUTIVE_SUMMARY.pdf

Andersen, R. M. (1968). *Families' use of health services: A behavioral model of predisposing, enabling, and need components* (Publication No. 6902884) [Doctoral dissertation, Center for Health Administration Studies, University of Chicago]. ProQuest Dissertations and Theses Global

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, *36*(1), 1–10. https://doi.org/10.2307/2137284

Bersamin, M., Fisher, D. A., Marcell, A. V., & Finan, L. J. (2017). Reproductive health services: Barriers to use among college students. *Journal of Community Health: The Publication for Health Promotion and Disease Prevention*, *42*(1), 155–159. https://doi.org/10.1007/s10900-016-0242-2

Best, A. L., Thompson, E. L., Adamu, A. M., Logan, R., Delva, J., Thomas, M., Cunningham, E., Vamos, C., & Daley, E. (2019). Examining the influence of religious and spiritual beliefs on HPV vaccine uptake among college women.

Journal of Religion and Health, *58*(6), 2196–2207. https://doi.org/10.1007/s10943-019-00890-y

Cassidy, C., Bishop, A., Steenbeek, A., Langille, D., Martin-Misener, R., & Curran, J. (2018). Barriers and enablers to sexual health service use among university students: A qualitative descriptive study using the Theoretical Domains Framework and COM-B model. *BMC Health Services Research, 18,* Article 581. https://doi.org/10.1186/s12913-018-3379-0

Centers for Disease Control and Prevention. (2021). *Reported STDs reach all-time high for 6th consecutive year: More than 2.5 million cases of chlamydia, gonorrhea & syphilis reported in 2019*. https://www.cdc.gov/media/releases/2021/p0413-stds.html

Centers for Disease Control and Prevention. (2022a, August 22). *COVID-19*. http://www.cdc.gov/coronavirus/2019-ncov/your-health/understanding-risk.html

Centers for Disease Control and Prevention. (2022b, September 13). *Mental health*. http://www.cdc.gov/mentalhealth/index.htm

Christmas, W. A. (1995). The evolution of medical services for students at colleges and universities in the United States. *Journal of American College Health*, *43*(6), 241. https://doi.org/10.1080/07448481.1995.9940897

Davidson, C. R., Turner-McGrievy, G. M., Messias, D. K. H., Friedman, D. B., & Robillard, A. G. (2017). Conversations about sexuality on a public university campus: Perspectives from campus ministry students and leaders. *Sex Education*, *17*(1), 103–118. https://doi.org/10.1080/14681811.2016.1243523

Flannery, M. E. (2023, March 29). *NEA news: The mental health crisis on college*

campuses. National Education Association. http://www.nea.org/advocating-for-change/new-from-nea/mental-health-crisis-college-campuses#:~:text=Specifically%2C%2044%20percent%20of%20students,campuses%20participated%20in%20the%20survey.

Fleming, C., Kerry-Barnard, S., Reid, F., Adams, E. J., Sadiq, S. T., Phillips, R., Majewska, W., Harding-Esch, E. M., Cousins, E. C., Yoward, F., & Oakeshott, P. (2020). Understanding the acceptability, barriers and facilitators for chlamydia and gonorrhoea screening in technical colleges: Qualitative process evaluation of the "Test n Treat" trial. *BMC Public Health*, *20*, Article 1212. https://doi.org/10.1186/s12889-020-09285-1

Frasso, R., Romney, M., Baker, J., Ravelli, J., & Jaramillo, L. F. (2021). On the path to health equity. In D. B. Nash, A. Skoufalos, R. J. Fabius, & W. H. Oglesby (Eds.), *Population health: Creating a culture of wellness* (3rd ed., pp. 47–70). Jones & Bartlett Learning.

Hubert, R. J., & VanMeter, K. C. (2018). *Gould's pathophysiology for the healthcare professions* (6th ed.). Elsevier.

Jessop, D. C., Reid, M., & Solomon, L. (2020). Financial concern predicts deteriorations in mental and physical health among university students. *Psychology & Health*, *35*(2), 196–209. https://doi.org/10.1080/08870446.2019.1626393

Kosyluk, K. A., Conner, K. O., Al-Khouja, M., Bink, A., Buchholz, B., Ellefson, S., Fokuo, K., Goldberg, D., Kraus, D., Leon, A., Powell, K., Schmidt, A., Michael, P., & Corrigan, P. W. (2021). Factors predicting help seeking for mental illness among college students. *Journal of Mental Health*, *30*(3), 300–307.

https://doi.org/10.1080/09638237.2020.1739245

Lanier, C., Dao, M. D., Hudelson, P., Cerutti, B., & Perron, N. J. (2017). Learning to use electronic health records: Can we stay patient-centered? A pre-post intervention study with family medicine residents. *BMC Family Practice, 18*, 1–10. https://doi.org/10.1186/s12875-017-0640-2

MacLeod, E., Steenbeek, A., Latimer, M., & Bombay, A. (2020). University students' self-rated health and use of health services: A secondary analysis. *Canadian Journal of Nursing Research*, *52*(4), 308–316. https://doi.org/10.1177/0844562119870044

Martin, N., Baralt, L., & Garrido-Ortega, C. (2018). What's religion got to do with it? Exploring college students' sexual and reproductive health knowledge and awareness of sexual and reproductive health services in relation to their gender and religiosity. *Journal of Religion and Health, 57*(5), 1856–1875. https://doi.org/10.1007/s10943-017-0432-y

McBride, S., & Tietze, M. (2019). *Nursing informatics for the advanced practice nurse: Patient safety, quality, outcomes, and interprofessionalism* (2nd ed.). Springer.

National Center for Education Statistics. (2022, May). *Price of attending an undergraduate institution*. http://nces.ed.gov/programs/coe/indicator/cua

Nobiling, B. D., & Maykrantz, S. A. (2017). Exploring perceptions about and behaviors related to mental illness and mental health service utilization among college students using the health belief model (HBM). *American Journal of Health Education*, *48*(5), 306–319. https://doi.org/10.1080/1932507.2017.1335628

Parks, R., Parrish, J., & Walker, E. (2016). Medical outbreaks on campus. In American Association of Collegiate Registrars and Admissions Officers (Ed.), *Student displacement: A guide for higher education administrators* (pp. 106–130). American Association of Collegiate Registrars and Admissions Officers. http://www.aacrao.org/docs/default-source/covid-19/student-displacement---medical-outbreaks-on-campus---chapter-6.pdf

Pehlivan, S., Tokur Kesgin, M., & Uymaz, P. (2021). Psychological distress and mental health literacy in university students. *Perspectives in Psychiatric Care*, *57*(3), 1433–1441. https://doi.org/10.1111/ppc.12709

Porru, F., Schuring, M., Bultmann, U., Portoghese, I., Burdorf, A., & Robroek, S. J. (2022). Associations of university student life challenges with mental health and self-rated health: A longitudinal study with 6 months follow-up. *Journal of Affective Disorders*, *296*, 250–257. https://doi.org/10.1016/j.jad.2021.09.057

Romo, L. K., & Luurs, G. (2021). How college students communicatively manage uncertainty about university health services. *Health Communication*, *36*(8), 1009–1017. https://doi.org/10.1080/10410236.2020.1731780

Staggers, N., Elias, B. L., Makar, E., & Alexander, G. L. (2018). The imperative of solving nurses' usability problems with health information technology. *The Journal of Nursing Administration*, *48*(4), 191–196. https://doi.org/10.1097/NNA.0000000000000598

Swietlik, M., & Sengstack, P. P. (2020). An evaluation of nursing admission assessment documentation to identify opportunities for burden reduction. *Journal of Informatics Nursing*, *5*(3), 6–11.

Thurber, C. A., & Walton, E. A. (2012). Homesickness and adjustment in university students. *Journal of American College Health*, *60*(5), 415–419. https://doi.org/10.1080/07448481.2012.673520

Tonsing, K. N., & Tonsing, J. C. (2023). Prevalence and correlates of depressive symptoms among university students: A cross-sectional study. *Social Work in Mental Health*, *21*(2), 115–128. https://doi.org/10.1080/15332985.2022.2076577

Turner, J. C., & Keller, A. (2015). College Health Surveillance Network: Epidemiology and health care utilization of college students at US 4-year universities. *Journal of American College Health*, *63*(8), 530–538. https://doi.org/10.1080/07448481.2015.1055567

U.S. Department of Health and Human Services. (2022). *Healthy people 2030*. http://10.5888/pcd18.210084

U.S. Department of Health and Human Services. (2021, May 17). *Health information policy*. http://www.hhs.gov/hipaa/for-professionals/index.html

Van Ameringen, M., Mancini, C., & Farvolden, P. (2003). The impact of anxiety disorders on educational achievement. *Journal of Anxiety Disorders*, *17*(5), 561–571. https://doi.org/10.1016/S0887-6185(02)00228-1

Wieczorek, M., & Clark, J. S. (2014). Curing inherited EHR ailments: EHR remediation fixes system issues and better aligns clinical workflow with clinical documentation. *Journal of American Health Information Management Association*, *85*(9), 56–58.

Appendices

Appendix A

Perceived Barriers to Health Services Access at the University Clinic Survey

1. **What are your barriers to seeking care in the Wildcat Clinic? Please indicate your level of agreement with each statement?** *

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
I fear punitive (disciplinary) action from the university	◯	◯	◯	◯	◯
The clinic hours are not convenient	◯	◯	◯	◯	◯
The clinic does not offer the services I need	◯	◯	◯	◯	◯
The clinic does not take my insurance	◯	◯	◯	◯	◯
The clinic services are too expensive	◯	◯	◯	◯	◯
The clinic location is not conducive to privacy	◯	◯	◯	◯	◯
I am concerned about my privacy during my clinic visit/examination	◯	◯	◯	◯	◯
I fear judgement from my peers	◯	◯	◯	◯	◯

judgement from the clinic staff	○	○	○	○	○
I fear judgement from the student nurses in the clinic	○	○	○	○	○
I am concerned my information will not be kept confidential	○	○	○	○	○
I am concerned my parent/guardian will be informed of my clinic visit	○	○	○	○	○

3. Age *

- ○ 18 - 19
- ○ 19 - 20
- ○ 21 - 22
- ○ 23 - 24

4. Grade level / Year in school *

- ○ Freshman
- ○ Sophomore
- ○ Junior
- ○ Senior

5. Race or Ethnic Background *

- ◯ American Indian or Alaska Native
- ◯ Asian
- ◯ Black or African American
- ◯ Hispanic or Latino
- ◯ Native Hawaiian or Other Pacific Islander
- ◯ White

6. Major / Area of Study *

- ◯ Art
- ◯ Business
- ◯ Chemistry/Biology/Physics
- ◯ Communications
- ◯ Criminal Justice
- ◯ Economics/Political Science
- ◯ Education
- ◯ Health Care Science
- ◯ Math/Computer Science
- ◯ Modern Language/Literature
- ◯ Music
- ◯ Nursing
- ◯ Psychology
- ◯ Religion
- ◯ Social Work
- ◯ Other

Appendix B

Institutional Review Board Letter of Exemption

Institutional Review Board
4201 South Washington Street
Marion, IN 46953

Tel: 765-677-2090
Fax: 765-677-6647

Notice of Exemption

Improving Access to Health Services at a Small Christian University Health Clinic
Title of Research Topic

Karen Hopkins, Rhonda Oldham
Investigator(s)

1784.22
IRB ID Number

The IWU Institutional Review Board has reviewed your proposal and has determined that your proposal is exempt from further review by the IRB under Exemption Rule 2i:

> (2) Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:
> (i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.

This exemption is valid for one year from the date of this notice. If there are any changes in the project during the year or if the project extends beyond the one-year period, the IRB must be notified.

Please note that this exemption regards only the oversight of human subjects research by the IRB. The IRB has not reviewed any other aspects of the research project and makes no judgement on the merits of the project or its methodologies. All research executed at IWU must conform to all applicable state and federal laws and regulations and to all applicable IWU policies.

Comments:

Ph.D.
Chair, Institutional Review Board

October 12, 2022
Date

Appendix C

Perceived Barriers to Healthcare Access at the University Clinic Consent

Hello, we are conducting research about student barriers to health services access at the University Clinic. Following is a 3-minute survey. If you want to participate, please read the following consent document.

I certify that I am over the age of 18 and am participating in this survey of my own freewill. I recognize that some or all of the questions contained in this survey may be of a sensitive nature and may cause discomfort. I understand all survey answers will be held in strict confidence and may be used by the researchers for future publications.

I understand that the purpose of the research is to identify and address barriers and improve access to healthcare at the university clinic.

I authorize Karen Hopkins of the Indiana Wesleyan University Division of Doctoral Nursing program and any designated research assistants to gather information regarding my responses to questions asked on this survey. This survey will ask about perceived barriers to clinic access and will take approximately 3 minutes to complete. If I agree to take part in this study, I understand that I will be asked to complete the survey questions listed on the following pages. I understand that my responses will be utilized for research and may become part of a published journal article or scholarly presentation.

I recognize that I will not receive monetary compensation for participating in this survey. Conversely, there are no monetary costs to me for participating.

I certify that my participation in this survey is wholly voluntary and recognize that I may withdraw at any time. I understand that I am free to skip any question I do not feel comfortable answering. There is no obligation for my participation, and I may withdraw at any time.

I understand that Karen Hopkins will be available for consultation should I have any additional questions regarding the research being conducted.

I understand that the answers given to this survey will be maintained by the researcher for a period of no less than three years after the close of the study. The researcher will store all survey data electronically on a password-protected hard drive.

I release any claim to the collected data, research results, publication of or commercial use of such information or products resulting from the collected information.

If I have any questions or comments about this research project, I can contact:

- Karen Hopkins, karen.hopkins@indwes.edu, or
- Rhonda Oldham, rhonda.oldham@indwes.edu

If I have concerns about the treatment of research participants, I can contact the Institutional Review Board (IRB) at Indiana Wesleyan University, 4201 South Washington Street, Marion, IN 46953. (765) 677-2090.

The survey is designed not to collect e-mail addresses or Internet protocol (IP) addresses. To further maintain confidentiality of the survey, please do not include your name or any other information by which you can be identified in any comment boxes that may be included in the survey.

BY COMPLETING THE SURVEY, I ACKNOWLEDGE THAT I HAVE HAD THE OPPORTUNITY TO READ THIS CONSENT FORM, ASK QUESTIONS ABOUT THE RESEARCH PROJECT AND AM PREPARED TO CONSENT TO MY PARTICIPATION IN THIS SURVEY.