

HEALTH SCIENCE PAPER ABSTRACTS

TEAM-BASED LEARNING (TBL): A STRATEGY FOR DEVELOPING NURSING STUDENTS' NCLEX PREPARATION. *MERRILL HOWARD*, GRAND CANYON UNIVERSITY. *ELLEN BUCKNER*, SAMFORD UNIVERSITY.

Team-based learning (TBL) is an active learning strategy to create a collaborative educational environment. Students apply knowledge through team building discussion verses memorization. The teaching-learning strategy was designed using the principles of TBL of preparation, in-class readiness assurance testing, and application-focused exercise (www.teambasedlearning.org) and conducted in a leadership and management course that included an NCLEX review component. TBL teams worked together for a 10-week period, and completed individual readiness tests (IRAT) and team readiness tests (TRAT) weekly. Test items and application case studies were drawn from *Prioritization, Delegation, and Assignment* (3rd Ed.) (LaCharity, Kumagai, & Bartz, 2014). In several sessions, role-play of charge nurse role was part of the application exercise.

Initial faculty and student perceptions were positive. Students engaged with the content and their different perspectives were noted. Faculty provided links to clinical examples from their practice and facilitated students sharing their rationale for divergent answers. In general, student feedback was positive for the relationships developed, the interactive nature of the approach, and the benefits of the strategy on collaboration. Future work is planned to more specifically quantify the outcomes both in relationship to the collaborative process and the NCLEX performance.

AN INVESTIGATION INTO EFFECTS OF ARTIFICIAL SUGAR IN MICE. *ALEXANDRA SELICO-DUNN* AND *UDUAK AFANGIDEH*, FAULKNER UNIVERSITY.

There is no doubt that obesity and other weight related diseases are a growing epidemic in America and in other first world countries. These are linked to the foods we consume; companies have been coming up with ways to help reverse that trend with sugar free food, drinks and sugar substitutes. According to (Sharma, A., Amarnath, S., Thulasimani, M., & Ramaswamy, S, 2016) ever since this change over to artificial sweeteners, there has been a rise in certain cancers and chronic diseases (p 237). Some people believe it has something to do with rising use of artificial sweeteners. The over usage of these sugars can cause some form of abnormal cells or genetic mutation to certain organs and the blood in the body. Thus this present research was undertaken to help further understand these artificial sugars; sucralose, aspartame, and acesulfame-K.

INTEGRATING INFORMATION LITERACY INTO HEALTH SCIENCES EDUCATION. *LAUREN YOUNG, LANCE DAY AND LORI NORTHRUP, SAMFORD UNIVERSITY.*

Employing principles from academic librarianship, medical librarianship, and previous clinical experience, faculty librarians at Samford University draw from diverse backgrounds and skill sets to equip undergraduate and graduate students in Samford University's College of Health Sciences (CHS) with the information literacy proficiencies they will need to navigate their research- and clinical-based academic programs and future careers.

The three librarians serving as liaisons to schools and programs within CHS will share specific measures they have taken to support their liaison student populations to include: Classroom-based instruction and orientations; in-person and distance reference services and research consultations; and the ongoing development and updating of online research guides and Samford-specific training videos.

This paper will feature a primer on the Association of College & Research Libraries' Framework for Information Literacy for Higher Education and a discussion of the Frames' relevance in the health sciences. Takeaways for participants will include strategies for integrating information literacy concepts into health sciences education and approaches for leveraging librarians at their institutions.

NURSING SELF-ASSESSMENT OF IPEC COMPETENCIES AFTER INTERPROFESSIONAL EDUCATION EXPERIENCES. *ELLEN BUCKNER, SAMFORD UNIVERSITY. LISA GURLEY, ALABAMA A&M UNIVERSITY.*

Interprofessional education has potential for strengthening interprofessional practice and improving the quality of healthcare. As we add these experiences to the curriculum it is important to be able to describe and measure the effects of educational innovations on the core competencies of shared values, communication, knowledge of roles and responsibilities, and the ability develop teamwork (IPEC, 2011).

The purpose of this project is to describe nursing students' self-assessment of their interprofessional education competencies before and after curriculum based interprofessional educational experiences. Several instruments were evaluated and for this preliminary study the one which was chosen has items related to each of the IPEC competencies. The survey has 16 items, with answers on a 5-point scale of strongly disagree to strongly agree (Dow, DiazGranados, Mazmanian & Retchin, 2014). Students received an email survey via Qualtrics, which allowed students to take the first 16 questions (pre-test), with the link resent at end of the term for the repeated last 16 questions (post-test) so responses could be matched.

Interprofessional experiences included a conference on collaboration in end-of-life care, a pharmacy-nursing case analysis discussion, and multi-disciplinary acute care simulation. Twenty-eight students from traditional (19) and accelerated second degree (9) BSN nursing programs completed both pre- and post-survey. Preliminary findings were that students increased in the ability to engage other health professionals in shared problem-solving, to apply leadership practices that support collaborative practice, and to engage other health

professionals to constructively manage disagreements. Further analysis of these data is planned.

TELEHEALTH SERVICES. LAURA EDWARDS, LAURA EDWARDS AND REBECCA HUIE, BIRMINGHAM VA MEDICAL CENTER.

Veterans have an easier access and greater choice to services, benefits, and care. 45% of Veterans reside in rural communities where distance and access to care can be a barrier to receiving care. Since 2002, the Veteran's Affairs (VA) has been providing clinical care and case management using telehealth technology to improve the Veteran's health. The use of clinical video telehealth, home telehealth, and store and forward telehealth offers access to care in circumstances where distance separates those providing care and those receiving care. Through the leverage of these technologies, about 12% of the total Veteran population received care through a telehealth modality in 2017. With advancements in these technologies and government regulations, the VA will enhance Veteran's care by integrating access to clinical care anywhere the Veteran is located irrespective of the Veteran's or the provider's location.

A QUALITATIVE STUDY OF NURSING AND PHARMACY STUDENT PERCEPTIONS OF AN INTERPROFESSIONAL PHARMACOKINETICS SIMULATION. JENNIFER BEALL, SAMFORD UNIVERSITY. CHERYL CROPP, MCWHORTER SCHOOL OF PHARMACY. FRANKIE WALLIS AND ELLEN BUCKNER, IDA MOFFETT SCHOOL OF NURSING.

One aspect of interprofessional practice between nurses and pharmacists involves pharmacokinetic dosing of medications in a hospital setting. This study applied the Interprofessional Education Collaborative (IPEC) Core Competencies (2011) of values, roles/responsibilities, communication, and teams/teamwork were applied to describe nursing and pharmacy students' initial perspectives following an IPE simulation applying pharmacokinetic concepts.

Methods: The investigators developed a simulation activity for senior undergraduate nursing and second-year pharmacy students. A total of 54 nursing and 91 pharmacy students participated in the simulation using medium-fidelity mannequins. Each case represented a pharmacokinetic dosing consult (vancomycin, tobramycin, phenytoin, theophylline, or lidocaine).

Nursing students completed head-to-toe assessment of the patient and pharmacy students began with a brief case vignette. Pharmacy students gathered necessary information from the nursing student as well as the chart and the calculated doses. Pharmacy students communicated the new dosing regimen (including administration and monitoring parameters) to the nursing students using SBAR (Situation, Background, Assessment, Recommendation). Nursing and pharmacy students both participated in the debrief session where each discipline identified their top priority problems related to the patient case identified during the simulation. Both groups completed an online survey approved as exempt by the IRB. Questions included: What did you learn today? What were your strengths/areas for improvement during this activity? What did

you learn about Interprofessional collaboration? Do you have any additional recommendations for improving the interprofessional education?

Results & Discussion: Seventy-seven of the respondents (64.7%) were pharmacy students while 42 respondents (35.3%) were nursing students. Themes from survey responses are being extracted. Few studies relate to this type of IPE and this study begins to explore student perceptions of IPE in a health sciences clinical context through simulation.

ON MISSION FOR MALARIA: AN EDUCATIONAL GUIDE. *SHERRI CHATMAN, SAMFORD UNIVERSITY.*

Transmission of malaria as a result of individual travel to areas where the disease is endemic can lead to a potential risk that the disease may re-emerge in the United States. CDC data indicate that approximately 1,700 malaria cases occur each year in the U.S as a result of international travelers and immigrants. Malaria is an infectious disease that continues to cause significant numbers of illnesses and deaths yearly. Travelers to endemic areas are at risk of contracting the disease and of transmitting the infection upon return to the United States. Young children are especially vulnerable as they may lack immunity to the disease. This presentation is a discussion of an educational guide that has been developed for individuals assigned to evangelical and healthcare related mission trips in malaria endemic areas. The educational guide includes information regarding pathophysiology, prevention, and treatment of malaria. Evaluation of participant's knowledge of malaria after completing the educational session is assessed using a pre-test and a post-test. The ultimate goal of this intervention is that the educational program will empower participants to educate others, especially those living in malaria endemic areas that are being served on mission trips.

EFFECTS OF 4% BLUEBERRY DIET ON ANXIETY AND ATAXIA IN A MOUSE MODEL OF RETT SYNDROME. *SUZANNE OBERHOLSTER AND RON HUNSINGER, SAMFORD UNIVERSITY.*

Blueberries contain polyphenols such as anthocyanins that are antioxidant and anti-inflammatory. Research shows that blueberries attenuate the inflammatory response of brain microglia, protect neurons from stroke-induced damage in rats and improve performance of rats on rod walking.

Most females with Rett syndrome have known *MECP2* (methyl CpG binding protein 2) mutations. Females with Rett syndrome have a myriad of symptoms including hyperventilation, anxiety, apraxia, hand stereotypies and regression in both speech and motor ability beginning at 6-12 months of age. Ataxia is a common problem in some girls and may contribute to an inability to walk at any age. The purpose of this study was to determine if a six week, 4% blueberry diet, in age matched WT and *Mecp2*-mutant heterozygous female mice would alleviate anxiety as measured by the open field test and improve ataxic parameters on the parallel rod test.

BLOCKCHAIN APPLICATIONS IN HEALTH: HYPE AND REALITY. DAVID ROBBINS, SAMFORD UNIVERSITY.

With the explosion of blockchain-based technology, driven in no small part by the astronomical valuations of cryptographic currencies such as Bitcoin, numerous applications in health care have been proposed. But do these applications solve real problems? What is a blockchain anyways? We summarize recent proposals and experiments in applying blockchain technologies to health informatics activities, separating the hype from the reality.

DIAGNOSTIC IMAGING OF LUNG DISEASE. DONNA CLEVELAND, UNIVERSITY OF SOUTH ALABAMA.

Diagnostic imaging of lung disease has undergone many changes since the first computed tomography (CT) unit was developed in 1971. CT is now part of daily practice in thoracic radiology and has reached a technological maturity. Computed radiography systems provide several advantages, including compensation for variations in exposure and thin millimeter slices of thoracic lesions. Diagnostic digital chest radiography still remains an important examination and should be done before special procedures are taken to answer specific questions. Routine chest radiography is still the most frequent method of imaging employed today. Radiographic chest studies can suggest airway pathologies such as atelectasis, endobronchial neoplasia, bronchiectasis and many other types of lung pathology, but CT provides a unique strategy for the localization and characterization of bronchial and pulmonary parenchymal disease. The most important role of CT is to determine, localize and characterize patterns within the pulmonary parenchyma, and correctly identify bronchiectasis and other lung complications. In lung cancer, imaging has an important role in accurate staging with regard to the correct selection of patients and evaluation of prognosis. CT is one of the major tests used for staging of lung disease. The role of Magnetic Resonance Imaging (MRI) with regard to lung cancer is not precisely determined. MRI can play a complementary role in the staging of lung cancer in cases of superior sulcus tumor; pericardial involvement, tumor extension in subcarinal regions and invasion of the superior vena cava. The radiologic detection of the solitary nodule is a difficult responsibility for the radiologist. CT provides the precise localization of the nodule and is reliable for analyzing radiologic features such as calcification, cavitation, and spiculated borders. The problem remains of the discovery of an incidental benign pulmonary nodule in the patient with an extrathoracic malignancy and often necessitates percutaneous biopsy under CT guidance. The evaluation of diffuse lung disease lies in pattern recognition. Chest radiography is the initial tool for diagnosis, but high-resolution CT (HRCT) can provide routine visualization of structures of less than 500 μ m. HRCT can be useful in formulating a differential diagnosis with recognition of pattern and distribution of the disease.

AN ELECTROENCEPHALOGRAPHIC STUDY OF PHONOLOGICAL EFFECTS ON WORD RECOGNITION. JOHN SHELLEY-TREMBLAY AND DONALD KNAPP, UNIVERSITY OF SOUTH ALABAMA.

Recent research in visual word recognition has shown that phonological neighborhood density facilitates visual word recognition in a variety of tasks. The current research was designed to assess whether there is an electrophysiological marker for the phonological neighborhood effect. Participants made lexical decisions to words varying on phonological neighborhood while event-related potentials were recorded. The results replicate previous research by showing that words with many phonological neighbors were responded to more rapidly than were words with few phonological neighbors. However, the main contribution of the current research is that it shows an effect of phonological neighborhood on the N400 Event-related Potential. The nature of the effect was such that the N400 was larger to words with few neighbors than to words with many neighbors. The increased N400 for small neighborhood words is thought to reflect additional semantic processing that is required for these words due to delayed processing in the phonological system.

SEXUAL DIFFERENCES IN EFFECTS OF ILEAL INTERPOSITION SURGERY ON MELANOCORTIN-4 RECEPTOR DEFICIENT RATS. COURTNEY HUNT, PING ZHAO AND COURTNEY HUNT, UNIVERSITY OF NORTH ALABAMA. ALICIA KIECHLER, ELLIOTT ZIEMAN AND APRIL STRADER, SOUTHERN ILLINOIS UNIVERSITY CARBONDALE.

Purpose: We aimed to determine the metabolic differences between male and female rats after ileal interposition surgery, and determine whether the remission of insulin resistance after ileal interposition is dependent on melanocortin-4 Receptor signaling in both male and female rats.

Materials and Methods: Fifty-two age-matched male and female rats (different genotypes) were treated with either sham or ileal interposition surgery. Glucose tolerance tests and body composition analysis were then performed.

Results: Ileal interposition surgery improved glucose tolerance in male rats, but not in female rats; the surgery increased insulin sensitivity in both male and female rats independently of genotype and body weight; the surgery decreased both fat percentage and/or fat mass in female rats, not in male rats; and the surgery did no effect the lean percentage and/or mass in both male and female rats. Melanocortin-4 Receptor deficiency decreased the lean percentage in both male and female rats but increased lean mass in male rats only.

Conclusions: Melanocortin-4 Receptor signaling is not necessary for the underlying beneficial effects of ileal interposition on glucose metabolism and insulin resistance. Female Mc4r knockout rats, in the long term, could lose more fat mass and/or fat percentage than male after ileal interposition surgery; female might thus benefit more from bariatric surgery than male.

HEALTH SCIENCE POSTER ABSTRACTS

BUILDING PARTNERSHIPS: A COLLABORATIVE CASE OF US AND KENYAN STUDENTS. SYLVIA WAWERU, UNIVERSITY OF SOUTH ALABAMA.

Seven undergraduate and graduate nursing students made a huge difference in the lives of communities they engaged with when they traveled to Kenya as part of a service abroad project. While in Kenya, they visited orphanages, donated supplies, learned about the Kenyan healthcare system and made home visits alongside University of Nairobi (UON) students. The University of South Alabama(USA) and the University of Nairobi, Kenya have a Memorandum of Understanding to facilitate research collaboration, faculty and student exchanges among other things. This visit and working alongside UON students was the first product of the memorandum. Students from both colleges also made presentations on different aspects of healthcare during a two-day intercultural event that was hosted by both the USA College of Nursing and the UON College of Nursing Sciences. This service abroad program incorporated an academic component to allow students from both universities to interact and work together. The challenge of service abroad projects in the health sciences is the sustainability of interventions after students leave the communities. This student collaboration provided a follow up mechanism for health issues encountered and hence a more impactful intervention. At the end of the seven days, some students indicated that their perceptions of Kenya were either challenged or reaffirmed, others were impressed by certain elements of the health care system and country, whereas others indicated feeling moved to create solutions for issues encountered. This poster presentation will detail the partnership building activities that the USA and UON students undertook.

ALBUMIN SITE SPECIFIC PROTEIN BINDING OF BENZODIAZEPINES. RACHEL STOGNER, SERENA CLARK, GREGORY GORMAN, PH.D. AND PAMELA SIMS, PHARM.D., PH.D., SAMFORD UNIVERSITY.

Current literature states that in general, basic drugs bind to alpha-1 glycoprotein while acidic drugs favor albumin due to differences in pharmacological properties. Our previous research showed that benzodiazepines—weak bases—were binding significantly to albumin, which contradicts published literature. The primary objective of this study is to determine whether there are differences in albumin binding site preferences of benzodiazepines and if that plays a role in why these weak bases prefer albumin over alpha-1 glycoprotein. Protein binding can largely influence drug interactions and drug displacement in a clinical setting. Identifying albumin site specific binding tendencies of benzodiazepines could potentially allow practitioners to avoid these pharmacokinetic complications moving forward.

Albumin binding site preferences of six common benzodiazepines (lorazepam, clonazepam, diazepam, alprazolam, midazolam, and triazolam) were observed using warfarin sodium and diclofenac sodium as albumin site one and site two probes, respectively. Warfarin and diclofenac were tested separately with each of the six benzodiazepines in physiologic

concentrations of albumin at 40 mg/mL. Samples were incubated, transferred to centrifree filtration devices, and centrifuged. Filtrate was analyzed using liquid-chromatography mass spectrometry to obtain the percentage of free diclofenac or warfarin that each given benzodiazepine displaced from albumin.

Results showed the largest difference in site specific displacement with alprazolam, which displaced approximately twice as much diclofenac (site two) than warfarin (site one). The second largest displacement of diclofenac was seen with clonazepam and a minimal increase in diclofenac displacement was seen with diazepam. There was no significant difference between the displacement of diclofenac compared to that of warfarin by triazolam, midazolam, or lorazepam. These results indicate that alprazolam, clonazepam, and diazepam all show a slight binding preference for site two, while the remaining three drugs show no binding preference for one site over another. While there is evidence that benzodiazepines do bind significantly to albumin, our research concludes that albumin binding site preferences influence the overall protein binding of only certain benzodiazepines.

ANALYSIS OF HEALTH INSURANCE STATUS OF STUDENTS AT SAMFORD UNIVERSITY. *JAMOND GLASS AND ASHLEY ROBERTSON, SAMFORD UNIVERSITY.*

Here in the United States the lack of health insurance coverage has been a reoccurring issue in our health system. In 2017, an estimated 24.7 million U.S. citizens between the ages of 18 and 64 were uninsured (CDC, 2017). Often people encounter the choice between paying for health insurance or another necessity, with health insurance frequently put on the back-burner. There are various reasons individuals and families are not able to pay for health insurance, often causing them to forego care. In college the majority of full time students don't have a stable income to afford to pay for health insurance out of pocket. The purpose of this study is to see if Samford undergraduate students are going without basic healthcare due to uninsurance or underinsurance. To collect information for the study an online survey will be sent out to undergraduate students on Samford's campus asking basic information about their insurance status, access to healthcare, and descriptive demographics. The information collected can potentially raise awareness of uninsured students on college campuses and spark discussion as to change in the allocation of funding on college campuses as well.

SERVICE, KNOWLEDGE IN NURSE ANESTHESIA STUDENTS AFTER SERVICE LEARNING IMPLEMENTATION. *TERRI CAHOON AND AMY SNOW, SAMFORD UNIVERSITY.*

American Association of Nurse Anesthetists (AANA) core values promoting community service include: professionalism, compassion, diversity, and interprofessional collaboration. Nurse anesthesia students (SRNAs) are rarely exposed to underserved groups outside of the operating room. Service learning projects provide experiences that help students overcome negative stereotypes, heighten sensitivity and increase empathy. The project was to determine if implementation of service learning project (SLP) would increase knowledge and participation in community, professional, or health volunteerism in SRNAs. A quasi-

experimental control trial was completed using SRNAs. Group 1 consisted of freshman and junior classes who were exposed to the SLP, and Group 2 (Control) consisted of 22 senior students, who did not participate in the SLP. Prior to implementation, both groups took a knowledge/opinion pretest and Group 2 took an attitudes survey. Group 1 participated in SLP, including the requirement to complete 20 hours of service and completed the attitudes survey prior to graduation. Both groups completed the knowledge/opinion posttest and participation survey six months after graduation. Due to small group sizes, statistical analyses for both the knowledge/opinion survey and participation survey were unable to meet assumptions of chi-square statistic. However, post-graduation participation survey demonstrated increased percentages in Group 1 for service during school, opportunities since graduation, service in first six months, and plans for service. Mann-Whitney U analysis found no differences in service attitudes scale results between groups. The treatment group had increased percentage of service participation. The SLP has become a discriminator and characteristic of the nurse anesthesia educational program.

EVIDENCE-BASED PRACTICE SUPPORTING CURRENT CERVICAL CANCER SCREENING GUIDELINES. *REBECCA THOMAS AND DAPHNE HUTTO*, UNIVERSITY OF SOUTH ALABAMA.

Background: The Papanicolaou smear (Pap smear) became a standard of practice in the 1950s. Guidelines concerning the age of initiation and frequency of testing changed in 2012, as new evidence concerning the slow growth of cervical cancer emerged. With the need to implement these new guidelines shifting from solely a patient health perspective to one of insurance coverage, it is imperative that providers and patients understand the evidence-based rationales behind the new Pap smear guidelines.

Clinical Practice Guidelines: Pap smears and HPV testing are no longer recommended before the age of 21, regardless of sexual activity. Slow growing cancers or pre-cancer of the cervix is rare in women less than 20 years of age. HPV testing is not recommended in women less than 30 years of age. Approximately 90% of HPV infection in women and young girls spontaneously clears within 2 years. Women aged 21-65 should have a Pap smear every 3 years. Those aged 30-65 who may elect to have a Pap smear with HPV co-testing every 5 years. This is a change from the recommendation of yearly screening, due to the slow growth nature of cervical cancers. Women over the age of 65 with adequate prior screening and low risk for cervical cancer may discontinue screening. There is adequate evidence that screening this population provides little to no benefit. A vaginal cuff Pap smear is no longer recommended for those who are status-post total hysterectomy, unless the hysterectomy was done for cervical cancer or pre cancer.

ETHICAL ISSUES IN SOCIAL MEDIA: A STUDY OF FIRST SEMESTER AND LAST SEMESTER NURSING STUDENTS. *FRANCES CLARKE*, UNIVERSITY OF SOUTH ALABAMA. *ELIZABETH VANDEWAA*, COLLEGE OF NURSING. *DAVID TURNIPSEED*, COLLEGE OF BUSINESS.

Through advancing technology and increased availability, cell phones, social media, and all different forms of online communication are becoming the way of the world. Physicians and nurses walk into patient's rooms asking questions and typing comments, leaving the patient wondering if they, as a human, with emotions, feelings, and concerns, are being treated, or is a number on a chart being treated? The research question for this study is to determine if there is a correlation between social media use and the undergraduate nursing student's emotional intelligence and empathy between the first and last semester. Individuals have analyzed health care worker's emotional intelligence, and analyzing health care worker's social media use, but no significant research has been done directly comparing the two. This mixed descriptive study used a survey questionnaire involving questions regarding emotional intelligence, social media, and a brief demographic section. The survey was administered in the fall to a group of first semester nursing students and a group of last semester nursing students. Completion took approximately twelve minutes and surveys were collected when each participant was finished. All student responses were anonymous. Each answer correlated to a numerical value and was entered into a computer system for analysis. Preliminary results show that approximately 40% of students have received homework help from social media, and three of the most common social media sites used include Facebook, Instagram, and Snapchat.

PEDIATRIC HOSPICE CARE: THE EFFECTS OF AN EDUCATIONAL PROGRAM FOR PEDIATRIC HEMATOLOGY AND ONCOLOGY NURSES ON END-OF-LIFE SERVICES. *MADLINE ERICKSON* AND *REBECCA THOMAS*, UNIVERSITY OF SOUTH ALABAMA.

Purpose: The purpose of this study is to compare nursing staff attitudes and knowledge concerning pediatric hospice care before and after an informative educational program meant to detail each step of when and how to refer a pediatric patient into hospice.

Background: Hospice is a special concept of care designed to provide comfort and support to patients and their families when a life-limiting illness no longer responds to cure-oriented treatments. The overall goal of hospice care is to improve the quality of a patient's last days by offering comfort and dignity. Within the last couple of decades, pediatric hospice care was initiated as an essential service in end-of-life care of children; however, there are still many areas for improvement.

Methods: The design of this research is a single group quasi-experimental pre-test post-test design. The participants were surveyed using a modified version of the "Nursing Knowledge, Attitudes, and Behaviour Regarding Hospice Care" questionnaire before and after the hospice care education program to determine if there was an improvement in understanding and overall knowledge about hospice care and the referral process. The participants were then re-surveyed

three to eight weeks later to ascertain if the education program precipitated an increase in hospice care referral rates.

Results: Data collection is currently in progress. Expected results are that nurses demonstrate a better understanding and knowledge base regarding hospice care after the education program. The author also hypothesizes that there will be an increase in hospice care referral rates after the education program.

INDUSTRIAL DESIGN PARTICIPATION IN PROJECT MANAGEMENT. *RANDALL BARTLETT AND CLARK LUNDELL, AUBURN UNIVERSITY.*

Team management often referred to in the past and recently as concurrent design/engineering and matrix management is now embracing this practice as a proven methodology. The main ingredient is that of empowerment given to the team to make decisions collectively, thus eliminating the total approval from the next level of management. The concept is based on the team making decisions in order to minimize delays and hopefully bring the product to the market fast

The role of an industrial designer is a key member that participates in the decision process. The industrial designer's role in team management is different from most other members in that they are dealing with an area that is often viewed as being subjective. Most businesses are not acutely aware of the importance of design. Industrial designers, viewed by peers and even other designers, are often considered to be just visual people and not actually concerned with practical elements. On the contrary, the industrial designer is very practical, their problem-solving methods and a holistic view is a tremendous asset in business today, especially in design thinking.

A psychological phenomenon to consider during Team Management is Groupthink, which occurs within a group of people where the results may be irrational or dysfunctional in the decision-making process. Group members try to avoid conflict in reaching a consensus decision, which often results in overlooking critical evaluation.

When critical evaluation of a possible solution is achieved the decision is often better. The synergy from the group propels even more effective decision-making. However, there is no method of decision-making that is not flawed

The industrial designer is an integral participant in the team management concept and is often the catalyst. This role will be discussed in terms of team management participation.