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SIXTH ANNUAL UIW RESEARCH WEEK

February 25 – March 1, 2013



**University of the Incarnate Word
4301 Broadway San Antonio TX 78209**

POSTER SESSION EVENT PROCEEDINGS

*Sponsored by:
UIW School of Graduate Studies and Research Office of Research Development [ORD]
UIW Office of Instructional Technology*



Dear Colleagues,

With great pleasure I welcome you to the University of the Incarnate Word's Sixth Annual Research Celebration. This week we continue and expand our tradition of celebrating academic accomplishment by showcasing the UIW research enterprise in all of its forms which gives life to the research mission of the institution and contributes to our classrooms and beyond. We are indeed fortunate to be a community of educators and scholars seeking to advance our disciplines and help shape the broader community.

UIW's research enterprise provides a format for the development of critical thinking skills, problem solving, interdisciplinary perspectives, and a social and moral orientation that informs the questions explored and their applications to the world in which live. As you examine the work of our community represented in these proceedings, you will experience the breadth of our investigators which includes numerous examples of the scholarship of discovery where original research has advanced knowledge; the scholarship of integration involving synthesis of information across disciplines, across topics within a discipline, and across time; the scholarship of application that goes beyond the service duties of a faculty to those within or outside the University and involves the rigor and application of disciplinary expertise with results that can be shared with and/or evaluated by peers; and the scholarship of teaching and learning where we have made contributions to the systematic study of teaching and learning processes.

As a result of a broad spectrum of work in higher education and the significant achievements of faculty, staff, and students, UIW enjoys a special place in the world of academe. The research presented not only showcases disciplinary accomplishment but illustrates UIW's commitment to academic excellence.

Our research celebration would not be possible without the support and effort of many individuals: the members of the Faculty Research Advisory Committee, the administrators and staff of the Office of Instructional Technology, and the School of Graduate Studies and Research Office of Research Development. To each individual who contributed to the planning and success of today's event I offer my sincere thanks and gratitude. To all presenters and attendees, please accept my best wishes and thanks for your contributions and engagement with the research enterprise.

Sincerely,

Kevin B. Vichcales

Dr. Kevin B. Vichcales, Dean
School of Graduate Studies and Research

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**COLLEGE OF HUMANITIES, ARTS & SOCIAL
SCIENCES**

WE MET IN MY MIND: EFFECT OF IMAGINED INTERGENERATIONAL CONTACT ON EXPLICIT ATTITUDES TOWARD OLDER ADULTS

Stefanie S. Boswell, Ph.D. and Mollimichelle K. Cabeldue, Honors Student

Purpose of Study

The study investigated if individuals who engaged in imagined intergenerational contact with a known older adult (OAK) reported more positive attitudes toward older adults than those who engaged in imagined intergenerational contact with an older adult stranger (OAS). Additionally, it investigated if individuals who engaged in imagined intergenerational contact with an OAK or OAS reported more positive attitudes than individuals who imagine a non-social experience (outdoor scene).

Rationale and Significance

Intergroup contact has been widely researched as a vehicle to reduce prejudice toward outgroup members (Pettigrew & Tropp, 2006). According to this theory, interaction between members of conflicting social groups should decrease intergroup prejudice and increase intergroup tolerance. Recent studies have applied the theory to indirect forms of intergroup contact, such as imagined contact (e.g., Stathi, Crisp, & Hogg, 2011). Imagined intergroup contact (IIC) simulates in-person contact using mental imagery and has yielded positive results. During IIC, individuals imagine themselves meeting and interacting with an outgroup individual. Mental imagery utilizes similar cognitive processes and creates similar emotional responses to in-person interactions (Holmes & Mathews, 2010). Although IIC may not create as robust reductions in prejudice compared to in-person contact, it provides an opportunity for contact in circumstances where in-person contact is improbable or impossible to occur (Crisp & Turner, 2009).

IIC interventions have been utilized to study attitudes toward various outgroups, including older adults (Turner & Crisp, 2010; Turner et al., 2007). The simulated intergenerational interactions in these studies, however, involved only contact with an OAS. It is possible that these types of imagined interactions may be of lower quality than imagined interactions with an OAK.

Description of Methodology

Participants were 60 undergraduates (20/condition; 60% female, 66.7% Hispanic, 46.7% freshman) randomly assigned to engage in a two-minute imagined interaction with either OAK or OAS, or imagine a non-social condition. Participants then briefly wrote about the content of their mental imagery; they then completed a demographic questionnaire and the refined Aging Semantic Differential (ASD; Polizzi, 2003). The ASD consists of 24 opposite-adjective pairings and measures explicit attitudes toward older adults; higher scores indicate more positive attitudes.

Findings and Conclusions

IIC condition did affect attitude, $F(2,57) = 5.05$, $p = .01$. However, attitude did not differ significantly between the OAK ($M = 26.95$) and OAS ($M = 34.75$) conditions. Additionally, attitude did not differ significantly between the OAK and non-social ($M = 17.30$) conditions. The only significant difference in attitude emerged between the OAS and non-social conditions. Attitudes toward older adults did not differ depending on the nature of the participants' relationship with the target (e.g., familiar vs. novel relationship). Compared to the non-social control condition, only imagined interaction with a novel individual produced a significant improvement in attitudes. This finding suggests that interaction with unfamiliar individuals may have a more significant impact on attitudes than interaction with known persons.

THE EFFECT OF CONTACT WITH MENTALLY ILL INDIVIDUALS ON PERCEPTIONS OF THEIR ABILITY TO REHABILITATE FOLLOWING CRIME

Mollimichelle K. Cabeldue, Honors Student, and Stefanie S. Boswell, Ph.D.

Purpose of Study

This study investigated the effect of contact with mentally ill individuals on perceptions of their ability to rehabilitate after committing a crime. It was hypothesized that contact with mentally ill individuals would significantly affect determination of ability to rehabilitate; those with more contact with individuals with mental illness would be more likely to believe an offender has the ability to rehabilitate (data for this investigation originated from another study by this author).

Rationale and Significance

Rehabilitation could affect the type of punishment or length of sentence given to a criminal offender. Many factors, such as age, affect public perception of ability to rehabilitate (Orellana, 2009). Contact with mentally ill individuals could also affect perception of their ability to rehabilitate after committing a crime; however, there is little research in this area.

Description of Methodology

Participants were 61 undergraduates (54.1% Hispanic, 75.4% female, 67.2% senior) at a medium-sized university who completed a demographic questionnaire and read nine crime vignettes. Vignettes were created using a 3 (age: juvenile; adult; no specified age) by 3 (mental health concern (MHC) status: no MHC, mild MHC, severe MHC) design. Participants determined offenders' likelihood to rehabilitate; this was measured using a 6-point, Likert-type scale ranging from 1 (very probably not) to 6 (definitely). Participants also indicated whether they had no to little or moderate to a lot of contact with individuals with mental health concerns.

Findings and Conclusions

There was no significant age by mental health interaction effect, so likelihood to rehabilitate was averaged across ages for each MHC category. Degree of contact affected perceived likelihood to rehabilitate of the mild MHC condition only, $F(1,59)=7.18, p=.01$. Compared to the moderate to a lot ($M=3.42$) group, individuals in the no to little ($M=2.67$) group rated mildly ill offenders as significantly less likely to rehabilitate. Degree of contact with mentally ill individuals did not affect perceived ability to rehabilitate for individuals with no MHC (no to little $M=2.85$; moderate to a lot $M=2.45$) or a severe MHC (no to little $M=2.94$; moderate to a lot $M=2.41$).

Contrary to the hypothesis, individuals with no to little contact with mentally ill individuals rated mildly ill offenders as significantly less likely to rehabilitate. Degree of contact had no effect on rehabilitation perceptions for individuals with a severe MHC or no MHC. Participants may have attributed mildly ill offenders' behavior to an internal, stable characteristic that is less amenable to change (Corrigan et al., 2000). This information would be helpful for attorneys in jury selection. Jurors with contact with mentally ill individuals may be more likely to perceive mentally ill offenders as less likely to be able to be rehabilitated and as a result might give them a longer sentence.

WHO DESERVES PRISON TIME? THE EFFECTS OF AGE AND MENTAL HEALTH ON PERCEPTIONS OF CRIME AND REHABILITATION

Mollimichelle K. Cabeldue, Honors Student, and Stefanie S. Boswell, Ph.D.

Purpose of Study

This study investigated the effect of age and mental health status on criminals' sentence length and perceived ability to rehabilitate. Hypotheses were:

1. Juveniles would receive shorter sentences and be perceived as more likely to rehabilitate than adults or individuals without a specified age.
2. Individuals with a severe mental health concern (MHC) would receive longer sentences and be perceived as less likely to rehabilitate than individuals with mild or no MHC.

Rationale and Significance

Many factors influence juries' sentence length determinations. For example, some studies indicate that juveniles are more likely to receive shorter sentences (Warling & Peterson, 2003). Additionally, mental health may affect sentence length. Offenders with health problems receive shorter sentences; however, little research addresses mental health's effect on sentence length. Many factors also affect perceived ability to rehabilitate; for example, age. Past research has found that juveniles were perceived as more likely to rehabilitate (Orellana, 2009). Unfortunately, little research investigates perceptions of ability to rehabilitate mentally ill offenders.

Description of Methodology

The study used a within-subjects experimental design. UIW undergraduates ($n=61$, 54.1% Hispanic, 75.4% female, 67.2% senior) were recruited from psychology courses. They read vignettes that described crimes. Vignettes crossed 3 levels of the two independent variables, age (juvenile; adult; no specified age) and MHC (no MHC, mild MHC, severe MHC), for a total of nine vignettes. The dependent variables were sentence length and likelihood to rehabilitate. Sentence length was measured using a scale of 5-99 years; likelihood to rehabilitate was measured using a Likert-type scale ranging from 1 [very probably not] to 6 [definitely].

Findings and Conclusions

Both MHC, $F(2, 120)=27.734, p<.001$, and age, $F(2, 120)=7.34, p=.001$, affected sentence length; there was no interaction effect. Offenders with no MHC ($M=62.82$) received longer sentences than offenders with mild ($M=44.89$) or severe ($M=38.95$) MHC. Individuals with mild MHC received longer sentences than those with severe MHC. Although little research investigates MHC's effect on sentence length, it does find that individuals with physical health concerns are more likely to receive shorter sentences than healthy individuals (Mueller-Johnson & Dhami, 2010). It is likely that this research could be generalized to individuals with mental health concerns. Juveniles ($M=44.62$) received shorter sentences than adults ($M=51.49$) and those with no specified age ($M=50.54$). Jurors may feel less comfortable assigning long sentences to juveniles versus adults. Mental health $F(2, 120)=5.66, p=.004$, and age, $F(2, 120)=10.69, p<.001$, affected perceived ability to rehabilitate. There was no interaction effect. Individuals with mild MHC ($M=3.08$) were perceived as more likely to rehabilitate than those with no ($M=2.67$) or severe MHC ($M=2.69$). This may be attributable to greater stigmatization associated with disorders that are considered more severe (schizophrenia) compared with disorders that are considered milder (mild depression). Jurors may view offenders with mild disorders more favorably and as more likely to change (Mann & Himelein, 2004). Juveniles ($M=2.97$) were perceived as more likely to rehabilitate than adults ($M=2.71$) or individuals with no specified age ($M=2.77$). This supports previous research that found that juveniles were considered more likely to be rehabilitated even when convicted of serious crimes (Orellana, 2009).

COMPARING CHINA'S ECONOMIC DEVELOPMENT: GUANGZHOU, HUADU, AND PANYU

Victoria Figueroa, McNair Scholar and Lopita Nath, Ph.D.

Purpose of Study

The intent of this study is to explore the economic changes in China and the impact on the socio-economic life of the middle and lower classes. The primary research questions explored how the people interviewed perceived the economic development in the Guangdong Province where they lived. The participants were also questioned about human rights issues.

Rationale and Significance

Exploration of the perceptions of Chinese citizens about economic development can give light to the impact of social and economic policies and guide policymakers when decisions are being made on long term investment in China. This study analyzes China's economic growth in the last ten years and the disparities that are affecting the society. The study of the three districts shows that if China hopes to keep its global standing it has to focus on the improvement of education, health care, and the distribution of wealth to the lower classes.

Description of Methodology

This study was conducted using a mixed methodology of interviews along with analytical analysis of literature pertaining to the development of the cities of Guangzhou, Huadu and Panyu. Participants were identified and selected first by meeting students during principle investigators study abroad at a local university in Guangzhou. The students then enabled a connection to their relatives living in these areas.

The in-person interviews were conducted through a translator and voice recorded. Other interviews were conducted through emails between the principle investigator and the participants. Both the recorded and emailed interviews were transcribed into English by the translator. One significant subject matter that was important to this study was the element of trust the principle investigator had to build with the students and their families before interviewing them.

Findings and Conclusions

China's overall developed economy in the last decade has contributed to the growth of the import-export city of Guangzhou. For all intents and purposes, China is no longer a developing country but a developed one. It has the market for a sustainable economy present in cities like Guangzhou and its districts especially, Huadu and Panyu. These areas are the main focus for foreign industries and are the major locations for their factories and corporations. The large influx of foreign markets centralizes around this port city before flooding into mainland China. However, while some parts of the cities reflect the growing middle class, others have not received this distribution of wealth despite the abundance of development opportunity. There is still much poverty throughout the main city as well as the rural areas of the districts. The lower classes do not have easy access to health care and a decent education. But it can be said these areas are slowly becoming more prosperous. This research had certain limitations that greatly affected the conclusion of this research such as; the language barrier, the overall lack of information on the two districts as well as the resistances of the participants to answer questions on government laws and policies. Yet these interviews where the main components in understanding that the Chinese society is on the path towards full socio-economic development while at the same time maintain its own type of government, culture, and traditions even while opening up to foreign markets, known as the "the Chinese Way."

MOTIVATED BIAS IN HEALTH REACTIONS: DO INDIVIDUAL DIFFERENCES MATTER?

Lisa K. Lockhart, Ph.D., Michael B. Angelos, Psychology Student, Ashely A. Garcia, Psychology Student, and Joshua M. Macias, Psychology Student

Purpose of Study

We investigated whether there are individual differences (IDs) in how people react to receiving preference-consistent vs. preference-inconsistent information. It was hypothesized that receiving an unfavorable medical test result would be so compelling that it would override any personality differences.

Rationale and Significance

Motivated reasoning studies demonstrate that people treat preference-inconsistent information more skeptically than preference-consistent information (e.g., Ditto & Lopez, 1992). Downplaying the accuracy of a medical test that suggests that one is sick is a robust effect that has been found repeatedly (e.g., Ditto & Lopez, 1992; Ditto, Scepansky, Munro, Apanovitch, & Lockhart, 1998). However, the question of whether ID variables are associated with differential reactions to preference-inconsistent and preference-consistent information remains. The current study explored whether personality characteristics conceptually related to reactions to health outcomes (see Methodology) were associated with differential reactions to preference-inconsistent vs. preference-consistent medical information. This contributes to the literature by assisting in defining the parameters of these differential reactions to unfavorable and favorable medical information.

Description of Methodology

Participants passing a screening for hypochondrical tendencies (N=68; 70% female; 55% Hispanic, 35% White) self-administered medical tests and provided reactions to them. The relevant dependent measure was participants' reaction to results of a test for a fictitious enzyme, TAA (Thioamine Acetylase; Croyle & Ditto, 1990). The outcome of the TAA test was manipulated: half received a favorable outcome (immunity from pancreatic disease); half received an unfavorable outcome (susceptibility to pancreatic disease). Participants rated the accuracy of the test. We predicted those who received unfavorable information would rate the TAA test significantly less accurate than those who received favorable information. Furthermore, we predicted the ID measures (specifically, health-locus-of-control, self-esteem, optimism, mastery, and independent and interdependent self-construal) completed prior to the medical tests would not substantially affect these reactions. After participants' reactions to the TAA test were assessed, they were debriefed and assured that the test was fictional, having no bearing on their actual health. Hierarchical multiple regression analyses were conducted with TAA condition (favorable/unfavorable) in Step 1 and the IDs and their interactions in Step 2 to determine whether they were significant predictors of TAA test accuracy ratings.

Findings and Conclusions

Confirming previous findings, TAA Condition was a significant predictor of TAA accuracy ratings [$F(1,67)=17.75, p<.001$]. Although Step 2 was significant [$\text{change}R^2=.22, F(1,67)=2.33, p<.05$], in support of our hypothesis that IDs would not be significant predictors, the only significant finding beyond the effect of TAA Condition was a MasteryxTAACondition interaction ($t(67)=-2.32, p<.05$). Further inspection indicated high Mastery participants rated TAA accuracy higher in the Favorable condition and lower in the Unfavorable condition than low Mastery participants. In support of our hypothesis, these findings suggest that receiving unfavorable medical information in the context of the TAA paradigm appears to overpower personality characteristics. Although those higher and lower in Mastery reacted differently, the stability of this effect should be further examined. These results taken along with those of other studies (Lockhart, 1998) suggest that receiving negative information about our health is possibly so threatening that we react similarly regardless of any personality differences. Further investigation into how IDs affect our judgment is warranted.

GREAT ALBANIAN PLAYS: THE SEARCH FOR ANTHOLOGY-WORTHY PLAYS AND PLAYWRIGHTS

Mark J. Stringham, MFA

Purpose of Study

The purpose of this study is to create a list of Albanian plays of which contemporary Albanian theatre professionals consider to be the greatest Albanian plays of all time. The result is a table of contents for a future anthology of great Albanian plays. Research questions include: a) Which play or plays best represent a particular Albanian style, zeitgeist, or artistic movement; b) Which playwrights are writing new and relevant plays today; and c) Do these plays have an existing script available for English translations?

Rationale and Significance

Albanian plays are significant because they give the world an insight into a group of people who still hold on to a code of ethics that has existed for centuries. The values of this code are clashing against modern influences in theatre. The need to translate Albanian literature is urgent. This research is an initial step to raise the Albanian theatre profile, to teach us about their unique culture, and to further contribute to our understanding of the human condition.

Description of Methodology

A questionnaire was handed out at major theatres and universities in Albania and Kosovo. This questionnaire asked the following question: "Which Albanian plays or playwrights of all time do you consider to be the best plays Albanians have to offer?" Although many excited audiences also filled out questionnaires, more weight was given to the opinions of theatre professionals and scholars. Smaller provincial theatres provided 10-15 questionnaires, while national theatres provided 25 responses or more. Overall, 157 questionnaires were recorded from 10 different theatres in Albania and Kosovo during the summer of 2012. Value was placed on individual titles by writing the most important titles first. Many questionnaires had titles and names of playwrights assigned to a number, with the number one being written next to the play which was most valued above all others on the list, then two, three, etc.

Findings and Conclusions

The questionnaires provided the following titles and playwrights:

The Fourteen-Year-Old Bridegroom by Anton Cajupi; *The General of the Dead Army* by Ismail Kadare; *After Death* by Anton Cajupi; *The Vow* by Sami Frasheri; *The Event in the Factory and The Case of the Engineer Samiri* by Fadil Pacrami; *The Death of Pirro* by Mihal Grameno; *Skenderbeg* by Etehem Haxhiademi; *The Second Face* by Dritero Agolli; *Short Cloudiness* by Teodor Laco; *Our Land and Halili and Hajria* by Kol Jakova; *The Fisherman's Family* by Sulejman Pitarka; *The Prefect* by Besim Levonja; *Liza is Sleeping* by Jeton Neziraj; *Allegretto Albania* by Stefan Capaliku; *The Wedding of Lunxheria* by Koto Hoxhi; *Mother Duty* by Foqion Postoli.

These titles represent playwrights and/or plays which received a strong representation on the majority of lists. Due to the variables existing in such an inquiry, the titles and plays mentioned above are in no particular order.

SEARCHING FOR THE “LIVING” AMONGST ALBANIANS: THE ABSENCE OF ALTERNATIVE THEATRE IN ALBANIA AND KOSOVO

Mark J. Stringham, MFA

Purpose of Study

This study examines the search for any signs of past, current, or future alternatives to conventional theatre in Albania and Kosovo. Research questions include: Are there theatrical experiences that openly oppose cultural traditions, political restrictions or multicultural coexistence? How are the problems of nationalism and alternative theatres in the region? Does Albanian culture play a hand in the minimization of alternative theatre practices, as evident in Albania and Kosovo? Are there alternative forms of theatre in Albania and Kosovo? Has war or Kosovo independence had an alternative effect on today's theatre?

Rationale and Significance

The development of theatre in Albania and Kosovo has been grossly unknown across the world of theatrical academia. Their experiences through multiple wars and communist rule offer a unique and intriguing scenario. Albanian theatrical activity, both in Albania and Kosovo, is significant because it gives the world an insight into a group of people who still hold on to a code of ethics that has existed for centuries. The values that make up this code are clashing against the wave of modern influences in theatre. As Robert Elsie once said, “after years of isolation, oppression, and incredible poverty, they now have much to tell us. Contemporary Albanian literature has many a tiny glittering stone to add to the mosaic of modern culture.” This research is a step to raise the Albanian theatre profile, to teach us about their unique culture, to compare their theatrical evolution to ours, and to further contribute to our understanding of the human condition.

Description of Methodology

A chronology of theatrical events, ranging from 1886 to the current day was recorded, with special attention to the theatrical events happening through the 1990's and any theatrical endeavors which may have been influenced by the revolt against communism or by communism itself. A search across periodicals and newspapers was conducted which focused on finding any alternative theatre practices by theatres or organized groups. Finally, interviews were conducted with Josif Papagjoni, Albania's leading dramaturge, and Stefan Capaliku, theatre professor and award winning playwright at the University of Tirana, with the intent to shed some light on alternative theatre practices in Albania and Kosovo.

Findings and Conclusions

No major diversions from conventional or traditional theatrical practices were found. The cities of Tirana, Durrës, Elbasan, Fier, Korce, Saranda, Shkoder, Vlore, Pogradec, Diber, Prizren, and Prishtina were the cities with mention of theatrical activity. Within these cities, the majority of theatrical productions are considered traditional, with radical change of subject matter and theatrical styles in extreme cases. Kosovo, specifically Jeton Neziraj, has the majority of productions that seem to break away from what traditional audiences are used to. If alternative theatre fights against the theatre itself, Albanian and Kosovo theatre revolts against anti-Roma discrimination, co-existence between Serbs and Muslims, and arbitrary political interferences with independent cultural institutions. The uncertainty of national and cultural identity is the motivating force for culturally and politically charged theatre, and traditional theatre is still an effective vehicle for this voice.

FRONTAL EEG ASYMMETRY LINKS APPROACH MOTIVATION TO ATTRACTIVE FACES: A PILOT STUDY

Teresa Taylor-Partridge, Ph.D., Rachel Schindel, BA, Paisley L. Pauli, Psychology Student, and
Judith H. Langlois, Ph.D.

Purpose of Study

To investigate whether Frontal electroencephalogram (EEG) asymmetry from F3 and F4 differs when adults look at attractive faces compared to unattractive faces.

Rationale and Significance

Frontal electroencephalogram (EEG) asymmetry measures neural correlates of evaluation resulting in approach (left asymmetry) and avoidance (right asymmetry) motivation in infants and adults (see Fox, 1991); however, rarely is this technique applied to study stimuli characteristics across age groups. Such research may provide important information about the development of evaluative mechanisms by detecting neural activity that represents social evaluation across the lifespan. Taylor-Partridge (2009) found that infants display greater left asymmetry when looking at faces rated by adults as high on attractiveness compared to low. If EEG asymmetry is a consistent measure of social evaluation eliciting approach/avoidance motivation in response to faces differing in attractiveness in adults, then adults should show the same EEG asymmetry pattern as infants.

Description of Methodology

Seven male and six female UIW undergraduate students (Mean age = 22 years) were involved in the study. Participants viewed static images of 5 attractive, female faces (Mean attractive rating = 4.52) and 5 unattractive female faces (Mean attractive rating = 2.37) on a computer screen five seconds each. Each face stimulus was rated by at least 40 undergraduates on a 7 point Likert scale with 1 as low (alpha > .95). EEG data was acquired from F3 (mid-frontal left) and F4 (mid-frontal right) and referenced to CZ using Neuroscan bioelectrical, signal acquisition system. Adults wore an electrode cap with pre-positioned (Jasper, 1958) Ag/AgCl electrodes containing QuickCell sponges dampened with electrolyte solution (impedances $\leq 5000 \Omega$). After applying fast Fourier transform (FFT) to artifact-free epochs for each condition to compute raw power in the adult alpha band (8 to 13Hz), we calculated the EEG asymmetry index $[\ln(F4) - \ln(F3)]$ for each face type. Alpha power is inversely related to activation, thus a positive EEG asymmetry index indicates greater activation in the left frontal region compared to the right frontal region and vice versa. Paired sample t-test were conducted on EEG asymmetry for attractive vs. unattractive faces.

Findings and Conclusions

Participants showed significantly greater left asymmetry for attractive faces ($M = .02$; $SD = .16$) than unattractive faces ($M = -.07$; $SD = .12$), $t(12) = 2.33$, $p = .02$, $r = .56$ (large effect). With greater right asymmetry pattern, it would appear that adults have greater motivation to avoid unattractive faces compared to attractive faces. The results suggest that adults differ in motivation to approach/avoidance motivation when viewing attractive and unattractive faces. These findings are consistent with EEG asymmetry findings for infants and support the use of EEG asymmetry in the measurement of social evaluation across development. Because greater right activation is associated with avoidance, this finding may indicate that adults are more interested in avoiding unattractive faces than approaching attractive faces. The implications for this method with adults is that it may capture implicit evaluation of faces when participants are reluctant to admit to biases against faces varying in attractiveness or other characteristics such as race, gender, or age. While other methods are used for implicit evaluation, this method may be the only one currently applicable across development.

DREEBEN SCHOOL OF EDUCATION

ACTION RESEARCH ON MAINTAINING VALIDITY AND IN NUMBER NAMES RESEARCH IN MULTIPLE INTERNATIONAL SITES

Judith E. Beauford, Ph.D., Absael Antelo, Ph.D., and Suzanne Meche, MA

Purpose of Study

To assess the validity of the number names project across locations and cultures.

Rationale and Significance

In our primary research project, children are introduced to numbers using a naming system with place value meanings of two digit numbers (26 = two ten six). Longitudinal results showed the benefits of transparent number names persist through elementary school (Beauford & Meche, in press). If the benefits are real and generalizable, they should be apparent no matter the language, culture, or curriculum. To test this idea the project was expanded to a larger school in Texas and to several schools in Mexico and Bolivia. While the additional sites contribute to the generalizability of results, they may also introduce variation in the intervention because of issues related to distance, communication, and coordination of tasks. Questions of validity naturally arise. Using the theoretical framework of Creswell (2006), we tested for internal and external threats to validity. Internal threats of concern are history, instrumentation, maturation, regression, mortality, and diffusion of treatments. The external threat considered is the interaction of setting and treatment.

Establishment of validity will add to the credibility of results. Evidence of the benefits of the use of transparent number names may guide future research in many cultures. Through our international conversation in conferences and our Facebook page and website, we have discovered interest in the researchers on the topic in Norway, Malaysia, Sweden, United Arab Emirates, Vietnam, and other countries.

Description of Methodology

Data to measures of validity are gathered from classroom observations, conversations with 15 persons at a biennial seminar, surveys of 30 teachers on location, 100 student assessments, and 8 interviews with teachers and local project directors. We use grounded theory methodology to develop a deeper understanding of the process in order to strengthen the consistency of implementation of the intervention.

Findings and Conclusions

Internal threats of history include exposure to traditional number names in children's homes. Life experiences of the children distort their reactions to the assessment. The assessment instruments used are translated into the native languages of instruction at each site. Natural maturation of the children and their exposure to the same assessment may affect their also performance. Individual motor skill development differs between genders. Children at the extreme ends of ability may skew the results. Test subjects change each year as the children and teachers enter and leave the schools or classes. Diffusion of treatments is a major concern as the abilities and enthusiasm of teachers vary. Classroom design, environmental print, and teacher use of traditional number names are all external threats to validity. It is impossible to prevent contamination to the intervention. However, all of these issues must be addressed in an effort to minimize their impact. With the analysis of this action research data we are able to fine tune the protocol of the primary project to adapt to diverse circumstances. As we gain experience in this project, we improve in the cross cultural competencies required to conduct international research.

TRANSFORMATIVE LEARNING PRAXIS AS A MODEL FOR CROSS-CULTURAL RESEARCH METHODOLOGY

M. Alison Buck, Ph.D., Sr, Dorothy Ettling, Ph.D., and Gerald Sseruwagi, Ph.D.

Purpose of Study

The purpose of this qualitative descriptive study is to investigate the theory of Transformative Learning praxis as a methodological framework for cross cultural research. The question researched is, “How have previous studies by these authors utilized Transformative Learning theory as a design framework for cross-cultural research?”

Rationale and Significance

Cross-cultural research, once the domain of anthropology, is now a fundamental aspect of almost every academic discipline. Researchers are working with projects in a variety of settings and with a combination of persons from a multitude of cultures across the globe. In reflecting on transformative learning, Duveskog, Fris-Hansen, and Taylor remind us of “the context-dependent nature of the theory” (as cited in E. Taylor & P. Cranton, 2012, p. 564) and challenge us to move beyond Eurocentric perspectives towards greater cultural relevance in research and practice.

In conducting cross-cultural research, there are several cultural sensitivities to be carefully considered. Researchers need to have the following skills and qualities for the success of their research: “tolerance for ambiguity, patience, adaptiveness, capacity for tacit learning and courtesy” (Laverack & Brown, 2003, p. 334). To collect excellent and reliable data from individuals from different cultures, researchers need to develop a trusting relationship with their research participants and establish a good rapport for maintaining cultural sensitivity (Laimputtong, 2008, p. 5). Solomon Benstar and Peter Singer (as cited in Laimputtong, 2008, p. 13) advocate that for any ethically grounded cross-cultural research, there must be an understanding of the participants’ “world view or value system.”

Transformative Learning praxis is offered as a framework for underpinning the design and methodology of cross-cultural participatory research. With an emphasis on critical reflection, Transformative Learning theory provides a model—constructs, language, categories and dynamics – to enable others to understand how adults act in various cultural settings (Mezirow, 2009). Transformative Learning theory also has implications for personal development of the emotions and the concept of self (Kang, 2007), as well as behavioral development (Taylor & Elias, 2012). Transformative Learning practice presupposes a set of attitudes and a range of disciplined habits that can inform and shape the study design. In this way, one could say it becomes a research framework or praxis.

Description of Methodology

This study’s methodology is a content analysis of previously collected interview data from documented cross-cultural studies completed by the three authors with women participants, individually and in small groups in Bukoba, Tanzania and nearby villages. The researchers are using the lens of Transformative Learning (TL) to search the data for evidence of the following TL praxis criteria: uncovering hidden contradictions; fostering emancipatory knowledge; engaging reciprocally; mutually negotiating meaning and power; and promoting the possibility of social transformation (Lather, 1986).

Findings and Conclusions

Preliminary analysis indicates that the research process engaged by the authors does indeed give evidence of Transformative Learning theory and that this theory base can be useful as a praxis model for cross-cultural research.

A STUDY ON VIOLENT BEHAVIOR IN SPORTS FROM THE VIEWPOINT OF HEROISM– EXAMPLE OF ICE HOCKEY

Pei Hsun Chin, Doctoral Student

Purpose of Study

The purpose of this study is to investigate the complex violent factors in ice hockey games when heroism is applied. The researcher is seeking to determine if there is a relationship between athletes' violence and heroism on the ice hockey field. The sport of ice hockey includes many complex phenomena and different meanings. In order to achieve conclusive results, the research focuses on the motivation, procedures, and inner feelings and thoughts of ice hockey athletes.

Rationale and Significance

Violence in professional sporting events has been gradually increasing (Hsu, 2007). The questions related to violence in sports have become an important research target. Based on the scholar's point of view, the modern sports system has a heroism value which may continue to be agreeable and win the support from the populace (Smart, 2005). The essence of modern sport competition stresses that the athletes demonstrate the best part of themselves during games and pursue high achievement in their athletic careers (Woods, 2007; Giulianotti, 2005). It will focus on the viewpoint of heroism and discuss athletes' physical expertise on ice hockey field. It also will attempt to determine how heroism affects athletes in both physical and mental levels.

Description of Methodology

This study investigated the heroism viewpoint in violent behavior in the sport of Ice Hockey. The research participants included seven national ice hockey players who are in a hockey training program for at least eight years. The participants, who play in international ice hockey games frequently showed violent behavior and committed fouls in each competition. In order to measure the levels of the research subjects' inner and outer emotions when the violent behavior happened during ice hockey competitions, this research was conducted by interviewing and observing participants during a three week time period. During the data collection process, I used in-depth interviews to encourage the participants to express their feelings as much as possible regarding the various thought processes concerning their violent behavior and how it affects the participants. Does violent behavior translate into becoming a hero in the game or does it allow a competitive edge in game performance? The interview was conducted using a semi-structured technique. Since it was sometimes difficult for the participants to express clearly the true meaning from their inner thoughts as to why they behave violently, observation of the participants was conducted. Records of the participant observations were created during the data collection process. Finally, I used a qualitative phenomenological/heuristic technique in my data analysis. I reviewed each transcript word by word, breaking down the material through inspection, comparison, and generalization in order to explore the idiosyncratic meaning of my participants' responses, focusing mainly on their own experiences/feelings of the violent behavior.

Findings and Conclusions

Conclusions from this research include: 1. Players are not angry when violent behavior appears. Players are desperate to conquer the opponent. 2. Fans' reaction did not affect players' behavior. 3. The main reason a player displays heroic behavior during a game is to allow his leadership skills to guide the team to a win. People who become heroes in the sport of ice hockey sport do not display violent behavior; they can control their emotions in key moments. The hero should have the skills to redirect the team by using proper strategies. Violent behavior creates serious injuries on ice hockey field. A standard that players must learn is understanding the basic skills of ice hockey. It is also a performance habit. I hope the results of this research can renew the image of domestic ice hockey players, coaches. It enables us having more enlightened thoughts about violent behaviors and uses it as a research direction in the future.

A CORRELATION STUDY OF SELECT FACTORS ON THE WOMEN'S INTERNATIONAL DEVELOPMENT IMPACT SURVEY

Sr. Dorothy Ettling, Ph.D., Michael Guiry, Ph.D., and Howard Marquise, Doctoral Student

Purpose of Study

The purpose of this study is to investigate the possible correlations between the results of the Women's International Development Impact Survey (WEDIS) and several demographic factors of rural women in Bukoba Tanzania.

Rationale and Significance

The literature on women's empowerment in developing countries points to empowerment as a process of change rather than a static condition (Kabeer 1999a; Jejeebhoy 2002; Malhotra 2002). It includes on-going steps of awareness and understanding, and is evidenced in changed behavior. Kabeer (1999b) offers a definition of empowerment that can be applied in the context of capacity building: "The expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them" (p. 437). Defined as such, empowerment is an integral part of the development process in any group or local society. The ability to make strategic life choices and the capacity for self-determination are prerequisites in the process of drawing out individuals' latent capabilities to empower themselves and thereby enrich the community (Kabeer 2001). Kabeer (2001) further argues that empowerment contains three inter-related dimensions: resources (access and future claims on material, human and social resources), agency (the ability to define one's goals and act upon them) and achievements (well-being outcomes). Much of the literature on the concept of empowerment stresses this second aspect of choice and personal agency. This element of agency necessitates that the women, themselves, must be significant actors in any process of change that is being described or facilitated (Sen 1992; Murphy-Graham 2008). Yet research clearly warns that gender inequalities will not just disappear through giving voice to women or simply including them in development activities. It is imperative to think in new ways about participation and empowerment, particularly for women. They must be able to define self-interest and choice, and consider themselves as not only able, but entitled to make choices (Mehra 1997; Kabeer 2001). This research intends to note the self-perceptions of the women, themselves, on their ability to exercise agency and choice in various significant aspects in their lives.

Description of Methodology

The Women's International Development Impact Survey (WEDIS) was developed and tested by Women's Global Connection (WGC) over the last three years. The instrument is a Likert scale survey of personal behaviors completed by women participants of WGC programs and captures the subjects' perceptions of change and empowerment after their participation in various capacity building activities. This research investigated the results of 173 surveys completed by rural women in Tanzania to ascertain if there is a correlation between selected survey results and various demographic factors.

Findings and Conclusions

The results are not yet finalized. Preliminary analysis indicates that the women perceive that their behavior has changed and the capacity building activities have been a source of greater empowerment and sense of personal agency in their lives. Further analysis will reveal whether there are any particular demographic factors correlated with specific behavioral changes in more family management and greater community participation.

SHOULD WEB-BASED TEXTBOOKS REPLACE TRADITIONAL HARDCOPY TEXTBOOKS?

Renea Fike, Ph.D., David S. Fike, Ph.D., and Norman S. St. Clair, Ph.D.

Purpose of Study

The purpose of this study was to characterize the association of student learning outcomes in an introductory statistics course with the use of a web-based e-textbook. The study reviews learning outcomes of students who used a web-based textbook as compared to those who used a hardcopy textbook. The research questions were:

1. What student characteristics are associated with the decision to use a web-based e-textbook?
2. Do students who use a web-based textbook achieve different learning outcomes than those who use a traditional hardcopy textbook?

Rationale and Significance

Findings from this study will help guide university faculty in their decisions regarding the use of e-textbooks within their courses. Given the trend towards increased use of digital media in higher education, this study provides evidence of the academic performance of students who choose to use e-textbooks.

Description of Methodology

Students were allowed to choose the type of book (hardcopy or e-textbook) that they wished to use in the course. The e-text was essentially a PDF-formatted copy of the text; it did not have a rich suite of features such as electronic bookmarking and highlighting. Since students self-selected their type of textbook, random assignment to book format was not possible. Learning in the course was measured by student performance on homework assignments, 3 exams and a major group project.

The sample was comprised of 56 students in an undergraduate, introductory Statistics course. Females comprised 61% of the sample and Hispanics comprised 73%. The students were generally traditional age with 71% classified as freshmen or sophomores. The mean number of prior college level math courses completed was 1.52.

Descriptive statistics including N's, percents, means and standard deviations were derived. Student's t test was used to evaluate differences for continuous variables, and Chi Square or Fisher's Exact tests were used to evaluate differences for categorical variables. Multiple regression models, controlling for covariates, were used to determine if learning outcomes (measured on a continuous scale) differed for students based upon the type of textbook used. For the multivariate models, covariates were included in the models to analytically control for group differences at baseline.

Findings and Conclusions

When considering student characteristics, there were almost no differences in measures of academic preparedness between students who selected e-textbooks rather than hardcopy books. Additionally, students who used e-textbooks earned significantly lower mean scores on Homework, Exam 1 and Exam 2 than students who used hardcopy books. Mean scores on Exam 3 did not differ based upon type of textbook. The Final Course Average was significantly lower (by about a letter grade) for students who used e-textbooks. Similarly, the percentage of students using e-textbooks who successfully completed the course was significantly lower than for those students who used hardcopy books.

FACTORS IMPACTING THE STUDENT LEARNING STYLES OF UNDERGRADUATE STUDENTS: A CASE STUDY OF A COMMUNITY COLLEGE AND A PRIVATE UNIVERSITY

Howard M. Marquise, M.Ed., Doctoral Student, Maria E. Marquise, MA, Doctoral Student, Solomon K. Nfor, MS, Doctoral Student, and Abisola A. Santos, MBA, Doctoral Student

Purpose of Study

The purpose of this study was to investigate learning styles of students in a community college and a private university in South Texas. The goals of this study were to determine: a) if there are differences in learning styles amongst ethnicities and b) if the students' gender affects their learning style.

Rationale and Significance

Due to the high number of ethnically diverse students in higher education today, there is a need for an understanding of the learning styles of this population. Many of these students tend to drop out of certain courses (*Morgan, Educ Horizons, 114-120*), (*Felder & Brent, J Engineering Ed, 94(1) 57-72*); not only because they do not understand the subject material, but also because they have a different learning style and become disconnected with instruction (*Charlesworth, Educ & Training, 50(2),115-127*), (*Kinshuk, Liu & Graf, Educ Tech Research Dev, 57, 739-752*). A student's ethnic background and preparation for the class greatly impacts the academic outcome (*Felder & Brent, et al*), (*Joy & Kolb, Intl J Intercultural Relations, 33, 69-85*). The challenge in today's global higher education classroom is recognizing that ethnically diverse students have different learning styles. There exists a need to educate these students on how they can choose a discipline that reflects their learning style (*Kinshuk, et al*) (*Felder & Spurlin, Intl J Engaging Ed, 21(1), 103-112*).

Description of Methodology

A survey design methodology was utilized using the Solomon and Felder Index of Learning Styles questionnaire (Joy, et al) (Kinshuk, et al) (Felder & Spurlin, et al). Convenience sampling was conducted using 915 freshman and sophomore students at both institutions. The study collected demographic data and the questionnaires were administered to undergraduate classes. The questionnaire was administered to the students confidentially during regularly scheduled class time and was completed voluntarily. The data was analyzed to study the students' learning style preferences using the Statistical Package for Social Sciences (v20) program.

Findings and Conclusions

Our study findings indicated that there is a significant difference in the learning styles between genders. The analysis also indicates that no significant relationship was determined between ethnicity and learning styles. Although learning styles are considered an important factor in education, students often do not know their learning style and as a consequence they find it difficult to adapt to an instructor's pedagogy. As stated in Felder & Spurlin (2005), data collected will offer direction to instructors on their pedagogical techniques, and to students wishing to modify their leaning styles to cope with all professors instructional designs.

INSIDE AND OUTSIDE STAKEHOLDERS' VIEWS OF THE STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS RELATED TO A RESIDENTIAL RE-ENTRY FACILITY

Margarita E. McAuliffe, Doctoral Student

Purpose of Study

With the arrival of a new CEO, a SWOT Analysis had been conducted six years prior to the current study. As a result of that analysis, 6 work groups were developed to address stakeholders' concerns at that time. The primary purpose of the current analysis was to determine if those concerns had been addressed and what, if any, new concerns had arisen. A secondary purpose of the study was to gain an understanding of the new CEO's leadership style.

Rationale and Significance

The study site is one of several federal offender re-entry facilities in the U.S. Stakeholders' current views of the organization's strengths, weaknesses, threats and opportunities, when compared with the views of six years ago, can indicate effective and/or ineffective approaches implemented by the new leadership. This information can be of use to other re-entry facilities throughout the country.

Description of Methodology

A SWOT Analysis was conducted. 30 internal and external stakeholders were interviewed. They all responded to the question: "What do you see as the organization's strengths, weaknesses, opportunities, and threats?" Internal stakeholders were also asked to describe the new CEO's leadership style. Responses were analyzed and grouped in categories determined by frequency of responses. Categories were ordered from the one with the most responses to the one with the fewest. Focus was on the top four responses in each category. Categories were compared across groups and years.

Findings and Conclusions

Findings indicate that 2012 external stakeholders' view of strengths differed in 2 of the 4 top areas from those of 2006. Internal stakeholders' views of strengths in 2006 and 2012 differ in 3 of 4 areas. Internal and external stakeholders retained just one area of weakness from 2006, and each group differed on what the remaining top 3 current areas of need are.

Only external stakeholders were asked about opportunities in 2006. In 2012 both internal and external stakeholders were asked their opinions on opportunities. Each group mentioned only three areas frequently and they agreed on the top two. Again, in 2006 only external stakeholders were asked about threats to the organization. In 2012 internal and external stakeholders agreed on the 3 top threats to the organization, though not in the same order of importance.

This presentation will make connections between the new CEO's leadership's style, behavior, and strategy and the changes (or lack thereof) in perception of the organization's strengths, weaknesses, opportunities, and threats. Furthermore, the roles the CEO took on while leading the organization through a period of tremendous organizational change will be examined.

RAINBOW OF FOLLOWERS' ATTRIBUTES IN A LEADERSHIP PROCESS

Evgenia Prilipko, Doctoral Student and Absael Antelo, Ph.D.

Purpose of Study

While the concept of leadership has been widely researched for decades, followership has been given scant attention until recently. One cannot become a successful leader without first being a successful follower. Although followers are critically important for organizational success and leadership development, the most effective follower attributes comprising the cornerstone of followership have not been clearly identified. The purpose of this study is to investigate the effectiveness of proposed follower attributes by examining their validity and establishing a platform for follower refinement. Current study attempts to comprehensively display the functionality and importance of proposed follower attributes and their application in the work place.

Rationale and Significance

This work provides a much needed understanding of the follower attributes. Identifying effective follower attributes is significant since it has a direct impact not only on followers and their accomplishments in the organizational settings, but also on leadership and organizational effectiveness, which inevitably leads to progress in customer relations, satisfaction and overall organizational success and growth. The audience likely to benefit from this study consists of academic circles and faculty responsible for educating leaders and followers, as well organizational consultants specializing in leadership and followership areas. Also, students, management, executives, administrators and organizations may perceive this study as an auxiliary opportunity to challenge their traditional views of leadership and followership to arrive at their own understanding of the importance of followership.

Description of Methodology

Statistical survey design and correlation procedures are applied to assess selected variables and their relationship when examining the results of a survey conducted among 106 participants - multicultural leaders and followers from Russia and Belarus. Descriptive and inferential statistics are used for data analysis.

Findings and Conclusions

Findings indicate that respondents tend to have an involuntary inclination towards group work and camaraderie, and are comfortable in the atmosphere of togetherness. Results also illustrate that respondents from Russia and Belarus have a different understanding of notion of tolerance than respondents in the United States. The study reveals no significant difference between female and male ratings of all attributes. Both females and males rated their "reliability as a group member" as the highest-rated attribute. "Learning and embracing change" turned out to be the lowest-rated attribute for both genders. In addition, "interpersonal relations" was another lowest-rated attribute for males.

The study discusses the need to understand how individual traits are assessed and developed, and how individuals can be formed, nurtured and prepared to become effective followers. The criticality of certain attributes characteristic to followers is examined along with practical suggestions of how some attributes can be brought to a more advanced level.

METAPHORS TEACHERS LIVE BY: SOCIETAL, ECONOMIC, AND VALUE CONTEXTS OF TEACHING IN LITHUANIA

Audra Skukauskaite, Ph.D.

Purpose of Study

The purpose of this presentation is to demonstrate how the language choices a participant makes in a conversational interview reveal multiple layers of meanings constituting the interviewee's social world. I use metaphor analysis to examine the intersections of social, political, economic and historic conditions that a teacher in Lithuania makes visible through her selection of particular images to talk about her work.

Rationale and Significance

People in rapidly changing societies experience a multitude of changes at societal, educational, political, economic, and personal levels. In the midst of this rapid change, they rarely have a moment to stop and examine how the reforms affect them and how the current situation and ways of experiencing the changes may be grounded in the past and reflected in their language. Teachers are often charged with implementing educational reforms and preparing new generations of students for changing societies.

However, teacher perspectives are rarely taken into account. Analyses of metaphors a teacher uses makes visible how teacher view of self and her role as a change agent is constrained by the sociohistorical, political, and economic conditions of society. This study provides insights for scholars who want to examine how discourse reveals people's meanings and experiences. The findings may also be beneficial to teacher educators and policy makers who want to understand factors that impact how teachers respond to the charge of becoming agents in implementing educational reforms.

Description of Methodology

This study was grounded in two sets of literature: educational change and metaphor analysis. The first was literature on educational change and policy implementation which emphasized the importance of teacher, student and other stakeholder perspectives in implementing educational policies (Anderson-Levitt, 2002; Stevick & Levinson, 2007). Metaphor analyses (Lakoff & Johnson, 1980) and theories of language-in-use provided the second set of perspectives through which teacher discourse was analyzed to uncover the sociohistorical influences shaping how a teacher saw her life and work.

One interview from a dataset of 18 ethnographic interviews with English-as-a-foreign-language teachers in Lithuania was re-analyzed for this study. The data included the audio record, transcript and documents and records of historical events referenced in the interview. Interactional Ethnographic perspective (Rex, 2006) guided the design and conduct of the study. Three metaphors representing maximum variation were identified and subjected to two layers of analysis: discursive and sociohistorical.

Findings and Conclusions

The first metaphor of teacher placement inscribed a societal history and identity for the teacher, demonstrating the way historical contexts influenced teacher identity development and pride in the profession. The second metaphor of a garden plot made visible how the poor socioeconomic conditions of the teacher contrasted with student affluence, affecting teacher relationships with students. The third metaphor of a lighthouse inscribed devaluing of teacher work and position in society. The teacher's view was in stark contrast to the reform documents giving teachers a crucial role in advancing democratic society. This study provides demonstrates the importance of understanding and changing the sociohistorical, political and economic conditions affecting teacher lives, work, and participation in preparing new generations.

WHAT DOES YOUR MASCULINE SCORE SAY ABOUT YOUR JOB?

Heather L. Staples, Doctoral Student and Tina M. Church-Hockett,

Purpose of Study

The purpose of this study is to examine the relationship between sex roles and position levels of employees at a mid-sized university. More specifically, is there a significant difference in masculine scores among employment types when controlling for feminine scores?

Rationale and Significance

Women's rights have changed significantly and females are becoming more acceptable in the workplace at various levels of employment. However, in today's society, gender has taken on many different meanings aside from male and female. This concept has influenced how individuals view themselves and are treated in society. Examination of the individual identity of the person rather than the biological sex and stereotypes associated with each gender provides a holistic view of one's sex role. The BEM Sex Roles Inventory (Bem, 1981) examines how society polarizes gender and sex as solely male or female. This inventory establishes a score for masculinity and femininity representing a spectrum rather than one or the other.

Furthermore, it is assumed that individuals who score higher in the masculine area would obtain more leadership roles; whereas, individuals who had higher feminine scores would have entry-level jobs. Leadership roles are defined by the researcher as someone who influences. This study aims to address whether specific employment types can be associated with scores on the BEM Inventory. This study will enhance the knowledge of job selection and placement. It will also contribute to literature on sex roles.

Description of Methodology

This descriptive quantitative study was conducted in a moderately sized Midwestern university. Employees of the University were invited to complete the 60-question BEM sex roles inventory along with a brief demographic questionnaire. Participation was available electronically through Survey Builder as well as by paper and pencil. 381 employees participated in the study consisting of 131 support staff, 132 professional staff, 121 faculty, and 15 bargaining staff. Of the participants, 151 were males and 229 were females, with the median age of 47, ranging from 19 to 79 years old. Once the surveys were received and recovered from Survey Builder, they were scored to generate a masculinity and femininity score. The masculine and feminine scores were calculated. The results of the BEM inventory and demographics were entered into the SPSS statistics program. An ANCOVA was used to analyze the results.

Findings and Conclusions

The covariate of feminine score explained 4.3% of the variation in the masculine score, $F(1, 360) = 16.15$, $p < .001$. After controlling for feminine score, employee type explained another 4.4% of the variance in masculine score, $F(2,360) = 8.26$, $p < .001$ with an effect size of .09. Both feminine score and employment type show significant influence on the masculinity score, $P < .001$ in both cases.

In conclusion, this study revealed there is a significant difference between employment types and masculine role. Furthermore, two of the employment types studied displayed leadership roles (to influence others) while the others were in a supporting capacity. Although this study suggests there is a connection between employment type and masculine score, further analysis is proposed to define the extent of the influence on leadership roles.

FEIK SCHOOL OF PHARMACY

OUTCOMES AND GUIDELINE-CONCORDANT THERAPY IN CRITICALLY-ILL HEALTHCARE-ASSOCIATED PNEUMONIA PATIENTS

Russell T. Attridge, Pharm.D., MS, Christopher R. Frei, Pharm.D., MS, Marcos I. Restrepo, MD, MS,
Mary J. Pugh, Ph.D., Antonio Anzueto, MD, and Eric M. Mortensen, MD, MS

Purpose of Study

The primary objective of this study was to compare the effect of guideline-concordant (GC) healthcare-associated pneumonia (HCAP) antibiotics vs. GC-community-acquired pneumonia (CAP) antibiotics on 30-day mortality in a critically-ill HCAP population.

Rationale and Significance

There is controversy regarding the effectiveness of GC antibiotics in HCAP.

Description of Methodology

We conducted a population-based cohort study of critically-ill pneumonia patients in >150 U.S. Veterans Health Administration hospitals from 2002-07. All patients had a principal discharge diagnosis of pneumonia, received antibiotics within 48 hours of admission, received care in an intensive care unit, and had at least one HCAP risk factor. Pneumonia, comorbidities, and bacterial pneumonia pathogens were determined using International Classification of Disease, 9th Edition, Clinical Modification (ICD-9-CM) codes. GC antibiotic therapy was defined using current international guidelines. Chi-square or Fisher's exact tests were used to compare dichotomous variables. All continuous variables were determined to have non-normal distributions and were compared using Wilcoxon rank-sum tests. A multivariable logistic regression model was used to determine independent risk factors for 30-day mortality.

Findings and Conclusions

A total of 3,593 HCAP patients were included in this study: 944 (26.3%) received GC-HCAP therapy, 808 (22.5%) received GC-CAP therapy, and 1,841 (51.2%) received non-GC therapy. Patients were predominantly male (98.4%) with a median age of 77.1 (interquartile range [IQR], 7.1-8-81.8). At baseline, GC-HCAP patients were more likely to have multiple HCAP risk factors than GC-CAP patients (30.7% vs. 21.6%, $p<0.0001$) and had increased rates of mechanical ventilation (53.7% vs. 28.5%, $p<0.0001$) and vasopressor use (39.5% vs. 14.9%, $p<0.0001$). Compared to GC-CAP patients, GC-HCAP patients had an increased risk of 30-day mortality (34.0% vs. 21.8%, $p<0.0001$) and a longer median length of stay (18 days, IQR 11-34 vs. 10 days, 6.25-17). Independent risk factors for 30-day mortality included hospitalization within 90 days (OR 1.65, 95% CI 1.23-2.22) and the receipt of GC-HCAP therapy (OR 1.35, 1.06-1.72). Other independent risk factors included neoplastic disease, vasopressor use, and multiple types of organ failure (respiratory, neurological, renal, hematologic).

In critically-ill HCAP patients, GC-HCAP therapy does not reduce 30-day mortality and may actually be harmful.

COMPARISON OF BACTERIAL PNEUMONIA ETIOLOGY IN DIALYSIS VERSUS NON-DIALYSIS PATIENTS

Nicole C. Farrell, Pharm.D., Jason M. Cota, Pharm.D., MS, Cheryl K. Horlen, Pharm.D., and Russell T. Attridge, Pharm.D., MS

Purpose of Study

There are limited data to characterize pneumonia pathogens among patients on chronic hemodialysis (HD). The primary objective of this study was to compare the incidence of selected pneumonia pathogens (methicillin-resistant *Staphylococcus aureus* [MRSA], *Pseudomonas*, and *Streptococcus pneumoniae*) between chronic HD patients and non-HD patients.

Rationale and Significance

Limited data describe the epidemiology of bacterial pneumonia in HD patients. HD patients are regularly exposed to the healthcare system and have been included in the healthcare-associated pneumonia (HCAP) classification due to the potential risk for drug-resistant pneumonia. The observational studies that exist, based on large national databases and single-center observations, report mixed results in regards to incidence of selected pneumonia pathogens (MRSA, *S. pneumoniae*, and *Pseudomonas*)

In order to gain greater insight into the incidence of pneumonia pathogens in community-dwelling HD and non-HD patients in the United States, we examined the microbial etiology of community-dwelling adults admitted to U.S. hospitals with a primary discharge diagnosis of pneumonia from 2009-2010.

Description of Methodology

Data from 2009-10 were collected from the U.S. CDC National Hospital Discharge Survey, an annual survey of short-stay, non-federal hospitals. Pneumonia, comorbidities, and pathogens were determined using ICD-9-CM codes. Data weights were used to provide population estimates. Pneumonia cases were required to have been admitted from a community setting and have a principal ICD-9-CM diagnosis of pneumonia or a secondary diagnosis of pneumonia if accompanied by a primary diagnosis of sepsis or respiratory failure. Cases were excluded if patient age was <18 or hospital length-of-stay (LOS) was <1 day. Statistical significance was defined as $p < 0.0001$. Dichotomous variables were compared using chi-square tests. LOS was compared using the Wilcoxon rank-sum test.

Findings and Conclusions

There were 2,217,040 community-dwelling pneumonia cases identified; 72,334 cases (3.3%) had end-stage renal disease requiring chronic HD. Median age was 71 (inter-quartile range 57-82). MRSA accounted for 64% of all *Staphylococcus aureus* cases. *Pseudomonas pneumoniae* was more common in HD vs. non-HD cases (33.6 *Pseudomonas pneumoniae* per 1,000 pneumonia cases vs. 16.8 per 1,000 cases; $p < 0.0001$), while MRSA pneumonia was increased in the non-HD cohort (32.2 per 1,000 cases vs. 15.5 per 1,000 cases, $p < 0.0001$). *S. pneumoniae* rates were lower in HD vs. non-HD cases (9.6 per 1,000 cases vs. 33.6 per 1,000 cases; $p < 0.0001$). Compared to non-HD patients, HD patients had increased in-hospital mortality (9.7 vs. 6.9%; $P < 0.0001$) and median LOS (6 vs. 5 days; $P < 0.0001$).

Chronic HD in community-dwelling pneumonia patients is associated with an increased incidence of *Pseudomonas pneumoniae* and significantly worse health outcomes vs. non-HD patients.

RENAL EFFECTS PRODUCED BY MICROINJECTION OF KAPPA OPIOID AGONIST INTO THE BED NUCLEI OF THE STRIA TERMINALIS (BST)

Cynthia Franklin, BS, Yolanda Rangel, Ph.D., Lourdes Fortepiani, Ph.D., MD, Glenn Toney, Ph.D., and Helmut Gottlieb, Ph.D.

Purpose of Study

The purpose of this study is to determine the effects in water and electrolyte excretion by the kidneys produced by microinjection of a selective kappa opioid agonist, U50-488H (U50), into the dorsomedial Bed Nuclei of the Stria Terminalis (BST).

Rationale and Significance

Brain, Intracerebroventricular (ICV), injection of U-50 produces a marked diuresis, antinatriuresis, and an increase in renal sympathetic nerve activity (RSNA) in rats. Because the dorsomedial BST have been shown to express kappa opioid receptors and this region projects to the hypothalamic areas involved in water homeostasis, we examined if BST injection of U50 would produce similar effects on renal function. This is significant since it shown a novel pathway via which kappa receptors can modulate water excretion.

Description of Methodology

Rats anesthetized with urethane-chloralose were instrumented to record arterial blood pressure (ABP), heart rate (HR) and RSNA. Catheters were placed in a femoral vein for drug delivery and infusion of isotonic saline (25 µl/min) and in the urinary bladder for urine collection. Urine was sampled during two 10 min control periods and during six 10 min period beginning 10 min after BST injection of U-50 (n=8) or vehicle control (n=8).

Findings and Conclusions

U-50 significantly increased urine excretion ($P<0.05$) without changing HR, mean ABP, urinary sodium excretion or RSNA. BST injections of saline were without affect in all parameters studied.

The ability of BST injection of U-50 to increase urine outflow without effecting sodium excretion and RSNA raises the possibility that BST neurons could be an important substrate through which drugs targeting Kappa opioid receptors could selectively facilitate water excretion in sodium retaining diseases such as salt-sensitive hypertension. This work was supported by SC2 HL104639.

PROBING THE CORRELATION BETWEEN PROTEIN CONFORMATION, STABILITY, AND BIOLOGICAL ACTIVITY USING MULTIVARIATE EXPERIMENTAL DESIGN

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Purpose of Study

To probe the correlation between protein conformation, stability, and biological activity as a function of excipient levels, using multivariate experimental design.

Rationale and Significance

Protein formulations are developed by determining effective levels of excipients that enhance stability. Traditionally, these studies are performed by varying the concentration of excipients one at a time and determining the effect on protein stability. However, such studies cannot adequately characterize the effect of excipient combinations on protein stability. By using multivariate experimental designs, whereby, concentrations of multiple excipients are varied simultaneously, the effect of excipient combinations on protein stability can be accurately determined. The effects of common excipients used in protein formulations on the conformation and stability of two model proteins were determined using multivariate experimental design.

Description of Methodology

Bovine serum albumin and lysozyme were used as model proteins for the study. The effect of pH and four excipients used in protein formulations; sucrose, methionine, polysorbate-80, and sodium chloride, were studied using a central composite multivariate experimental design. The effects of short-term temperature exposure on the conformations of both proteins, as a function of the excipients, were studied using bis-ANS, a dye that fluoresces upon binding to exposed hydrophobic surfaces in proteins. In addition, the effect of the excipients on the enzymatic activity of lysozyme and the stability of bovine serum albumin were also determined. Lysozyme enzymatic activity was determined via UV spectroscopy of *Micrococcus lysodeikticus* and stability of bovine serum activity was monitored using size-exclusion chromatography.

Findings and Conclusions

pH, sodium chloride, and sucrose consistently affected the stability of both proteins. In both proteins, the effect of pH on stability depended on sodium chloride concentration. Correlations were observed between the effects of the excipients on bovine serum albumin conformation and stability. Correlations were also observed between the effect of the excipients on lysozyme conformation and enzymatic activity. The results show that multivariate experimental designs are important in deciphering interactions between excipients used in protein formulations. Furthermore, multivariate experimental designs combined with conformational analysis of proteins are a great tool for screening the effect of excipient combinations on protein stability. This approach shows how interactions between excipients affect protein stability and provides optimized combinations of excipient levels that enhance protein stability.

NEUROTENSIN RECEPTOR AGONIST DECREASES INTRAVENOUS, OPERANT SELF-ADMINISTRATION OF METHAMPHETAMINE IN MICE

Amanda L. Sharpe, Ph.D. and Michael J. Beckstead, Ph.D.

Purpose of Study

These studies were conducted to test the hypothesis that injection of a neurotensin receptor agonist (PD149163) would increase self-administration of methamphetamine in mice.

Rationale and Significance

Methamphetamine is a psychostimulant that exhibits a significant abuse potential. Although addiction to methamphetamine is a major health and societal concern, at the present time no drug is approved for therapeutic management of methamphetamine addiction. Methamphetamine activates the central dopaminergic “reward” circuitry, and with repeated use increases levels of the neuromodulatory peptide neurotensin (NT) in the nucleus accumbens and ventral tegmental area (VTA). Additionally, neurotensin input into the VTA affects dopamine neuron excitability. Previous studies in rats reported that NT agonism decreases methamphetamine self-administration, but these studies did not examine the effect of NT agonism on the pattern of self-administration.

Description of Methodology

In our studies, we established intravenous methamphetamine self-administration in male, DBA2J mice (FR3, 2 hr daily sessions, n = 9) and examined the effect of pretreatment with the NT agonist PD149163 (0, 0.05, 0.1 mg/kg, subcutaneous, 30 min prior to session) on methamphetamine self-administration behavior. Behavioral measures analyzed included infusions of methamphetamine per session, latency to first infusion, and ratio of total infusions occurring in the 1st hour. Additionally, locomotor activity in an open field was measured to determine if PD149163 decreased locomotor activity. Naive DBA2J male mice (n=6) were injected with PD149163 (0, 0.05, 0.1 mg/kg) immediately or 90 minutes before a 30 minuted open field locomotor test.

Findings and Conclusions

At baseline, mice self-administered an average of approximately 16 infusions (0.8 mg/kg), with almost 90% of responses in the active nosepoke. Pretreatment with PD149163 (0.05 and 0.10 mg/kg, s.c.) significantly decreased methamphetamine self-administration and dose-dependently increased the latency to the first infusion of methamphetamine. No gross effect of PD149163 on locomotor activity was noted, suggesting that NT activity may decrease methamphetamine seeking independent of locomotor effects. Future studies will investigate the mechanisms responsible for the interactions between neurotensin, dopamine and methamphetamine use.

NURSING HOME ADMINISTRATORS' PERSPECTIVES ON THE GRACE PROGRAM: AN INTRODUCTORY PHARMACY PRACTICE EXPERIENCE

Cynthia Stanley-Villarreal, Pharm.D., Jeffrey T. Copeland, Pharm.D., and David F. Maize, Ph.D.

Purpose of Study

The GRACE (Growing Respect and Care for the Elderly) Program was designed for pairs of third year pharmacy students to visit nursing home residents once a week for six weeks to interact with the residents, discuss medication concerns, review residents' charts, evaluate and identify drug therapy issues, and interact with the consultant pharmacists and staff at two nursing homes. The students then prepared a SOAP (Subjective, Objective, Assessment and Plan) note to present to the Feik School of Pharmacy (FSOP) faculty as they would on a clinical rotation. The first objective of this study was to evaluate the residents' drug therapies. Given that this was the first implementation of the program, the second objective was to evaluate nursing home administrators' perspective and perceived value of the GRACE program.

Rationale and Significance

The GRACE Program (Growing Respect and Care for the Elderly) is an introductory pharmacy practice experience program that has been incorporated into the pharmacy curriculum. Experiential education may be defined as the "philosophy and methodology in which educators purposefully engage learners in direct patient experience and focused reflection in order to increase knowledge, develop skills, and clarify values" (Association for Experiential Education). Participation in GRACE Program allows the students to apply classroom and laboratory knowledge in a real practice setting. This application of knowledge, skills, attitudes and values should strengthen previous learning and facilitate future learning. This program provides an opportunity for the residents of the nursing homes and the pharmacy students to interact, allowing the students to enhance their communication skills. The program would not be possible without the permission of the administrators and staff of the nursing homes. It is important that the FSOP provides a valued service to the nursing homes along with an educational experience for the students.

Description of Methodology

The data was collected and analyzed from anonymous, paper questionnaires distributed to the administrators and staff of two nursing homes that participate in the GRACE Program. A 14-question survey was completed by 10 administrators for a response rate of 80%. The questions on the survey asked for the perceptions of the administrators and staff on the abilities, interactions and benefits of the FSOP pharmacy students at their nursing homes. The statistics of the data were calculated using the software program SPSS.

Findings and Conclusions

The administrators reported that both their facilities and residents received a great benefit from the students' involvement (4.38 and 4.62 out of 5, respectively). Importantly, the facilities' interest to work with pharmacy students significantly increased ($p < 0.03$) over the six-week period. Further, administrators indicated that the GRACE program was an excellent experience for pharmacy students (4.62 out of 5), noting a significant increase in their ability to review charts, make recommendations to a physician with the help of a consultant pharmacist, and interact with residents ($p < 0.007$, $p < 0.021$ and $p < 0.048$, respectively). Administrators of the nursing homes involved in the GRACE program overwhelmingly indicated that pharmacy students provided valued services by assisting the facility in identifying and addressing drug therapy concerns, thereby improving their residents' drug therapy management. An additional benefit of this program was the opportunity for students to experience both field and clinical practice with a geriatric population.

EVALUATION OF CLINICAL SKILLS WITH AN OBJECTIVE STRUCTURED CLINICAL EXAMINATION

Elizabeth M. Urteaga, Pharm.D., Rebecca L. Attridge, Pharm.D., John M. Tovar, Pharm.D., and
Amy P. Witte, Pharm.D.

Purpose of Study

Health professionals are expected to exhibit strong communication and clinical skills. The curriculum at pharmacy schools should prepare students not only to successfully pass licensure examinations, but also to provide excellent clinical services to patients. Unfortunately, standardized testing is a mediocre way to evaluate clinical and communication skills. Current literature supports the use of objective structured clinical examinations (OSCEs) as an effective tool to evaluate these skills. We used an OSCE to evaluate how effectively second-, third-, and fourth-year pharmacy students' and practicing pharmacists' communicate and apply knowledge to simulations of commonly encountered patient scenarios.

Rationale and Significance

The Feik School of Pharmacy envisions itself as a partner in the community of health care educators and practitioners who are patient advocates, dedicated to the delivery of superior care and enhancement of the quality of life for all citizens through the development of highly trained, culturally-competent, caring pharmacists. Medical schools routinely use OSCEs to develop their students into highly trained, culturally-competent, and caring professionals. Given the more recent use of OSCEs in pharmacy, data are not as robust. Our study adds to the literature available and allows the Feik School of Pharmacy to use OSCEs as a tool to train students to become highly trained, culturally-competent, caring pharmacists in our community and beyond.

Description of Methodology

Second-, third-, and fourth- year pharmacy students enrolled at the University of the Incarnate Word, Feik School of Pharmacy completed an OSCE as part of their required courses. Licensed pharmacists were recruited to complete the OSCE and serve as controls. The OSCE was comprised of 4 stations that consisted of a simulated task or problem. Trained standardized patients graded the interaction based on a rubric that consisted of clinical skill and communication checklists. Data were analyzed using JMP 10.0® (SAS Corporation) and comparisons were considered statistically significant if the p-value was less than an a priori alpha level of 0.05.

Findings and Conclusions

A total of 275 pharmacy students and 6 licensed pharmacists completed the OSCE and consented to participate in the study. Overall, the licensed pharmacists performed better than the pharmacy students. The fourth-year students performed better than the second-year ($p=0.01$) and third-year pharmacy students ($p<0.0001$). The pharmacists performed better than the second-year ($p=0.02$) and third-year ($p=0.002$) pharmacy students; however, there was not a statistically significant difference in performance between the fourth-year pharmacy students and pharmacists ($p=0.07$). The results of this study provide a better understanding of the clinical and communication skills of practicing pharmacists and pharmacy students at different stages of the curriculum.

H-E-B SCHOOL OF BUSINESS AND ADMINISTRATION

MEDICAL TOURISM RISK PERCEPTIONS

Michael Guiry, Ph.D. and Petra Kulasova, MBA student

Purpose of Study

The purpose of this in progress study is to investigate consumers' perceptions of the risks of being a medical tourist.

Rationale and Significance

Despite the increasing number of U.S. consumers traveling abroad for medical care, receiving safe and quality care remains the primary concern for consumers considering outbound medical tourism (MT) as a treatment option (Timmons, 2009). The biggest problem non-U.S. MT providers face is U.S. patients' discomfort with the idea of traveling overseas for care that they are not sure will meet U.S. standards (Lewis Dolan, 2009). In a recent study, Crooks, Kingsbury, Snyder, and Johnston (2010) noted that most of what is known about the patient's MT experience, including the risks associated with being a medical tourist, "is, in fact, speculative, idea-based, or anecdotal in nature" (p. 9). Hence, their research demonstrates the need for additional research on numerous MT issues, including examining the risk perceptions (RP) of receiving medical care abroad. Given the importance of perceived risk in the consumer purchase decision process (Laroche, McDougall, Bergeron, & Yang, 2004) and the lack of empirical research on MT RP (Crooks et al., 2010), the present study examines consumers' perceptions of the risks of being a medical tourist.

Description of Methodology

Data are being collected via an online survey using SurveyMonkey's Audience feature (SurveyMonkey, 2011). Based on available funding for this research, the target sample size is 400 U.S. adults, 18 years of age and older. Thus far, 97 surveys have been completed. Thirteen of the respondents (13.4%) are experienced medical tourists (EMT).

A seven-dimensional perceived risk five-point Likert scale, based on previous research (e.g., Dholakia, 2001; Keh & Sun, 2008; Stone & Gronhaug, 1993), and modified for a MT context, is being used to measure MT RP. The survey also includes questions measuring respondents' MT attitudes and behaviors, and their demographic characteristics. Since data collection has not been finished, for the purpose of this abstract, descriptive statistics are reported. Once data collection is completed, the data will be analyzed using factor analysis, reliability analysis, independent samples t-tests, paired samples t-tests, ANOVA, Chi-square tests, and correlation analysis.

Findings and Conclusions

Preliminary results show that EMT view traveling to another country for medical care as less risky (mean=2.77) than non-medical tourists (NMT) (mean=3.77) do. The primary risk concerns of EMT and NMT vary. The top five risk concerns for EMT are: 1) inadequate blood supply available on-site at MT hospital (3.85); 2) personal harm (3.62); 3) causing new problems (3.62); 4) feeling uncomfortable (3.62); and 5) traveling while recuperating (3.54). While, the top five risk concerns for NMT are: 1) lack of legal recourse if complications arise after returning home (3.81); 2) reliability of medical care (3.80); 3) feeling anxious (3.79); 4) quality of medical care (3.77); and 5) traveling for experimental medical care not available in the U.S. (3.76). Further analysis will identify salient dimensions of MT risk, compare RP of experienced, prospective, and unlikely medical tourists, and determine the relationship between RP and interest in engaging in MT, likelihood of taking part in MT, and MT satisfaction.

SOUTH KOREA'S MEDICAL TOURISM DESTINATION PERSONALITY: THE INFLUENCE OF PERSONAL VALUES

Michael Guiry, Ph.D., Petra Kulasova, MBA student, and David G. Vequist, Ph.D.

Purpose of Study

The purpose of this study was to investigate the perceived medical tourism destination personality (MTDP) of South Korea (Korea) and to examine the relationship between personal values (PV) and Korea's MTDP.

Rationale and Significance

The medical tourism (MT) industry is growing, diversifying and becoming more competitive (KPMG International, 2011) with over 50 countries having identified MT as a national industry (Rad, Mat Som & Zainuddin, 2010). One of the up and coming countries, providing healthcare options to the world, is Korea. Well known as a destination for cosmetic surgery, Korea has been actively promoting its MT industry to attract foreign patients, for a wider range of medical services (Connell, 2011). Given the competitive nature of the MT industry, the challenge for Korea is to establish a strong, defensible market position by clearly differentiating its MT services from those of the competition through an effective positioning strategy. A key component of this positioning process is the creation and management of a distinctive and appealing destination personality (Ekinci, 2003). Hence, it is prudent to study consumers' perceptions of Korea's MTDP and factors that may influence their perceptions. In this research, the relationship between consumers' PV and Korea's MTDP is investigated since PV are important determinants of consumer behavior (Homer & Kahle, 1988) and influence brand personality perceptions (Dantas, Capelli, Nique, & Fornerino, 2007).

Description of Methodology

Data were collected via an online survey with a convenience sample of U.S. consumers (n = 1588; response rate = 52.9%) who had engaged in MT or expressed an interest in doing so.

Korea's MTDP was measured using the 27 destination personality items from Ekinci and Hosany's (2006) stream of research. PV were measured via Kahle's (1983) List of Values scale (Cronbach's $\alpha = .95$). Exploratory factor analysis (principal components extraction with varimax rotation) was employed to uncover the underlying dimensions of Korea's MTDP. Stepwise regression analysis was used to determine the relationship between consumers' PV and their perceptions of Korea's MTDP.

Findings and Conclusions

Factor analysis indicated that consumers' perceptions of Korea's MTDP are comprised of three dimensions: sincerity (five items; $\alpha = .89$), competence (three items; $\alpha = .90$), and ruggedness (three items; $\alpha = .87$). Stepwise regression results revealed that three of the nine PV, i.e., excitement ($\beta = .25$), sense of belonging ($\beta = .11$), and self-fulfillment ($\beta = -.09$), were significantly related (all at $p < .05$) to the sincerity dimension of Korea's MTDP ($F = 28.27$, $p < .001$). In the second model, self-respect ($\beta = .17$) and excitement ($\beta = .12$) had a significant positive effect (both at $p < .001$) on consumers' perceptions of the competence dimension ($F = 33.03$, $p < .001$). While in the third model, excitement ($\beta = .20$), fun and enjoyment of life ($\beta = .16$), and being well respected ($\beta = .10$) were significant predictors (all at $p < .05$) of the ruggedness dimension ($F = 14.24$, $p < .001$). Given the increasing number of MT consumers and growing MT industry competition, creating and managing an appropriate MTDP is vital for effective positioning and differentiation. The research results indicate that consumers ascribe personality characteristics to MT destinations, and Korea's MTDP can be described in three dimensions: sincerity, competence, and ruggedness. Furthermore, our results suggest that managing Korea's MTDP requires understanding consumers' PV, in particular excitement.

“IGUESS” TO “IGET”: AN EFFECTIVE USE OF SMART MOBILE TECHNOLOGY TO TRANSFORM UNDERGRADUATE STATISTICS EDUCATION

Bo Han, Ph.D. and Victor R. Prybutok, Ph.D.

Purpose of Study

Smart technology such as mobile phones, tablet computers, and learning apps are broadly used in statistics education. However, it is still unknown what factors can improve the student's learning performance. To address this research question, we designed (1) a new template for statistics homework assignment, and (2) a learning app that implements the template to investigate the influential factors of the student's performance.

Rationale and Significance

Facing an enthusiastic call for 'smart education' from society, there has not been a research to show whether the emerging mobile technology could improve the student's academic performance. Thus, a study in smart learning is highly needed to show the effectiveness of mobile technology in higher education such as statistics classes. Also, the findings could be adopted by higher education administration to support their decision whether to bring mobile technology into the learning process.

Description of Methodology

We collect the student's reaction toward the new learning template and learning apps by using an experiment strategy. We introduced our learning app to a total of 1500 students in statistics classes at the University of North Texas. 165 students downloaded the app, and 19 students gave us their feedback regarding the new app and learning template.

Findings and Conclusions

Although smart mobile technology has received a great deal attention from students, our research indicates that the students still focus on whether they are able to obtain problem solving ability rather than how fancy the technology is when they adopt smart mobile learning system. We also find that the newly proposed “iGet” homework assignment template for statistics classes could improve the student's understanding of the advanced level knowledge such as probability, binomial distributions, etc. For the higher education administration, we suggest they don't need to rush with the smart technology fashion when they attempt to improve the student's academic performance. The right decisions could save a large amount of unnecessary investments for both schools and students.

ARE GROCERY STORE APPLICATIONS THE NEXT BIG THING?

Celia L. Martinez, McNair Scholar and Timothy Porter, MBA

Purpose of Study

The intent of this study is to explore the potential market for grocery store applications. Using customer response towards online grocery shopping studies and the search for empirical data through a survey about grocery store applications, we can identify if there is a demand for these applications. In addition, the insights that are gained from this study may stimulate companies to begin implementing a business model for these applications.

Rationale and Significance

While there are many studies that have already explored the online grocery shopping market, none have specifically explored the future of applications for grocery shopping. While there are grocery store applications that help you manage lists and coupons, only one application is currently available for grocery store purchases. There is clearly a need for more research on grocery store applications and how consumers will embrace it. The absence of information is unfortunate due to the rapidly growing popularity of mobile applications. Consumers are unpredictable in their needs and wants. Information on consumers' opinions will enable us to evaluate if there is indeed a market for this type of application. Constituents such as grocery companies, application developers, and marketers may gain from the potential market that grocery store applications may provide.

Description of Methodology

This was a quantitative study utilizing a sample of the Bexar Country population of Texas. The researcher administered a survey through surveymonkey.com, social media, and e-mail. There were a total of 154 respondents to the 21 question survey. Dependent and independent variables were established. The dependent variable was defined based on whether respondents would consider using a grocery store application to shop for groceries. The independent variables used basic demographic data and questions about the respondents, such as age, sex, income, and if they owned a smartphone.

Data analysis consisted of a univariate and bivariate analysis of each of the questions. A crosstab was implemented in the bivariate analysis to determine if one of the independent variables had an effect on the decision to use this application.

Findings and Conclusions

We can conclude based on my survey that these participants would most likely purchase a wide range of groceries through this application. We can infer that participants value this application enough, and would be willing pay a nominal fee for the use of this application. The variables that affected the decision to use the application to purchase groceries were price, convenience, amount spent on groceries per week, gender, and income. Based on the data collected, females are the predominant grocery shoppers. Out of the respondents who said they would use the applications, 64% were females. The income bracket \$25,000-\$74,999 made up 50.9% of total respondent's income. The income group of \$25,000-\$74,999 makes up 53.6% of total "yes" responses in favor of the applications. Of the respondents who responded in favor of the application, 50.5% were in the \$100-\$199 spending bracket. The maximum price point participants would be willing to pay for delivery fees was \$1-\$5 and was chosen 38% of the time. Respondents were asked to rank three factors that will influence a customer to use a grocery store application to shop for groceries from most important to least important. The three were ranked in the following order from most important to least important: cost, convenience, and product variety. Cost was ranked most important 55.4% of the time, convenience 30.4% of the time, and product variety 14.2% of the time. Due to the limitations of the research, this study is not significant enough to make inferences on whether or not grocery applications are feasible. More extensive research is needed to better discern the need for such applications.

THE IMPACT OF INFLATION ON EXPENDITURE AND HAPPINESS IN CHINA

Shishu Zhang, Ph.D. and Shuenn-Hae Ou, Doctoral Student

Purpose of Study

The proposed research contributes to the existing literature by studying the effect of inflation on people's consumption and investment behavior using combined macro and micro level data. The paper builds up an economics model and studies the different effects of inflation on the rich and the poor. The proposed project also studies people's perception of the effects of inflation on their lives in the urban and rural areas of China.

Rationale and Significance

Inflation in China is of great concern because it significantly affects people's living standards and their feelings of happiness. We divided the sample into subgroups according to their income level, education background, gender, and age. The researchers endeavor to understand whether the effects of inflation on expenditure and happiness are different among those subgroups. The research will contribute to the understanding of the effects of inflation and provide incentives to curb inflation in developing countries.

Description of Methodology

The data set is taken from "2002- Chinese Householder Income Project (CHIP)" and is publicly available. There are 60862 participants who replied to the questionnaire. The researchers have narrowed down the sample size to 26912 participants to eliminate the influence of outliers and missing data. The researchers applied various econometric methods including t-test, multiple regressions, chi-square test, etc. to perform the data analysis.

Findings and Conclusions

The descriptive statistics shows that the sample is divided equally between male and female: 52 % of sample is male and 48% of the sample is female. For the educational level, the result indicates that 22.2% of the sample finished high school, 22.9% of individuals completed middle school and 24.1% of people have Junior college education. As for the age group, most people are between ages of 35 to 58 years old. The researchers used the independent t-test to test whether the expenditure and people's feeling of happiness are different for genders. The results show that total income and total expenditure are significantly different between male and female ($p < .05$). However, there is no significant difference concerning the feeling of happiness between male and female ($p > .05$). The researchers also applied multiple linear regressions to analyze whether the expenditure and the perception of happiness are significantly different among people of different age groups. The preliminary result shows that there is no significant difference perception of happiness among different age and income groups. However, the regression coefficients indicate that total income and total expenditure varies significantly among different age and income groups.

**ILA FAYE MILLER SCHOOL OF NURSING AND
HEALTH PROFESSIONS**

IDENTIFYING THE RELATIONSHIP BETWEEN BMI AND DAILY EXERCISE: A PILOT STUDY

Penny Boman, RN, BSN, CNS Student, Nadia Kurji, RN, BSN, CNS Student, and
Irene Gilliland, Ph.D., RN, CNS, ACHPN

Purpose of Study

To determine the correlation between the number of days that an individual exercises and the Body Mass Index (BMI) in a selected group of individuals who belong to a wellness center.

Rationale and Significance

Recent obesity research points to a growing obesity rate in the United States. Obesity contributes to the development of heart disease and diabetes, the first and sixth leading causes of death respectively. Many studies have found correlations between a sedentary life style, unhealthy eating habits and increased in BMI. A number of strategies appear to reduce the prevalence of overweight and obesity, such as encouraging gyms and grocery stores to open in a community, improving community safety and exercise infrastructure, and zoning residential and business buildings within walking distance. Many believe that they merely need to choose the right diet (Atkins, Celebrity, etc.) to lose weight, but the studies are showing that while having some form of weight control program is important, the type of diet chosen makes very little difference compared to the impact of regular exercise. With no signs of a reversal in the growth rate of obesity, rates seem poised to continue growing well into the future.

Description of Methodology

A retrospective descriptive correlational design was used to correlate the number of days individuals spent exercising and their BMI. A random sample of 50 adults that attended a wellness center was drawn from a computerized list of all those who attended for the last 60 days. The majority of the sample was male (31, 62%) with a mean age of 44. Most of the sample were married (29, 58%), Hispanic (19, 38%) or Caucasian (21, 42%) and 74% had a BMI in the overweight to obese range (25-39.6). A retrospective review of the electronic records was used to collect data. The data included demographic variables such as; gender, age, marital status, religion, BMI, ethnicity, and number of days spent excising, height, and weight. Descriptive statistics were used to describe the sample and Pearson's coefficient was used to determine the relationship between number of days of exercise and BMI.

Findings and Conclusions

The relationship between number of days of exercise and BMI was investigated using the Pearson Product-moment correlation coefficient. There was a medium negative correlation between the two variables, $r = -.337$, $p < .05$ with more days of exercise associated with lower BMI. Increased exercise as measured by days attending a wellness center is correlated to a decrease in BMI. This difference is statistically significant ($p = .017$).

PREDICTORS OF SUCCESS ON PROFESSIONAL CREDENTIALING EXAMINATIONS OF ATHLETIC TRAINING UNDERGRADUATES

Shandra D. Esparza, Ed.D., ATC, LAT

Purpose of Study

The purpose of this five year retrospective, non-experimental study of 61 archival AT student records was to investigate the relationship between preadmission factors and success on the BOC (Board of Certification) and state athletic training licensure examinations. The research questions examined the relationship between grade point average (GPA), race, gender, college readiness, course grades in anatomy and physiology I and II, and exam success. Data from three Commission on Accreditation of Athletic Training Education (CAATE) accredited programs were used in the study.

Rationale and Significance

Compared to other allied health programs, graduates of athletic training (AT) programs have lower pass rates on their national credentialing examination (48%). In 2013, the new Standards for Entry Level AT Programs from the Commission on Accreditation of Athletic Training Education (CAATE) will require AT education programs to be accountable for each students' pass rate on the Board of Certification Examination (BOC).

Description of Methodology

This study was designed to explore the best predictors of outcomes concerning the success on the professional credentialing athletic training examinations; therefore, the sample was 61 athletic training undergraduate records from three universities in south central Texas. Retrospective, nonexperimental data collection was the methodological approach with a linear regression correlation research design. Due to the nature of this study, there was not a specific instrument that was used or created other than a data spreadsheet in Microsoft Excel that was completed by each Athletic Training Program Director at the participating institutions and returned with coded identifiers known only to the individual Program Directors. This study used descriptive and inferential statistics.

Findings and Conclusions

In this retrospective study of 61 graduates from universities in south central Texas, the participants were predominantly female (64%; N=39), non-Hispanic (54%; N=33), and 89% (N=54) had not taken a remedial course; were considered college ready at admission into the ATEP. The majority of the sample (63%; N=37) scored either an "A" or "B" as their final course average in Anatomy and Physiology I and in Anatomy and Physiology II (63%; N=37). The average GPA for the 67 students was 3.18. The majority of the sample passed the examination on the first attempt (70%; N=38). The majority also passed the Board of Certification examination on the first attempt (63%; N=24). The results of the Pearson correlation indicated a strong relationship between admission GPA (grade point average) and success on both examinations. A linear regression of all significant variables in each exam category revealed GPA as the only significant predictor when combined with the other significant variables identified in the Pearson. The results of the Pearson correlation for GPA, $r(53)=.70$; $p<.001$, showed grade point average had a significant relationship to the success on the state licensure examination on the first attempt. The results of the Pearson correlation for GPA, $r(36)=.41$; $p<.005$, showed grade point average had a statistical relationship to the success on BOC examination on any attempt. A strong prediction model should be developed for one or both examinations to help identify potentially successful students to assist athletic training educators in identifying students best suited to the athletic training major. Students who have the potential to be successful but are in a high-risk category can also be identified so a success strategy program can be instituted. Study results help establish which students are at risk and who may need to be remediated to increase success. Implications for positive social change include reducing time to graduation, resulting in saving time and money for students.

BUILDING CULTURAL SENSITIVITY THROUGH A STUDY ABROAD EXPERIENCE

Irene Gilliland, Ph.D., RN, CNS, ACHPN, Russell T. Attridge, Pharm.D., Rebecca Attridge, Pharm.D.,
David R. Maize, Ph.D., and Jeanette McNeill, DPH, RN

Purpose of Study

The purpose of this study was to examine cultural knowledge, awareness and skills among nursing and pharmacy students enrolled in a didactic elective course culminating in a two week trip to China.

Rationale and Significance

Health care professionals can enhance quality of care and patient satisfaction by being conscious of patients' diverse cultural backgrounds. Although there is a widespread agreement that health care professionals need to be culturally competent, how to teach and then measure this competence is an evolving process.

Description of Methodology

This study is a mixed methods design using a quasi-experimental approach with pre and post testing. Thirty students (11 nursing and 19 pharmacy) were enrolled in the class and 29 participated. The group was predominately female with a mean age of 26.5 (range 20-51) and with diverse ethnicities (40% Hispanic, 37% Caucasian, 20% Asian). Seventy-three percent (22) reported previous international travel and 40% (26) reported fluency in a second language.

Two quantitative instruments were used to collect data on the first day of class and on departure from China. The first was a measure of cultural competence which was adapted with permission from the Clinical Cultural Competency Questionnaire (CCCQ) which measure knowledge, awareness and skills. The second instrument was a researcher designed demographic questionnaire which included questions related to age, ethnicity, marital status, health professions major, previous travel experience and previous experience with health care professional roles.

Findings and Conclusions

Paired t-test was used to evaluate the impact of the course and the trip on students' knowledge, skills and awareness of Chinese culture. There was a statistically significant increase in knowledge from pre-class ($M=17.72$, $SD=4.52$) to post trip ($M=33.41$, $SD=6.7$), $t(28)$, $p<.0005$ (two-tailed); an increase in skill from pre-class ($M=10.62$, $SD=3.1$) to post-trip ($M=19.41$, $SD=4.8$), $t(28)$, $p<.0005$; and, an increase in cultural awareness from pre-class ($M=21.57$, $SD=2.8$) to post trip ($M=22.89$, $SD=1.75$), $t(27)$, $p<.014$. Reliability ranged from .88 to .92 for each of the subscales used.

Students' increased cultural knowledge, skills and awareness indicates the value of this type of learning activity. More research is needed to determine the best way to teach cultural competency and whether these results can be sustained over time.

A QUALITY IMPROVEMENT PROJECT TO IMPROVE THE SCREENING, IDENTIFICATION, AND MANAGEMENT OF OVERWEIGHT/OBESE CHILDREN AND ADOLESCENTS IN A PEDIATRIC RURAL HEALTH CLINIC

Elizabeth M. Leal, RN, MSN, FNP-C

Purpose of Study

The purpose of this Quality Improvement project was to assist pediatric primary care health professionals at a federally designated Rural Health Clinic (RHC) identify effective clinical process methods aimed at improving the screening, identification and prevention/management of overweight (OW) and obese (OB) pediatric patients.

Aim - To improve the screening, identification and management of OW/OB patients (ages 2-18 years) at a Rural Health Clinic (RHC) during the well child visit.

Study/Project Question - Will the implementation of a pediatric OW/OB prevention and management protocol, provider education and Electronic Medical Record modification based on CDC BMI-for-age percentiles and expert committee recommendations, improve the screening, identification and treatment/management of OW/OB patients (ages 2-18) seen at a RHC during the well child visit?

Rationale and Significance

Obesity among children and adolescents has nearly tripled in the past thirty years, disproportionately affecting certain populations. Today, 1 in 3 or (12.5 million) children and adolescents (2-19 years old) are OW or OB. Pediatric obesity is associated with numerous detrimental co-morbidities that often continue into adulthood if not addressed early, yet current evidence shows that OW/OB is often not addressed, diagnosed or managed properly. Presently, expert committee recommendations suggest the optimal treatment for pediatric OW/OB is prevention by yearly assessment based on CDC BMI (Body Mass Index) -for-age percentile classification in children 2 years or older. For patients classified as OW/OB, the expert committee advises using a stepwise approach dividing treatment into several stages including behavioral counseling, a structured weight-management plan, and using a comprehensive multidisciplinary team approach. Experts recommend patient/family tailored behavioral counseling as the first step in OW/OB treatment.

Description of Methodology

Descriptive statistical analysis, including measures of central tendency as well as comparisons of pre and post frequencies, was utilized to evaluate the rate of provider/staff adherence to expert committee recommendations as evidenced by documentation in the patients' EMR. Quantitative data was collected from a convenience sample of 193 selected patient (ages 2-18 years) EMRs from recent well-child visits. A checklist was utilized as a data collection tool and summative evaluation was conducted at 15, 30, 60, and 90 days post QI project implementation.

Findings and Conclusions

The screening, identification and management of pediatric patients identified as OW/OB during well-child visits significantly improved at the RHC, from 3% to 96%. In addition, data analysis revealed that the providers documented conducting behavioral assessment and counseling in 94.4% of all well-child visits, regardless of the patient's weight classification. This QI initiative demonstrates that provider and staff education, combined with electronic medical record (EMR) clinical decision support modification can result in significant clinical process improvements in the identification and treatment of OW/OB pediatric patients.

AN EVALUATION OF EVIDENCE BASED CARDIOVASCULAR RISK ASSESSMENT OF UNDERSERVED, ETHNICALLY DIVERSE HEART HEALTHY WOMEN AGES 18-45

Cindy A. McCullough, BSN, CMSRN, CNS Student, Shanna Fraser, BSN, CWOCN, CNS Student, and Irene Gilliland, Ph.D., RN, CNS, ACHPN

Purpose of Study

The purpose of this study is to ascertain if evidence based cardiovascular disease (CVD) risk assessment models are being used in family practice clinics on ethnically diverse heart healthy women ages 18 through 45 years. Research questions: Are heart healthy women between 18 and 45 years of age being screened in primary care clinics for cardiovascular disease risk using an evidence-based model? If they are, which one is being used? Are women in the high risk category offered any education and/or referrals?

Rationale and Significance

The number one killer of women is heart disease. In the United States, nearly half a million women will die of cardiovascular disease (CVD) at a cost of 444.2 billion a year. More women below the age of 45 years are developing CVD and 9000 will have an MI within a year. Evidence based cardiovascular risk classification remains the cornerstone of prevention and can improve the prediction of risk and guide intervention. However it is not well known and embraced in clinical practice. As patient advocates, educators, counselors, providers and caregivers, nurses are central to identifying each patient's various disease processes, risk factors, and barriers to care to attune prevention and care for each woman. Part of Healthy People 2020 Objectives and goals are designed to improve cardiovascular health and quality of life through prevention, detection, and treatment.

Description of Methodology

This descriptive study design used purposive retrospective electronic chart reviews of 90 women who seek medical care in a medically underserved primary health care clinic. Women ranged in age from 18 to 45 with a mean age of 32. Thirty-two percent were Hispanic, 21% were African American, 26% were Caucasian, and 21% were Asian. Lab tests and anthropometric measures were gathered using a data collection sheet designed by the researchers. Descriptive statistics were used for data analysis.

Findings and Conclusions

Data collected indicate that many of these young women had multiple risk factors for cardiac disease. Sixty-five percent had a BMI over 25 indicating overweight and/or obesity. High systolic blood pressure was found in 51%. No lipid panels were drawn on 58% of the subjects and 12% of those who had them drawn were abnormal. Assessment of lab tests and anthropometric measures indicated that 61% of these subjects are at risk for CVD. Record review showed no evidence of cardiac risk assessment, education, referrals or treatment for these risk factors. According to the American Heart Association, long-term risk for CVD can be reduced by performing evidence based CVD risk assessment and appropriate interventions periodically in early and mid-adulthood. Therefore, it is important to implement early adulthood evidence based CVD risk models.

AN EXAMINATION OF INTERACTION IN ONLINE GRADUATE NURSING EDUCATION

Jeanette McNeill, DrPH, RN, Sarah J. Williams, Ph.D., RN, and Irene Gilliland, Ph.D., RN, CNS, ACHPN

Purpose of Study

The purpose of this study is to examine quantity and quality of teacher-student and student-student interaction in online graduate courses and student satisfaction with online programs.

Research questions:

1. What are characteristics of interactions (teacher/student, and student/student) in online graduate nursing courses?
2. What is the level of student satisfaction with online educational programming?

Rationale and Significance

Online course delivery in graduate nursing education provides a strategy for increasing the number of prepared practitioners. Nkonge and Gueldenzoph (2006) proposed that the quality and timeliness of instructor comments made a difference in how students interacted with each other and the instructor in online classrooms. Santilli and Beck (2005) found that most online faculty time is spent communicating with students and evaluating student work; 51% of faculty respondents identified student interaction as the most valuable feature of online education.

Little is known about creating and maintaining online interaction and few studies have examined the quality and quantity of online interactions, or relationship with student satisfaction. Cragg, Dunning and Ellis (2008) utilized a social constructivist framework for their examination of instructor and student behaviors in face-to-face and online courses.

Description of Methodology

In a faith based university in the Southwest, graduate students in online and hybrid (online didactic/clinical practica) nursing courses were invited to participate in the IRB approved study. No identifiers were recorded. For this analysis, the approach developed by Cragg, et al. (2008) was used to examine frequency of communication among the faculty facilitator and participating students. Three representative weeks of discussion were selected for analysis—early, mid-course and course end (for most semester length courses, Week 3, 8 and 14 with some variation for mini-mester and summer courses). Transcripts of participating student and faculty facilitator's posts were prepared and used to analyze word counts for student and faculty frequency analysis. Student Satisfaction was measured by the standard course evaluation instrument. Data was analyzed using descriptive statistics.

Findings and Conclusions

Six online graduate nursing courses with 52 enrolled students, offered for the periods of Fall, 2010 through Fall, 2012, were analyzed. The proportion of the Discussion Board interaction represented by faculty posts ranged from 6 - 31%. Student originated posts representing student/faculty and student/student communication ranged from 73 - 94%. Word counts varied across course types, but were at minimum 100 words. One course utilizes students as seminar leaders, and faculty participation was lowest in this courses. Student satisfaction with the courses averaged 4/5 (1 – 5 scale with 5 being highest satisfaction) indicating high/very high satisfaction with the course, and the online format. While some evaluation data was incomplete, students indicated a high level (90%) of intent to take additional online courses if offered, and that format was more effective than the traditional classroom for their learning.

The use of online courses in graduate nursing education is effective in promoting interaction and students are satisfied with the online format—for phase 2, further qualitative analysis of the themes of the discussion will be used to examine the predictors and quality of the communication.

DOES EDUCATION AFFECT NURSING STUDENTS' MANAGEMENT OF CONFLICT?

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Purpose of Study

This quasi-experimental study proposes to examine conflict management styles of first semester nursing students before and after participation in an educational intervention related to conflict management.

Research Question: What are the differences (if any) in conflict management styles of individual first semester nursing students before and after their participation in an educational intervention related to conflict management?

Rationale and Significance

Professionals who are unable to effectively collaborate and manage conflict create safety risks in health care settings (Kriteck, 2011; EHCCO, 2010). Finkelman and Kenner (2009) emphasized the importance of preparing future health care professionals to work collaboratively and collegially. Nursing programs are challenged to prepare graduates who can manage conflict in the workplace and collaborate effectively in teams.

Description of Methodology

The study uses a quasi-experimental pre- and posttest design without a control group. The setting is a baccalaureate nursing program that has responded to the call by the American Association of Colleges of Nursing (2008) and the Texas Board of Nursing (2010) to incorporate education related to conflict management. Approximately 80 students will be invited to participate. Initially, participants complete a demographic data questionnaire. All first semester nursing students then complete the Thomas-Kilmann Conflict Mode Instrument (TKI: Thomas & Kilmann, 1974) for the purpose of assessing their preferred behavioral response to conflict: (a) competing, (b) collaborating, (c) compromising, (d) avoiding, and (e) accommodating. Additionally, they complete the Type Focus assessment, a tool based on the Myers-Briggs Type Indicator® personality inventory.

Following completion of the tools, the participants engage in learning activities that incorporate conflict management as part of their course work. All first semester nursing students receive the educational intervention regardless of their participation in the study. All students will complete the TKI again during the last two weeks of the semester, following the intervention.

Objective data are analyzed using descriptive statistics (frequencies, means, standard deviations), and paired t-test will be used to examine the relationship between data collected from the students' responses on the TKIs before and after the educational intervention.

Limitations include the possibility that students may discuss their responses and be influenced by others on the second administration of the tool. Students who consent to participate in research may not be representative of the eligible students who decline.

Findings and Conclusions

Preliminary descriptive analysis of data for the first cohort of 40 participants revealed a mean age of 22 years (SD=4 years; Range = 20-38); the majority were married (93%) and of Hispanic origin (63%). The majority of participants (55%) preferred the sensation function, with attention to concrete facts and detail, for taking in information; 60% preferred the feeling function, a concern for feelings, justice and personal approaches, for decision-making strategies. Fifty percent of participants used the competing style of conflict management while almost 60% used avoiding strategies. On average, 65% used accommodating and 35% used collaborating styles to manage conflict.

DIFFERENCES IN GLYCEMIC CONTROL BETWEEN AFRICAN AMERICAN ADULTS WITH TYPE 2 DIABETES, WHO DO OR DO NOT SELF-MONITOR THEIR BLOOD GLUCOSE

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Purpose of Study

The purpose of this study is to determine whether there is a difference in glycemic control between African American adults with type II diabetes who self-monitor their blood glucose level and those who do not, at a Community Health Center in East San Antonio.

Rationale and Significance

Healthy People 2020 has goals to reduce disparities and improve glycemic control in ethnic minorities. Uncontrolled diabetes leads to many co morbidities such as heart, kidney, eye and nerve disease or cerebrovascular accidents, which can result in large financial burdens. In 2007 alone, direct and indirect costs of diagnosed diabetes in the United States was \$174 billion (CDC, 2012). Studies show that African Americans are affected more by diabetes than many other minority groups and are 1.8 times more likely to have diabetes as non-Hispanic whites (ADA, 2011). Self- testing of blood glucose is paramount in diabetes care and becomes a useful tool in managing a patient's treatment plan and preventing long-term complications of diabetes (Carteret, 2010). Nurses, especially those in primary care, can use the test to establish which other self-care activities need adjusting or to check compliance with medication in conjunction with their clients using a health belief model. The CDC recommends blood glucose testing for those who have difficulty controlling blood glucose levels as is the case with many African Americans. Glycosylated hemoglobin (HbA1C) test is used to estimate the average blood glucose level over the past 2-3 months and monitors glycemic control (ADA, 2011).

Description of Methodology

This study used a descriptive, retrospective design to answer the research question. A convenience sample of 30 subjects was retrieved from electronic records of participants who attended the health center in the last three months. All were African American with a mean age of 52. Two thirds of the sample were female (20, 66.7%) and only 9 (30%) reported glucose self-monitoring. Fifty-seven percent had HBA1C levels above 7 indicating poor glycemic control, and 90% (27) had a BMI greater than 25 indicating overweight with 67% of those in the obese and morbidly obese category. Descriptive statistics and independent samples t-test was used for data analysis.

Findings and Conclusions

An independent-samples t-test was conducted to compare the HBA1C values for the group that monitored their own glucose and those who did not. There was no significant difference in scores for those who self-monitored (M=9.411, SD 3.35) and those who did not (M=10.005, SD 4.98); $p=.75$ (two-tailed). This study suggests that African American adults with diabetes need more education on self-glucose monitoring including the correct technique and its role in glycemic control. Limitations of the study include the small sample and an unequal group size. Providers can utilize the findings to help African Americans in diabetes self-care management.

A CROSS-NATIONAL ANALYSIS OF THE NUTRITION HABITS OF HISPANIC MOTHERS AND DAUGHTERS

Monica Navarez Ramirez, Ph.D., RN

Purpose of Study

This study examines current eating habits, weight history, health perception, future time perspective, family dietary support, friend dietary support, and the health outcomes of BMI, waist circumference, and nutrition of 157 Hispanic daughters and mothers in Texas and Mexico. The differences between U.S. and Mexico cohorts are also examined in relation to their nutrition choices and their generational preferences.

Rationale and Significance

The rates of obesity in Hispanic women increased significantly between 1994 and 2008 from 35.3% to 45.1% (National Center for Health Statistics, 2010). Poor nutritional habits and obesity have long-term negative health ramifications that warrant targeted efforts to stem this growing epidemic.

Description of Methodology

The study used a cross-sectional survey design involving 91 items administered online via Internet-based data collection system.

One-hundred and fifty-seven Hispanic nursing students and their mothers participated (10 U.S. mothers, 22 U.S. daughters, 14 mothers in Mexico, and 111 were Mexican daughters). The sample included 24 mother-daughter dyads. Ten of the dyads were from the US, 13 were from Mexico, and 1 dyad consisted of a US-based daughter whose mother was from Mexico. The total sample ranged from 18-76 years of age with a mean age of 27.6 years (SD=13.0). Multiple groups provided for comparison between group design. Strength of relationships was measured with the correlational design. Non-parametric tests statistics were used to test the hypothesis that scores were more similar between persons in a family group than persons in a generational group.

Findings and Conclusions

This work indicates that the younger generation appears to have nutrition habits more closely associated with their age cohort than their family unit. In the context of the surging epidemic of obesity in the Hispanic culture and with an awareness of the pivotal role played by the Hispanic woman in the health and nutrition choices of her family, this research project provides an initial dialogue regarding factors influencing the Hispanic population toward healthier eating habits and increased health promoting behaviors.

ENSURING QUALITY: IMPLEMENTING A COMPREHENSIVE TEST REPORTING SYSTEM IN PRIMARY CARE

Skyler Salmasi, RN, MSN, NP-C, DNP Student

Purpose of Study

The purpose of this project was to improve the procedure for laboratory test reporting in an internal medicine (IM) clinic resulting in increased patient satisfaction and improved care processes. Goals for the project include that 75% of patients report that they “usually, almost always or always” receive test results in their preferred communication medium, as measured on Clinician & Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS) by the end of a 90 day evaluation period. The research question is: for patients at the Internal Medicine (IM) clinic, does implementing a comprehensive test reporting system (using the EHR [electronic health record] and patient preference for reporting test results), improve overall patient satisfaction, care outcomes, and communication with providers, during a 90 evaluation period?”

Rationale and Significance

Many patients are frustrated with the healthcare system and the exhausting process of obtaining health care. The process started with assessing the microsystem and patient needs in a private internal medicine practice, and then identifying the clinical problem. The patients at the (IM) Clinic in rural Polk County, Texas had expressed dissatisfaction with care manifested, by a decline in number of patients seen per day and increased transfers to other providers. To confirm decreasing patient satisfaction, observations, interviews and surveys were used. According to the CG-CAHPS survey, over 50% of IM patients indicated not receiving test results. This compares to the national CG-CAHPS results, which 90% reported receiving test results, indicating the IM clinic had a higher rate of non-reporting (CAHPS, 2010).

Description of Methodology

The evaluation process included both formative and summative measures. Patient handouts were evaluated for readability using the Microsoft Word Flesch-Kincaid readability test. The checklist tool used for the evaluation was initially evaluated for face validity by the DNP student and determined to have adequate content validity by two other staff. The results showed agreement between observers at three time intervals, with a low level of intra-observer variability. Descriptive statistics including percentages were calculated to describe the patient responses to evaluation questions, including the number of patients that receiving test results as measured by the CG-CAHPS survey. The pre- (n=35) and post-implementation (n=75) group were compared for statistically significant differences in test reporting using the Wilcoxon rank test.

Findings and Conclusions

The post-implementation group reported similar results with receiving test results, indicating little improvement with no statistical significance ($p=.252$). Changes: 100% linkage to the EHR, 81.5% of results had physician documentation and over 70% of patients were notified of results (n=400). 100% of patients requesting portal access received instructions, 2% of patients accessed portal and 92% of patients (n=25) verbalized ways to receive results. One solution to over-load is hiring a registered nurse to complete callbacks, education and quality assurance. Staff incentives could improve office performance. Future research should focus on replicating interventions where there is more computer literacy and access. Extending the evaluation process may yield more positive results. The comprehensive test reporting system was a series of significant interventions which when implemented in a coordinated fashion became an important quality improvement initiative with the potential to improve patient outcomes.

HARDINESS, PERCEIVED SOCIAL SUPPORT, PERCEIVED INSTITUTIONAL SUPPORT, AND PROGRESSION OF MINORITY STUDENTS IN A MASTERS OF NURSING PROGRAM

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Purpose of Study

This study investigated the perceptions of minority students about hardiness, institutional and social support, program progression and graduation in three separate universities. The research questions are: (1) What is the relationship between hardiness scores at the beginning of graduate study and student success as measured by cumulative GPA among a sample of master's level minority nursing students? (2) What are the differences in ethnicity, perceptions of hardiness, and cumulative GPA between those who graduated or remained in the programs and those who dropped out? (3) What are the differences in cumulative GPA, perceptions of institutional support, and perceptions of social support 3 months after entry into graduate study among those who dropped out of the program and those who graduated or were still in the program.

Rationale and Significance

Lack of cultural diversity in the health care workforce has been linked to health disparities. In 2009-2012, only one fourth (26%) of masters students in nursing and one fifth (23%) of doctoral students were from minority backgrounds (American Association of Colleges of Nursing [AACN], 2010), which is not representative of the U.S. population. In 2010, there were approximately 50.5 million Hispanics in the United States or about 16.3% of the total population accounting for most of the nation's growth (56%) from 2000 to 2010. Demand for ethnic minority nurses at masters and doctoral levels will increase as the population becomes more ethnically diverse. Most recently, the Institute of Medicine (IOM; 2010) has urged increased diversity in the workforce to meet the goals of a reformed health care system. A few studies have examined minority student perceptions of what makes them successful or interferes with success in masters programs in nursing. What is not known is how student characteristics of hardiness are related to student success and program completion in graduate education.

Description of Methodology

This pilot study used an exploratory, descriptive design to answer the three research questions related to hardiness, perceived social and institutional support, and progression of minority students in Masters of Nursing Programs. The convenience sample consisted of 55 students enrolled in three liberal arts universities - two in Texas [one private, federally designated Hispanic-serving; one state] and one in Tennessee [state]. The study met the established criteria and was approved by the three universities' boards for protection of human subjects. Four instruments - Demographic Inventory, Hardiness Scale, Multidimensional Scale of Perceived Social Support and researcher designed Perceived Institutional Support questionnaire - were used to gather data. Data were analyzed using the computer software package, Statistical Package for the Social Sciences (SPSS). Analysis included descriptive statistics, chi square, t test, and Pearson product-moment correlation.

Findings and Conclusions

The study results found that 76% of the students either graduated or were still in the program at the end of the pilot study, suggesting that these institutions are achieving some success with minority student progression. Findings from this study, although not statistically significant, suggested that low GPA may be a reason for dropout from the programs. The findings from the students who answered questions about institutional support suggest that institutions are perceived to provide adequate support with advising and providing technical support, but opportunities for socialization with other graduate students, mentoring, and financial support were perceived as less available. In conclusion, findings from this exploratory study of relationships among variables provide a foundation for future study.

ROSENBERG SCHOOL OF OPTOMETRY

SURVEY OF NUTRITIONAL HABITS IN STUDENTS SUBJECTED TO VISION SCREENINGS IN ELEMENTARY SCHOOLS IN THE SAN ANTONIO AREA

Lourdes Fortepiani, MD, Ph.D., Narges Kasraie, OD, and Patricia Sanchez-Diaz, DVM, Ph.D.

Purpose of Study

To correlate nutritional habits and dietary intake with ocular findings collected during the vision screening, such as refraction errors, visual acuity, prevalence of strabismus, health of the retina and depth perception.

Rationale and Significance

Visual impairments have a great impact on the normal daily activities of an individual regardless of their age, gender or ethnicity. It is well known that various ocular diseases can be prevented with the combination of proper screening and some interventions as simple as changes in dietary habits. Night blindness, glaucoma, keratoconjunctivitis sicca (dry eye), cataracts, diabetic and hypertensive retinopathy or nutritional amblyopia are some examples of eye diseases with a clear nutritional component. The Rosenberg School of Optometry (RSO) provides an ideal setting to perform visual screenings and to initiate interventions that may help prevent or delay the onset of common causes of dietary-related blindness and visual impairment in pediatric patients.

Description of Methodology

With the assistance of a registered dietitian to develop a brochure containing information regarding the impact of nutrition in visual health and create a dietary survey to be distributed amongst the parents/guardians of the students subjected to vision screenings by RSO faculty and Interns. Vision screenings are being used to collect data about refraction errors, visual acuity, prevalence of strabismus, health of the retina and depth perception. Students evaluated in each vision screening are grouped in 27-42 students per session, based on their age and grade level (Kindergarten to 8th grade). Prior to the vision screenings, the students receive an age-tailored 5 minutes talk about the importance of nutrition in the visual health with of the material obtained from US Department of Agriculture (USDA). Consent forms and surveys are being collected through the school nurse.

Findings and Conclusions

We obtained IRB approval from UIW-IRB Committee (12-10-010) to conduct this study. Registered dietitians from Texas Diabetes Institute (University Health System) contributed to the development of the brochure and survey. RSO second year interns in conjunction with RSO faculty are performing vision screenings in elementary schools in the San Antonio area.

Currently, we have collected 41 surveys from 3 schools in the last month. This ongoing project is expected to reach at least 500 participants (with surveys and vision screening data). We are experiencing low survey return rate of around 20% that is delaying our goal. We are currently implementing our recruiting techniques to reach our goal during the next 12 months.

DETECTION AND DIAGNOSIS OF COLOR DEFICIENCY WITH IPAD AND IPHONE PORTABLE DISPLAYS

Hayley George, BS, Optometry Student, Jeff Rabin, OD, MS, Ph.D., Michael Castro, BS, Optometry Student, Daniel Ewing, BS, Optometry Student, Paul Lau, BS, Optometry Student, Shannon Leon, BS, Optometry Student, and Andrew Yoder, BS, Optometry Student

Purpose of Study

Our purpose was to evaluate sensitivity and specificity of iPad and iPhone versions of the Cone Contrast Test (CCT) for diagnosis of color deficiency (CVD).

Rationale and Significance

The rapid proliferation of tablet and mobile devices, coupled with increasing need for vision testing in austere settings, demands development of sensitive vision tests which can be administered on mobile displays to detect abnormalities and monitor change over time.

Description of Methodology

The Netbook CCT presents a series of colored letters visible only to red (R), green (G) or blue (B) cones to determine the lowest contrast necessary for letter recognition. The observer uses a mouse to select each letter seen from a matching display and a rapid up-down staircase determines R, G & B cone scores. The CCT was displayed on iPad 2, iPad 3 and iPhone 4 systems to assess color vision in 16 color vision normal (CVNs) and 13 CVDs confirmed to be CVD on a battery of standard tests. A touch-screen replaced the mouse interface, and all displays were color calibrated prior to testing.

Findings and Conclusions

All CVNs passed iPad and iPhone CCTs yielding 100% specificity for confirmation of normal color vision. All CVDs, diagnosed with R cone (protan) or G cone (deutan) CVD on the Netbook CCT, failed the iPad 2, 3 & iPhone 4 CCTs and were correctly identified as R or G cone CVDs, demonstrating 100% sensitivity for detection and diagnosis of CVD. The portability, ease-of-use and increasing color and spatial resolution of tablets and phone-based displays render them viable options for clinical assessment in austere environments as well as for home medical monitoring. The present results demonstrate the efficacy of these systems for detection and diagnosis of hereditary CVD as well as CVD acquired as an early sign of various diseases.

**COLOR VISION AT LOW LIGHT LEVELS:
COMPARISON BETWEEN COLOR VISION NORMAL AND COLOR DEFICIENT INDIVIDUALS**

Paul Lau, BS, Optometry Student, Jeff Rabin, OD, MS, Ph.D., Michael Castro, BS, Optometry Student, Daniel Ewing, BS, Optometry Student, Hayley George, BS, Optometry Student, Shannon Leon, BS, Optometry Student, and Andrew Yoder, BS, Optometry Student

Purpose of Study

Our purpose was to assess red (R), green (G) and blue (B) cone-specific contrast sensitivity (CS) in individuals with color vision deficiency and in CVDs and in color vision normals (CVNs) at luminance levels spanning a 120x range.

Rationale and Significance

Hereditary color vision deficiency (CVD; 8% males, 1 in 200 females) can increase both error rate and response time in cue-limited settings and when using displays with non-redundant color coding. While color vision tests are conducted under photopic (daytime) light levels, less is known about performance of CVDs under decreased luminance such as dusk and night.

Description of Methodology

The Netbook cone contrast test (CCT), which uses a rapid staircase program to measure threshold (lowest possible) contrast for recognition of R, G and B cone letters, was viewed monocularly through neutral density filters to achieve normal photopic (85 cd/sqm), low photopic (5.4 cd/sqm) and mesopic (0.7 cd/sqm) light levels. CCT scores were measured at each light level in 16 CVNs and 14 CVDs confirmed to be CVN and CVD on a battery of screening tests.

Findings and Conclusions

In CVNs R, G and B cone CS decreased 3-4x with decreasing luminance ($p < 0.0001$). CVDs showed similar results for the color corresponding to their CVD ($p < 0.001$), but the amount of decrease could not be determined precisely because 8 of 14 subjects were unable to see letters at the lowest light level. However, at decreased luminance CVDs showed a greater decrease than CVNs for colors outside their deficiency; R cone (protan) CVDs required 1.6x more contrast than CVNs to perceive G and B cone letters; G cone (deutan) CVDs required 2.1x more contrast than CVNs to see R and B cone letters. At decreased light levels CVDs show decreased color sensitivity for colors corresponding to their deficiency but also demonstrate a more generalized, global decrease in color sensitivity which could potentially impact performance and safety in real-world settings.

EVALUATION OF A NEW TEST OF DISTANCE STEREOPSIS

Shannon Leon, BS, Optometry Student, Jeff Rabin, OD, MS, Ph.D., Michael Castro, BS, Optometry Student, Daniel Ewing, BS, Optometry Student, Hayley George, BS, Optometry Student, Paul Lau, BS, Optometry Student, and Andrew Yoder, BS, Optometry Student

Purpose of Study

Our purpose was to evaluate a new, computer-based test of distance stereopsis to determine its potential for widespread application.

Rationale and Significance

Stereoscopic depth perception (stereopsis) is a powerful cue to relative depth; perceived distance between objects. While each retina is essentially flat (like iPhone “retinal display”), two objects at different distances stimulate retinal points separated by different lengths in the two eyes; this “disparity” is detected by visual cortex and interpreted as depth. Stereopsis is a “hyperacuity” because we see depth as fine as 3 seconds of arc; 10X better than 20/10; 10X smaller than a single cone (30”). Stereopsis is most precise at close distances but decreases with the square of the increase in distance making it less important for distance depth perception. However in an aviation environment devoid of other depth cues, stereopsis can be all important at distance. Hence it is often evaluated at distance in military settings.

Description of Methodology

Distance stereopsis was evaluated with the computer-based Innova Systems, Inc. distance stereo test (DST) which uses red-green glasses to present separate stimuli to each eye to simulate stereopsis. The subject uses a remote control to select 1/4 circles which appears closer than the other three; a staircase determines stereo threshold. Viewing distance was 24 ft. to achieve 6" of arc stereo. 21 subjects were tested with the DST and the near Random DOT Stereopsis Test (NST) using a similar method in book format.

Findings and Conclusions

There was no difference between mean stereo achieved with the DST (15.7") compared to the NST (15.9", $p>0.9$). However with DST 8/21 subjects showed stereo <12" while the NST does not measure stereo <12.5". The computer-based distance stereo test shows potential for widespread application in military and occupational settings. Automated scoring/recording can be combined with other new tests to better quantify operationally based visual performance.

CAN DRY EYE TREATMENT IMPROVE SIMULATED NIGHTTIME DRIVING PERFORMANCE?

Chandra V. Mickles, OD, MS and William J. Benjamin, OD, MS, Ph.D.

Purpose of Study

To test an active topical dry eye treatment (Systane® Balance, Alcon Laboratories; Ft. Worth TX) for impact on the simulated driving performance in mild or moderate dry eye compared to a topical saline (Sensitive Eyes®, Bausch & Lomb; Rochester NY). The effects of the active treatment on dry eye symptoms and signs relative to the saline were also assessed.

Rationale and Significance

Dry eye is a common complaint of millions of people worldwide with a significant impact on quality of life. In particular, it could have a significant impact on key vision-related activities of daily living such as driving. Despite evidence supporting dry eye's negative impact on driving performance, as well as the importance of quality vision for driving, the effects of dry eye on driving performance have received limited attention. To date, there have been no studies of dry eye treatments and their effects on driving performance. Previous literature has established that the mainstay of dry eye treatment, artificial tears, improves visual performance. Our goal was to determine if the benefit of artificial tears extends to improving driving performance and address this gap in knowledge.

Description of Methodology

Forty human subjects with symptomatic mild or moderate dry eye completed a randomized double-masked crossover study. Subjects were sorted randomly into groups that began instilling the active treatment or saline 3 times per day for 30 days. Two-week washout periods with saline were placed before and between the 30-day test periods. A dry eye questionnaire, battery of clinical dry eye tests, and driving simulation (STISIM Drive®, Systems Technology; Hawthorne CA;) were administered at baseline, after the first test period, and after the crossover. Simulation of night driving with episodes of fog and glare including air flow out of dash vents was selected to challenge the dry eye subjects. Key variables of driving performance related to driving precision, accident avoidance, and reaction times were analyzed for each driving session and entered into the data pool.

Findings and Conclusions

Dry eye symptoms and signs were significantly reduced in the active treatment compared to saline ($p < 0.01$). A significantly lower proportion of participants reported dry eye to limit them in actual driving when using the eye drops with active ingredients as compared to the drops with inactive ingredients [30 vs. 45%; McNemar's test, $\chi^2 (1, N=40) = 4.5, p=0.0339$]. The mean values for all of the key variables of driving performance showed comparative improvement for the eye drop having the active ingredients with the exception of deviation of lane position. The frequency of near collisions was lower for the drop with active ingredients ($p=0.0172$) and was the single comparison having statistical significance. Further study may be needed to improve the correlation of clinical assessments and visual task performance.

miRNA IN RETINOBLASTOMA STEM-LIKE CANCER CELLS

Neha Patel, Optometry Student, Thinh Nguyen, Optometry Student, Jaclyn Y. Hung, Ph.D.,
Gail E. Tomlinson, MD, Ph.D., and Patricia Sanchez-Diaz, DVM, Ph.D.

Purpose of Study

Retinoblastoma is the most common pediatric ocular malignancy and, although a 90% survival is achieved after treatment, a combination of early diagnosis and effective therapies is needed to improve patient quality of life.

Rationale and Significance

MicroRNAs (miRNAs) are short non-coding RNA sequences that regulate gene expression at a post-transcriptional level by either inhibiting translation or by inducing target mRNA degradation. The role of miRNA in numerous biological processes including cancer is well established. Recent data has demonstrated the role of certain miRNAs in retinoblastoma. The cancer stem cell hypothesis proposes that most tumors contain a subpopulation of cells with stem cell properties which maintains the tumor and that is capable of recapitulating the tumor when transplanted into a susceptible host. Tumor cells with stem-like properties have been identified in numerous tumors including retinoblastoma. However little is known about the role of miRNA in retinoblastoma stem-like cancer cells. In this study, we used human retinoblastoma cell lines Y79 and WERI-Rb1 as model systems to isolate stem-like retinoblastoma cells and to measure miRNA expression.

Description of Methodology

Y79 and Weri-Rb1 retinoblastoma cell lines were purchased from the American Type Culture Collection (ATCC) and maintained following ATCC guidelines. Surface marker analyses and purification of stem-like retinoblastoma cell fractions: Allophycocyanin (APC) labeled CD133 and CD34 antibodies were from Miltenyi. Staining was performed as per manufacturer's recommendations. As control, isotype IgGs conjugated to APC (Miltenyi) were used. Flow cytometry analyses were performed with a FACSCanto (Becton Dickinson) and cell sorting was performed using a MoFlo XDP (Beckman Coulter). In all cases, viable cells were gated using propidium iodide (PI).

Total RNA was extracted from stem-like enriched and depleted fractions (e.g. cells with high versus low levels of CD133 or CD34 expression) using mirVana™ miRNA Isolation Kit (Ambion). In these sorted cell fractions, expression of over 500 miRNAs was measured by quantitative PCR using TaqMan® Array MicroRNA Cards (Applied Biosystems) and ABI 7900HT Sequence Detection System (Applied Biosystems).

Findings and Conclusions

CD133 surface marker was expressed in 10% of Y79 cells but these cells were negative to CD34 or ALDH stem-like markers. Most WERI-Rb1 cells were positive to CD133 (~89%) and to CD34 (~70-75%) markers but, like Y79 cells, did not contain an ALDH positive fraction. Retinoblastoma Y79 cells were sorted by flow cytometry based on their levels of CD133 expression. Then, relative microRNA expression was measured in these CD133 bright and CD133 dim Y79 cell populations. Thirty-three miRNAs were highly expressed (>3-fold change) in Y79 expressing high levels of CD133 (CD133 bright cell population) while low expression (<0.4-fold) was detected for 73 miRNAs. Nine of these potentially de-regulated miRNAs (DEmiRs) were also identified by us in a prior screening using stem-like enriched fractions from other pediatric cancer cell lines. Future studies will be needed to uncover which pathways are regulated by these miRNAs in retinoblastoma and whether a DEmiR signature can be used to stratify retinoblastoma into treatment groups and to elucidate novel potential miRNA-based therapeutic options.

COLOR VISION DIAGNOSIS WITH THE NETBOOK CONE CONTRAST TEST

Jeff Rabin, OD, MS, Ph.D., Jonathan Boster, BS, Optometry Student, Madison Ruelle, BS, Optometry Student, Thien Tran, BS, Optometry Student, and Brandi Stewart, BS, Optometry Student, and Veronica Wong, BM, Optometry Student

Purpose of Study

Our purpose is to describe sensitivity, specificity and application of the Netbook computer cone contrast test for quantifying normal color vision and for detection and diagnosis of hereditary and acquired color deficiency.

Rationale and Significance

Color vision depends on three cones sensitive to long (L), middle (M) or short (S) wavelength light. Hereditary color deficiency (CVD; 8% males, 0.5% females) is due to a sensitivity shift or lack of L or M cones. Hereditary S cone CVD is rare but acquired S CVD can be an early sign of ocular, systemic or neurologic disease making S cone tests needed. The computer-based cone contrast test (CCT) reveals type (L,M,S) & severity of CVD and detects acquired CVD in various diseases. An updated version of the CCT was developed for display on a portable Netbook computer.

Description of Methodology

The CCT presents colored letters visible only to L, M or S cones in decreasing steps of cone contrast (13 to 1.4%) on a 10.1 inch Netbook viewed at 91cm (Innova Systems, Inc). A colorimeter auto-calibrates to ensure accurate contrast. The standard CCT had subjects read each letter aloud from highest to lowest contrast; Netbook presents randomized single letters and subject uses a mouse to select letters seen from a matching display. A response-driven parameter estimation by sequential testing staircase adjusts cone contrast to rapidly reach L, M & S thresholds in ½ the time of the standard. We compared Netbook to standard CCT in 20 normals (CVN) & 10 CVD & evaluated the Netbook in 500 chemical company employees.

Findings and Conclusionss

Both Netbook staircase and standard CCT showed 100% sensitivity for diagnosis of CVD and 100% specificity to confirm CVN with no difference between methods ($F=0.11$, $P>0.74$). Average and threshold CCT response times were 1.3X to 4X longer in CVD vs. CVN ($p<0.001$). Netbook CCT showed 100% agreement with the standard Ishihara test for CVD detection in 500 chemical company employees and quantified type and severity of CVD. In this population, the binocular CCT was equal to the monocular for diagnosis of CVD. The Netbook CCT uses a rapid staircase and forced choice letter recognition to diagnose type and severity of CVD in <3 minutes. Reaction time serves as an added metric of color vision. Binocular testing can be used for screening but monocular testing is preferred for acquired CVD; often asymmetrical between eyes. Touch-screen CCT for mobile devices are in development.

IN SEARCH FOR EFFECTIVE INTERPROFESSIONAL EDUCATION TEAMS: ASSESSING PERSONALITY TYPE PREVALENCE BY TRUE COLORS TEST

Patricia Sanchez-Diaz, DVM, Ph.D., Monica Ramirez, Ph.D., RN, Decima Garcia, Ph.D., FACHE,
Susan Klappa, PT, Ph.D., and William Linn, Pharm.D.

Purpose of Study

The aim of this study was to sort personality profiles from the 5 healthcare schools and programs at the University of the Incarnate Word (UIW) to determine the prevalence of the different personality types among students and faculty who will participate in interprofessional collaborative practice.

Rationale and Significance

Interprofessional education (IPE) occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes (WHO, 2010). The core competencies of IPE: Values and Ethics, Roles and Responsibilities, Interprofessional Communication, and Teams and Teamwork are naturally interconnected and build on each other. Efficient team work implies shared decision making and responsibilities, consensus on the ethical principles, constructive conflict management, and reflection of the role of each member within the team in order to improve team performance. There is very little available data regarding the impact of personality profiles in healthcare IPE and practice teams.

Description of Methodology

We used True Colors personality test (www.true-colors.com/) to compare the personality profiles of students and faculty from health care administration, nursing, pharmacy, physical therapy, and optometry programs at UIW. A regression analysis using SPSS statistical software (IBM) was performed to determine any potential school (profession) bias for certain personality type(s) and/or if any particular personality type was characteristically represented across all the professions included in the study.

Findings and Conclusions

Gold personality (organized, detail oriented) was the most frequent within our healthcare student population, while Green personality (analytical, inquisitive) was one of the weakest. Intriguingly, faculty personalities differed from the ones observed in the students.

Personality may influence the strategies used for shared decision-making, conflict resolution, and reflection on IPE team's roles. Data generated from this type of studies may, therefore, help in the design of balanced and competent IPE teams.

AUTOMATED AMSLER GRID TESTING

Brandi Stewart, BS, Optometry Student, Jeff Rabin, OD, MS, Ph.D., Jonathan Boster, BS, Optometry Student, Madison Ruelle, BS, Optometry Student, Thien Tran, BS, Optometry Student, and Veronica Wong, BM, Optometry Student

Purpose of Study

Our purpose was to improve sensitivity and specificity of Amsler grid testing by using a computer-based grid with selectable color and luminance levels, interactive computer display, and compatibility with rapidly evolving mobile and tablet devices for home use.

Rationale and Significance

The US prevalence of age-related macular degeneration is projected to increase from 1.75 to 3 million by 2020 (Friedman, 2004) making accurate detection and monitoring of macular disease critical. The Amsler grid remains an invaluable in-office and home tool to assess central vision but depends on accurate patient responses and accessibility, and the supra-threshold, black/white Amsler grid may not detect subtle decreases which signify vision threatening disease.

Description of Methodology

To assess efficacy of the automated Amsler grid (AAG), the physiological blind spots (BS) of 40 healthy eyes were mapped using the AAG. Testing was conducted monocularly with white-on-black, red-on-black, and low luminance gray-on-black grids. The subject fixated a cursor positioned 11 deg left or right of grid center; the clinician marked points of last seen and first reappearance of a dot moving horizontally away from fixation, then moving up/down away from the BS to quantify horizontal (H) and vertical (V) BS dimensions.

Findings and Conclusions

There was no difference in H ($p>0.44$) or V ($p>0.24$) blind spot size between right and left eyes of each subject. The red-on-black and white-on-black grids were most precise showing mean H BS=5.85 deg mean V B =6.43 deg; V/H ratio=1.13. The BS was slightly larger when measured with the low luminance grid (H: $p<0.04$; V: $p<0.07$). The AAG can detect absolute and relative scotomas exemplifying its potential for monitoring macular function on computer, tablet and mobile devices. While the BS is not typically measured with the Amsler, fixation on the edge allows accurate BS measurement critical for detection and monitoring of ocular and neurological disease. Low luminance, low contrast and pathway specific AAGs (e.g., Parvo vs. Magno; L, M or S cone) can disclose early changes in visual function to complement rapidly advancing optical, imaging and genetic techniques.

IMAGE RELOCATION WITH PRISMATIC INTRODUCTION IN PATIENTS WITH BILATERAL CENTRAL SCOTOMAS

Matt Valdes, OD, Stanley Woo, OD, MS, Josh Pratt, OD, Ph.D., and George Woo, OD, Ph.D.

Purpose of Study

The purpose of this study is to evaluate the oculomotor response to ophthalmic prism in patients with bilateral central scotomas with the use of a scanning laser ophthalmoscope (SLO).

Rationale and Significance

Age related macular degeneration (AMD) is a disease affecting the central retina and detail vision resulting in permanent vision loss. With the destruction of the fovea, adaptive strategies to develop a preferred retinal locus (PRL) just beyond the borders of the central scotoma have been well documented in patients with central vision loss. Therefore; current low vision rehabilitation is aimed at optimizing the remaining functional vision with magnifiers, telescopes, electronic magnification and eccentric viewing training.

In some cases image relocation (IR) has been postulated as another rehabilitation approach for patients with AMD. Of interest is the exact mechanism or oculomotor behavior that results from the introduction of prism in the strategy first described by Romayananda. This study attempts to quantify the eye movement that is observed with the introduction of ophthalmic prism in patients with bilateral central scotomas.

Description of Methodology

Six low vision patients with bilateral central scotomas and six normally sighted patients were recruited. Nidek MP1 microperimetry was performed to confirm an absolute central scotoma and identify the patient's preferred retinal locus (PRL). A Rodenstock SLO captured real time images of the retina while projecting a target onto the previously identified PRL. A 6-8 prism diopter lens was then introduced, while the patient was instructed to maintain fixation on the target. Retinal landmarks were used to measure the retinal image shift secondary to fixation target shift and subsequent re-fixation with the PRL. Average deviation from displaced fixation target and time (timestamp video) to re-fixate were calculated using ImageJ software.

Findings and Conclusions

Re-fixation to displaced target for the AMD group was within 3 pixels or 11.66 arc minutes (meanx [SDx], 2.9, [3.92] and mean, [SDy], 2.53, [4.18]). The control group re-fixated more accurately (meanx [SDx], 0.33, [1.14] and mean, [SDy], 0.88, [2.50]), but was not statistically different from the AMD group ($t_{5x} = 1.33$, $p_x = 0.256$ and $t_{5y} = 0.38$, $p_y = 0.723$). Time to re-fixate demonstrated that the control group (mean [SDn], 0.98 sec, [0.19 sec]) was quicker than that of the AMD group (mean [SD], 2.83 sec, [1.63 sec]) and was statistically significant ($t = 5.03$, $p = 0.004$). One patient did not re-fixate. His data was excluded and analyzed individually.

For our sample we were able to conclude that with the introduction of prism, patients with bilateral central scotomas will re-fixate similar to our control group. However, time to re-fixate was significantly slower in the AMD group. Prism relocation resulted in re-fixation in 5/6 subjects. This data suggests that image relocation does not appear to benefit patients with established PRLs.

INTERPROFESSIONAL AND COLLABORATIVE PRACTICE PROJECT: PERSONALITY TYPE AND CONFLICT MANAGEMENT STYLES OF HEALTH PROFESSIONAL STUDENTS

Matt Valdes, OD, Monica Navarez Ramirez, Ph.D., RN, Decima Garcia, Ph.D., FACHE, Daniel Dominguez, MHA, Ph.D., Mary Elaine Jones, Ph.D., RN, and Linda Hook, APHN-BC, MSN, MSHP

Purpose of Study

Effective conflict engagement is considered a moral imperative in health care and an essential precursor to interprofessional collaboration. This IRB approved study examines personality-based decision making preferences and conflict handling modes, as well as, the effect of an interprofessional collaborative education and practice project (IPECP) experience, on attitudes toward health care teams among a sample of health professions students.

Rationale and Significance

Every health discipline is challenged to address quality and safety in health care. Safety has been equated with collaborative teams; health professionals who are unable to effectively collaborate are considered risks to the health and well-being of patients for whom they care. Thus a hallmark of effective collaborative teams, the ability to manage interprofessional conflict, is a teachable skill.

Description of Methodology

The Thomas-Kilmann Conflict Mode Instrument (TKI), the TypeFocus Inventory, and the Attitudes Toward Health Care Teams Scale (ATHCTS) will be administered pre-post to 20 health profession students participating in the IPECP. Participants included five students each from degree programs in Pharmacy, Optometry, Nursing and Health Administration. The majority of the students are female (75%), ethnically diverse (70%) with a median age of 26. Students will complete 14 hours of curriculum based learning and 24 hours of collaborative clinical practicum in a primary care setting. Data will be analyzed using descriptive and inferential statistics through SPSS, Version 19.

Findings and Conclusions

Pre intervention assessment results indicate that: 1) Decision making styles are Sensing/Thinking (30%), Sensing/Feeling (30%), Intuitive/Thinking (25%) and Intuitive/Feeling (15%). 2) As a group, the respondents preferred conflict handling mode scores were near the 50th percentile for Competing, Avoiding, and Accommodating; Aggregate Collaborating mode scores were less than the 30th percentile and Compromising mode scores were near the 60th percentile when compared to a normative sample. Of the three subscales of the ATHCTS, baseline scores were lowest on the shared leadership subscale.

Training interprofessional students to appropriately leverage personality based decision making differences and conflict handling modes holds potential for effective collaboration to ultimately improve patient care. ATHCTS scores indicated that students could benefit from knowledge and skill in shared leadership.

RAPID QUANTIFICATION OF LOW CONTRAST VISION

Veronica Wong, BM, Optometry Student, Jeff Rabin, OD, MS, Ph.D., Jonathan Boster, BS, Optometry Student, Madison Ruelle, BS, Optometry Student, Thien Tran, BS, Optometry Student, and Brandi Stewart, BS, Optometry Student

Purpose of Study

Our purpose is to describe a new approach for rapid assessment of low contrast vision using a Netbook computer.

Rationale and Significance

High contrast visual acuity is the cornerstone of vision care, but symptoms occur and performance can be decreased despite normal VA. Refractive surgery, optical aberrometry/wavefront correction, and evolving structural imaging techniques demand sensitive metrics with low contrast testing at the forefront. Our purpose is to describe a new approach for rapid assessment of low contrast vision using a Netbook computer.

Description of Methodology

Low contrast (5%) VA and small letter contrast sensitivity (CS; 20/50 letter size) were measured in 22 adults using translucent letter charts (PrecisionVision) back-lit in a fluorescent light box viewed at 4m. Measures were compared to VA&CS obtained with a computer-based, parameter estimation by sequential testing staircase program displayed on a Netbook (10.1 inch 1024x600 display; Innova Systems, Inc.) viewed at 91cm. On each trial a single letter appeared centered in the display and the subject used a mouse to select the letter seen from an adjacent matching display. Letter size (VA) or contrast (CS) changed based on the response-driven staircase to rapidly record VA & CS and response time.

Findings and Conclusions

There was no significant difference ($F=0.02$, $p>0.89$) between low contrast VA with standard letter chart (mean logMAR+SD=0.22+0.13; 20/33+/-6 letters) vs. Netbook (mean+SD=0.20+0.10; 20/32+/-5 letters). Moreover there was no difference ($F=0.12$, $p>0.72$) between 20/50 letter CS with letter chart (mean logCS+/-SD=1.59+/-0.17) vs. Netbook (1.60+/-0.22). Binocular VA exceeded monocular by 30% for letter chart and by 20% for Netbook; binocular CS exceeded monocular by 50% for letter chart and 40% for Netbook; but these differences were not significant ($F=0.83$, $p>0.36$). Our results support use of a Netbook for rapid assessment of low contrast vision. Staircase-to-threshold and forced-choice letter recognition allows rapid VA & CS measurement with precision of ETDRS charts. Advantages include letter randomization, contrast control & reaction time measures. Future efforts include application to tablet and mobile systems to enhance portability and home medical monitoring.

COLOR VISION IN HETEROZYGOUS CARRIERS OF COLOR DEFICIENCY

Andrew Yoder, BS, Optometry Student, Jeff Rabin, OD, MS, Ph.D., Michael Castro, BS, Optometry Student, Daniel Ewing, BS, Optometry Student, Hayley George, BS, Optometry Student, Shannon Leon, BS, Optometry Student, and Paul Lau, BS, Optometry Student

Purpose of Study

Our purpose was to evaluate color vision in obligate carriers of hereditary color vision deficiency.

Rationale and Significance

Hereditary red (protan) and green (deutan) color vision deficiency (CVD) is an X-chromosome linked condition (8% males; 0.5% of females). While heterozygous female carriers (e.g., daughter of CVD father) typically pass standard color tests, subclinical CVD has been reported in carriers, presumably due to expression of the anomalous cone photopigment with the three normal photopigments.

Description of Methodology

A battery of color tests, including Ishihara, Dvorine, HRR pseudo-isochromatic plate (PIP) tests, normal and de-saturated D15, FM 100 Hue, cone-specific contrast sensitivity (cone contrast test; CCT), and a color discrimination-response time test, were administered to 16 color vision normals (CVN) and 9 carriers based on family history and/or testing of family members.

Findings and Conclusions

All carriers passed Ishihara and Dvorine PIPs; 2/9 missed 1 of 4 red-green HRR screening plates but made no errors on diagnostic plates. All carriers passed normal and de-saturated D15; most were normal on FM 100 Hue: 4 made <9 errors, 3 had errors between 30 and 66; 1 scored 88; 1 scored 120 with no specific patterns of errors. Five of 10 carriers were >2SD below normal on CCT, but decreases were less than those shown by hereditary CVDs. Response times of carriers were largely normal on the color reaction-time test, but at low contrast error rate was higher for carriers: 6/9 carriers made at least 2 errors while only 5/16 CVNs made 2 errors. Carriers of CVD perform normally on most color tests, but some show sub-clinical deficiency at low color contrast. While it is unlikely that these subtle deficiencies are occupationally significant, it is important to be aware of the origin of subtle CVD, particularly when using advanced tests to detect acquired CVD as an early sign of ocular, systemic and/or neurologic disease.

SCHOOL OF GRADUATE STUDIES & RESEARCH

NAVIGATING THE IRB PROCESS IN A NATIONAL, INTERDISCIPLINARY, MULTICENTER TRIAL

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Purpose of Study

The purpose of this study is to (a) describe Institutional Review Board (IRB) barriers encountered in the Collaboration Among Pharmacists and Physicians to Improve Outcomes Now (CAPTION) trial, (b) to provide solutions to barriers, and (c) to provide a correlational analysis of the impact of IRB administrative requirements and researchers' willingness to participate in future Practice-Based Research Network (PBRN) studies. It is hypothesized that challenges associated with multicenter IRBs may impact the willingness of investigators to serve on multicenter studies.

Rationale and Significance

Prior to conducting multicenter research within PBRNs, IRB review and approval is required. However, regulatory challenges posed by multicenter research projects can be daunting. IRBs have a common set of rules and regulations, yet the interpretation and implementation of these regulations vary. Several studies on multicenter research have documented significant variability among IRBs on issues including study classification, consent requirements, methods and/or issues related to subject recruitment, and length of time for approval. These differences result in significant administrative burden, particularly with regards to staff time and resources. It is unknown if this burden influences the willingness of investigators to participate in multicenter studies. Efforts to resolve multicenter IRB challenges may be needed to assure that principal investigators (PIs) are willing to serve on these types of studies and to optimize the potential benefits associated with PBRNs.

Description of Methodology

The CAPTION trial (supported by the NIH National Heart, Lung, and Blood Institute R01 HL091841) is a multicenter, prospective, cluster-randomized study evaluating implementation of a physician-pharmacist collaborative model to improve outcomes in patients with hypertension and asthma. Twenty-eight site PIs participated in the CAPTION study. An anonymous web-based survey captured site PI's perceptions related to the IRB process. Correlational analysis was conducted to determine if IRB challenges were associated with the willingness of site PIs to participate in future PBRN studies. Also, issues and resolutions related to gaining approval from multiple IRBs were catalogued.

Findings and Conclusions

Navigating IRB approval for multicenter studies was much more challenging and time consuming than expected, even for seasoned investigators. IRBs from different sites within the PBRN posed a number of challenges, including bias regarding source of the application, issues regarding study design, study instruments, access to patient records, study procedures, Spanish-only speaking subjects, role of clinic physicians, interdepartmental concerns, and updates at continuing review. Responses from the PI survey (75% response rate) indicated that the willingness of an individual to serve as a PI in the future was inversely related to the perceived difficulty of obtaining initial and continuing IRB approval ($r_s = -0.599$, $p = 0.004$ and $r_s = -0.464$, $p = 0.034$ respectively). A revision of current rules and regulations regarding human subjects protection, particularly related to practice-based studies, improvement in IRB processes, and support from coordinating centers may decrease the burden associated with IRB approval and increase participation in practice-based research networks.

MY FAMILY, MY SUCCESS: ASSESSING THE IMPACT OF A NON-TRADITIONAL GRADUATE STUDENT ORIENTATION PROGRAM

David A. Ortiz, Ph.D. and Kevin B. Vichcales, Ph.D.

Purpose of Study

The aim of this study was to evaluate the perceptions among family members and graduate students attending the Fall 2012 New Graduate Student and Family Orientation. Specifically, the researchers hypothesized that the inclusion of family members in the orientation and the revised format would yield high levels of satisfaction among graduate students and family. Further, this program sought to increase the levels of preparation for graduate students prior to matriculation.

Rationale and Significance

New graduate student orientations typically focus on academics and do not include family. However, Stewart's (1995) Model of Graduate Student Development suggests that during the "entry characteristic phase" focus should be placed on maintaining motivation, managing academic demands, and developing a sense of purpose and direction. The revised UIW graduate student orientation reflected an emphasis on these measures as identified in the following changes to orientation: 1) expanded the length of time from 1.5 hours to 4 hours; 2) invited family members and friends to participate; 3) created three separate tracks (e.g., student, family, children); 4) added amenities (e.g., breakfast, lunch, campus tours, family photograph); 5) addition of discipline specific orientations; and 6) creation of a "rite of passage" ceremony involving graduate students, family, and GSC staff. This innovation in graduate student orientation represents a departure from the historical orientation approach and presents a greater opportunity to increase sense of belonging and persistence to graduation. Most notably, the inclusion of family members in orientation represents a critical departure from traditional graduate student orientations and introduces a variable that may facilitate motivation and direction during the first semester of graduate school.

Description of Methodology

Descriptive and summary statistics were used to provide an overview of survey findings. The researchers administered a five-point Likert scale survey to each population group. The population groups included: 1) all new graduate students attending orientation (n=57), and 2) all adult (18 years or older) family members attending orientation (n=66). Slight modifications in the surveys were made in order to collect additional information germane to each sample group beyond the standard questions. Surveys were distributed to each sample group during the concluding program of each group's respective orientation track. While every effort was made to ensure that the language and grammar was easy to read and interpret, some family participants may have had limited English proficiency and as such either chose not to complete the study or had minimal language comprehension of the study questions.

Findings and Conclusions

The findings of the program evaluation indicate a high level of satisfaction among all participants in the new graduate student orientation. Presentations during the family and student track were highly rated (often in the 90% or higher category). Students rated their sense of preparedness for graduate school after attending the orientation at 95% and an overall satisfaction at 98%. Family members rated their preparedness to support a graduate student after attending orientation at 100% and an overall satisfaction of 94%. In summary, the inclusion of family and the re-organized orientation program found overwhelming support among both population groups.

UNDERSTANDING THE SOCIAL AND ACADEMIC RESILIENCY OF MEXICAN-AMERICAN MALE STUDENTS AT A FAITH-BASED UNIVERSITY

David A. Ortiz, Ph.D.

Purpose of Study

The purpose of this study was to understand the higher education experiences that successful Mexican American male students undergo while attending a large private Christian university located in the southwest, and what factors or experiences contribute to their persistence and educational attainment. Three questions guided this study: 1. What are the barriers to success that Mexican American male students face and how do these students use heuristic (campus specific) knowledge and theoretical knowledge as a means to overcome these barriers? 2. How does membership in student organizations affect educational attainment, sense of belonging and student success? 3. How does the mission, campus culture and traditions of a faith-based university influence the persistence of Mexican American male students?

Rationale and Significance

The college going rate of Latino students is at an all-time high; however, their completion rates continue to lag comparatively among other sub-groups (Snyder & Dillow, 2012; Fry & Lopez, 2012). While other retention studies focus on dropouts (Tinto, 1975; 1987; 1993), a growing body of researchers are concentrating on successful students (Hernandez, 2000; Padilla, 2006; Torres, 2008). Specifically, a connection to family and social/academic validation have been identified to be key factors in success (Hurtado & Carter, 1997; Rendon, 1994). Further, academic success in the first semester remains a critical indicator of persistence (Nora, 2003; Nora & Cabrera, 1996). This study is significant as it seeks to fill a gap in the literature as follows: 1) focus on successful Mexican American students (the largest sub-group of Latinos); 2, build an understanding of the specific experiences of Mexican American males; and 3, focus on private faith-based college experiences.

Description of Methodology

This study used the qualitative tradition of naturalistic inquiry (constructivist) framework (Lincoln & Guba, 1985). The purpose of constructivist inquiry is “to produce depth of understanding about a particular topic or experience (Manning, 1999. p. 12). The primary method of data collection for this study was a series of in-depth semi-structured small group interviews conducted at Alpha Omega University (pseudonym). Other methods such as document analysis and observations were also included to support what Denzin (1989) calls a “triangulation” of multiple data collection tools in order to provide a greater corroboration of evidence. Additionally, peer examination and member checking were used to establish trustworthiness and internal validity. Ten Mexican American males were selected for this study using snowball and status sampling techniques. The constant comparative method of qualitative data analysis as described by Lincoln and Guba (1985) and Glaser and Strauss (1967) was used to analyze the data.

Findings and Conclusions

The findings produced a conceptual model of student success via a process-oriented pathway to success characterized by four clusters and eight themes located within these clusters. Themes included: family support, culture shock, financial press, faith matters, institutional ownership, academic performance, identity development and environmental duality. The themes were at times interrelated and yet generally followed a set pattern of progression along a continuum highlighted by the following sequential points or clusters: Entry, Adaptation, Empowerment, and Victory. The findings highlighted the social and academic resiliency among Mexican American males.

SCHOOL OF MATH, SCIENCE & ENGINEERING

TAKING THE LEARNING ASSISTANCE CENTER TO THE SCIENCE CLASSROOM

Cristina M. Ariza, MBA and Bonnie D. McCormick, Ph.D.

Purpose of Study

The purpose of the study is to evaluate the effect of teaching metacognitive strategies in the context of an anatomy and physiology course on the study methods used by the students and their performance in the course.

Rationale and Significance

Students who have asked for learning skills help have worked effectively with the Learning Assistance Center staff to improve their final course grade. This suggests that it is not just the difficulty of the content, but the lack of study skills to learn anatomy and physiology that hinders student learning. Supplemental instruction with peer mentors at UIW in the PASS program for chemistry and physics uses collaborative learning to improve student engagement in those courses in sessions outside of class and has been successful in improving learning for those that attend these sessions. Based on these experiences, a set of activities to improve study strategies was developed to guide students in acquiring successful learning strategies.

Description of Methodology

The subjects of the study were 53 students enrolled in Anatomy and Physiology during the Spring semester of 2012. Five student-centered activities were introduced to help students understand a variety of methods to learn course content effectively during class time. These learning skills sessions were developed and taught by the director of the Learning Assistance Center. The activities included strategies for effective reading of the course textbook, evaluating information contained in figures, thinking and reading critically to answer questions, and preparation of content specific study materials. Each session took 20 to 60 minutes of class time once a week. The learning activities related to the content presented that week in the lecture portion of the course.

To evaluate the effectiveness of the units on content specific study skills, a pre and post-survey of study skills was administered to the students to determine which study skills the students used outside of class. The results of the surveys were analyzed using descriptive statistics. Student comments were categorized and summarized. Class final grade average was compared to another section taught by the same instructor.

Findings and Conclusions

The grade distribution of the experimental section showed that these students did better in the class than those in the control section. From the survey results, we found that the students changed their study methods and increased the amount of time that students dedicated to studying for the course. Furthermore, students reported that they incorporated these skills in other classes both in science and the humanities.

GROWTH PATTERNS OF ETHNIC GROUPS IN BEXAR COUNTY WITH MODIFIED LESLIE MODELS

Judith Arriaza, McNair Scholar, Zhanbo Yang, Ph.D., and Flor de Maria Garcia-Wukovits, Ph.D.

Purpose of Study

In the previous research study (Arriaza, 2011) the Leslie model was established to predict the population growth of ethnic groups in Bexar County. Even though the model seemed to give satisfactory results, one of its limitations was that the matrix used in that model was static. The purpose of this study is to improve and modify the Leslie model with a dynamic matrix for better population projections. The Leslie model with a dynamic matrix seems appropriate for a human population since the birth rates and survival rates are changing from year to year.

The research questions were as follows: Will a dynamic Leslie model be able to project the population of Bexar County? Will the dynamic Leslie model have better projections than the static Leslie model?

Rationale and Significance

As the population grows, the demand for organization and services will increase. Growth patterns affect the construction of new homes, schools, highways, and water systems. This study will benefit businesses, households, city and county governments, city development, and the people in Bexar county. It will help in planning needed services for the future of the people of the county which will be affected by the ethnic composition of the area.

Description of Methodology

This research was a quantitative study. Mathematica was used as the main computational platform and for curve fitting tasks. A function template was chosen to model the birth and survival rates. The modeled functions were put into the Leslie matrix. For each of the ethnic groups a Leslie matrix was constructed. Population projections for each ethnic group were made up to 2020 and the results were compared to the census of 2000, 2010 and to the static Leslie matrix. Projections by age group were also made up to 2020 for Bexar County. All of the results and projections for this study were illustrated in a bar, line, and pie graphs.

Findings and Conclusions

The dynamic Leslie model was better able to project the population of Bexar County when compared to the results of the static Leslie model and the census data from 2000 to 2010. The dynamic matrix model produced better results for total population projections and per age groups comparisons when compared to the static matrix model. The dynamic model also produced good match with real data for all group.

DEVELOPMENT OF AN UNDERGRADUATE LAB TO STUDY OXYGEN DYNAMICS IN UNICELLULAR ALGAE

Kaela L. Caballero, Honors Student and Betsy D. Leverett, Ph.D.

Purpose of Study

The study aims to observe and evaluate unicellular algal growth under differing levels of oxygen deprivation. This particular study will support classroom discussion of anaerobic metabolism versus aerobic metabolism. The experimental system is economically designed featuring homemade media and a simple aquarium pump. The inquiry under investigation is how to develop an appropriate set of assays to demonstrate the features of oxygen dependent metabolism.

Rationale and Significance

Phycology is a topic of emerging importance. Algae may negatively impact the environment by forming harmful algal blooms (HAB). Algae are being investigated for the use in the development of alternative fuels. The development of this lab would help undergraduate students explore how oxygen dynamics affect the metabolism of unicellular algae, and make applicable some of the issues in today's society trending around algae.

Description of Methodology

Algae were grown to log phase under constant environmental conditions. Data for growth and maintenance was obtained by measuring the light absorbance of the cultures. Oxygen deprivation (hypoxia) was introduced into the experimental system by increasing the argon to air ratio delivered to cultures through a closed air system. Hypoxic conditions were tested for using a dissolved oxygen probe, after a 24-hour oxygen deprivation treatment.

Findings and Conclusions

The effects of hypoxia on energy metabolism was developed using a unicellular algae as a model organism. To initiate the exercise, cultures of *Phaeodactylum tricornutum*, a well-studied marine diatom, were subjected to aeration using four different argon/ air mixtures. The *Phaeodactylum tricornutum* were grown at 400 mL cultures at greater than 100,000 cell/mL initial density. These cultures were placed under four qualitatively different mixtures of argon and air. Using standard laboratory tubing, 0.2 micron in-line filters, commercial grade Argon (LabGas, Inc.), and ambient laboratory air delivered using a small aquarium pump. After 48 hours, a dissolved oxygen probe (Vernier, Inc.) was used to determine the dissolved oxygen in each of the four cultures:

Dissolved Oxygen Levels

normoxic (all air, no argon in the mixture) O₂/mL 8.9 mg

hypoxic condition 1 (less argon than air) O₂/mL 7.2 mg

hypoxic condition 2 (less air than argon) O₂/mL 2.6 mg

hypoxic condition 3 (as little air in the mixture as can be provided, almost all argon) O₂/mL 0.3 mg

The effects of decreased oxygen availability on the energy metabolism of *p. tricornutum* were then determined quantitatively in terms of decreased ATP levels, reduced starch and lipid production, increased lactic acid dehydrogenase activity (LDH), and decreased growth rate. This laboratory exercise gives students experience with spectroscopy, enzyme activity analysis, and aseptic techniques while providing an illustrative tool in discussions of energy metabolism under aerobic and anaerobic conditions.

ZOMBIES! THE APPLICATION OF GENETIC ALGORITHMS TO MODEL ARTIFICIAL AGENTS

Carmen D. Cortazar, McNair Scholar and Michael T. Frye, Ph.D.

Purpose of Study

The purpose of the study was to acquire a solid foundation on artificial life (ALife) while building a simple bridge between ALife and the science of complexity. In addition, the aim of the research was to simulate the idea of cooperation using a Genetic Algorithm (GA) not programmed to perform an intended behavior. The idea of cooperation was exhibited by means of creating an artificial world occupied by two groups of intelligent agents, humans and zombies. Each of the agents will move throughout the simulation in an effort to converge to the same goal while the GA evolves and attempts to optimize. The unpredictable behavior that emerges from the evolution of the algorithm will be the primary focus of the researcher. The researcher will try to prove that by merely changing the traits of the intelligent agents and controlling the environment in which they are arranged the overall performance of the GA can be affected. Ultimately, the researcher will answer the question: Can ALife be simulated? Can the idea of cooperation be simulated without actually programming it?

Rationale and Significance

There is an elevated interest in the study of complex systems attempting to answer questions like: How complex can a system be? Is there one system with greater complexity than another? The study of complex systems spans such systems as technology, economics, education, politics, and the environment, to name a few. The complexity of systems like these can be measured in a variety of ways; one of which is the study of ALife. ALife attempts to construct models from their elemental units to provide researchers an insight into the dynamics and chaos that make up living systems. Synthetic constructions in agent-based modeling, like the one performed this summer, allow researchers to find consistent patterns of cooperative behavior.

Description of Methodology

After collectively investigating the implications that ALife has on the science of complexity, an agent based zombie versus human genetic algorithm simulation model was created. The humans were assigned three personality traits and the zombies were assigned one. Next, two cost functions were made, one to determine the movements of both groups and the other to sum the number of live zombies at the end of each game. Once applied, the genetic algorithm would provide the most efficient plan for the humans to fight off a zombie infestation. After 7 generations of 200 and 500 iterations, data was collected on the behavioral patterns of the zombie and human agents to determine whether the idea of cooperation was displayed by either of the two groups of intelligent agents.

Findings and Conclusions

It is not the individual components of a complex system that make it uniquely adaptable, it is the adaptability of all the components working together as one that gives rise to a fascinating behavior that emerges from the system. The ultimate goal of the research was to test whether the intelligent agents could simulate a cooperative behavior, could they work together, without being programmed to do so. The idea of cooperation was prevalent throughout the study, between the human and zombie agents, once the weighted value for each was assigned. The researcher concluded that both groups of intelligent agents, zombies and humans, exhibited cooperative actions and that the notion of ALife can be simulated.

SENSITIVITY OF INTERLEUKIN-2-TREATED HUT 78 CELLS TO ANTITUMOR DRUGS THAT INHIBIT DNA TOPOISOMERASE I OR DNA TOPOISOMERASE II

Paul D. Foglesong, Ph.D. and Varun Tatineni, MA

Purpose of Study

The purpose of this study was to determine whether IL-2-treated HuT 78 cells are more sensitive than untreated HuT 78 cells to antitumor drugs that inhibit DNA topoisomerase I or DNA topoisomerase II.

Rationale and Significance

HuT 78 is an established human T cell leukemia/lymphoma cell line that expresses a high affinity receptor for interleukin-2 (IL-2). We previously observed that the activities of both DNA topoisomerase I and DNA topoisomerase II were greatly enhanced following treatment of HuT 78 cells with IL-2 in three concomitant peaks at 0.5, 4, and 10 hours following IL-2 treatment. Therefore, we investigated whether these enzymes were more sensitive to their antitumor drug inhibitors following IL-2 treatment in order to assess whether the enhancement of enzyme activity might translate into therapeutic procedures for leukemias that would combine IL-2 and antitumor drugs.

Description of Methodology

HuT 78 cells were grown in Iscove's modified Minimal Medium supplemented with 10% fetal bovine serum. Cells were treated with 1,000 international units of IL-2, and the percentage of viable cells was monitored for 48 hours following treatment with IL-2 by measuring trypan blue exclusion using a Bio-Rad TC-10 automated cell counter. The sensitivities of the cells to the following antitumor drugs (targets) were measured: 0.25 nM topotecan (DNA topoisomerase I), 1.0 micromolar etoposide (DNA topoisomerase II α and DNA topoisomerase II β), and 10 micromolar merbarone (DNA topoisomerase II α > DNA topoisomerase II β). Antitumor drugs were either added at the same time as IL-2 or at 0.5, 4, and 10 hours after IL-2 treatment when the catalytic activities of the enzymes were optimal. Negative controls were performed using addition of solvents for the antitumor drugs. The results were reproduced and analyzed statistically.

Findings and Conclusions

Ninety percent of the cells were killed by each of the three antitumor drugs within two days. There was no statistically significant difference in killing of untreated and IL-2-treated HuT 78 cells by any of the three antitumor drugs.

APPAREL SIZE STANDARDS WITHIN THE FASHION WORLD

Jenny N. Gomez, McNair Scholar and Joleen Beltrami, Ph.D.

Purpose of Study

The intent of this study was to examine the theory of standardized clothing within the fashion industry. Moreover, this study investigated the factors of: Style, Fabric, and Store Category. This study also examined these factors and their statistical influence on the apparel size standard developed in the study.

Rationale and Significance

An apparel size standard is significant for consumers and department stores. Inconsistencies within clothing sizes are common within the fashion industry. Confusion of apparel sizes can result in improper fit for purchasers, which leads to financial losses for stores when garments are returned as well as discouraging future purchases (Chun-Yoon & Jasper, 1995, p. 430). It is known that manufacturers follow different standards according to their wishes (Chun-Yoon & Jasper, 1995). As an outcome of the absence of garment size labeling information, “There is evidence that stresses during shopping can lead to shoppers questioning the accuracy of their body perception...which has led to some people grossly overestimating the size of certain body sites (such as waist and hip size) when compared to objective measurements, which can lead to body dysmorphic disorder” (Kennedy, 2009, p. 513-514).

Description of Methodology

This study emphasized measuring the waist lengths of size 32, black-colored male dress pants and size 12, black-colored female dress skirts, which fit roughly at the natural waist of an individual. These garments were selected from ten stores which target various income levels. The stores were categorized as “Designer/Bridge”, “Moderate/Better”, and “Off-Price/Discount” and were selected from the U.S. Equal Employment Opportunity Commissions’, *High End Department Stores, Their Access and Use of Diverse Labor Markets: Technical Report*. 18 female and 18 male garments were selected within the following styles: Formal wear, Business wear, and Casual wear. A measurer was assigned to measure pants, followed by skirts; while another measurer would be assigned to measure skirts first, then pants. A measuring tape was used to measure the garments, to the nearest 1/8 inch. Analysis of Variance investigated differences among the means of the pant waist measurements. Simple linear regression was used to describe the size of the garments as a function of price. Standard size waist length comparisons were made to the, *Body Measurements for the Sizing of Women’s Patterns and Apparel*, *Body Measurements for the Sizing of Apparel for Young Men (Students)* and *Size Variation in Women’s Pants*.

Findings and Conclusions

This study found that the waist length of size-twelve skirts sold within the San Antonio region, on average, match the waist length established by the National Institute of Technology. The waist length of pants size thirty-two for men sold within the San Antonio region, on average are below the US size standard of 34 inches. The researcher found that in general *Price* alone did not affect the average waist length of pants nor skirts. Conversely, the factors *Store*, *Style*, *Store*Style* and *Style*Fabric* had a significant effect on the waist length of the pants. Factors *Store*, *Store*Style* and *Store*Fabric* had a significant effect on the waist length of the skirts. The study indicated that the waist length of formal pants purchased at Designer/Bridge stores, casual pants purchased at Off-price/Discount and at Designer/Bridge stores, on average, are the same and are the widest. Business pants sold at Off-Price/Discount stores had the smallest average waist length. Wide waist lengths are not exclusive to high price stores, nor are narrower waist pants exclusive to low-price stores. Formal pants made of stretch material and casual pants made of non-stretch material have the largest waist lengths; business pants made of non-stretch material have the smallest average waist length. The waist length of business skirts purchased at Designer/Bridge stores and formal and business skirts purchased at Off-price/Discount stores, on average, are the widest. Again, the most expensive stores are not necessarily the ones with the widest skirts.

IDENTIFICATION OF REGULATED GENE SEQUENCES DURING REGENERATION IN LUMBRICULUS VARIEGATUS

Mariana Gonzalez, Biology Student, Pompeyo Quesada, Biology Student, and
Veronica Martinez-Acosta, Ph.D.

Purpose of Study

Regeneration recapitulates the events of early development in adult tissues. *Lumbriculus variegatus*, an aquatic oligochaete is an ideal model for regenerative studies. One of the major hypotheses in our lab is that regenerative processes are orchestrated in an anterior-posterior fashion beginning with the expression of developmental genes in the newly regenerating head. Recent experiments in our lab have demonstrated that *Lumbriculus variegatus* differentially expresses the early developmental signal, β -catenin, and other regenerative proteins, like MP 66 in regenerating head tissue (Zoran and Martinez, 2009). This data suggests that *L.variegatus* may utilize the head as an organizing center for regeneration. Thus we hypothesize that regenerating head or developing anterior wound blastema is sufficient to induce later regenerative stages or maintain regeneration within the original worm segment.

Rationale and Significance

This proposed study will develop our understanding of the cellular mechanisms involved during Lumbriculid regeneration. The genetic programs utilized by *Lumbriculus* during regeneration are likely those utilized by other invertebrate and vertebrate systems, thus we believe that these experiments will have implications for the development of replacement therapy treatments in vertebrate/human studies. Moreover, the genetic tools developed with this project will support the use of *Lumbriculus variegatus* as a premier model system for investigation of cellular and molecular regeneration.

Description of Methodology

Genomic DNA was extracted from 10 non-regenerating worm fragments. Primer pairs were generated using the databases, Wormbase.org and NCBI primer blast, respectively for *C.elegans* bar-1 and *D. melanogaster* armadillo. Polymerase chain reaction was performed using MangoTaq Mix (Bioline). DNA electrophoresis of primer products was carried out a constant voltage (120V) for 30min.

Findings and Conclusions

Our research represents the initial attempts at identifying gene sequences that are up-regulated or down-regulated in expression during regeneration. We have isolated two DNA fragments using degenerative primer sets from *Caenorhabditis elegans* and *Drosophila melanogaster*, for beta-catenin. The degenerate primers were designed against bar-1 (*C.elegans*) and armadillo (*D.mel*). Sequence analysis of the two fragments will be compared to homologs in *C.elegans*, *D.melanogaster*, mouse, and humans. This study will lay the ground work to study regeneration at the genetic level for this unique model system.

FLAVANOIDS PREVENT INFLAMMATION IN THE FRONTAL LOBE OF THE CEREBRAL CORTEX, HIPPOCAMPUS, AND AMYGDALA OF AN ANIMAL MODEL OF HUMAN INSULIN-DEPENDENT DIABETES MELLITUS

Muraya L. Gonzalez, MS, Sara E. Mahoney, Ph.D., and Carlos A. Garcia, Ph.D.

Purpose of Study

The purpose of this study was three-fold i) to investigate the effect of flavonoids on the inflammatory status of the amygdala, hippocampus, and cerebral cortex, ii) to determine if cytokine changes are linked to neurobiological alteration and, iii) to determine if inflammation may be a precursor to cytokine-mediated cell signaling pathways after three months of hyperglycemia in an animal model of insulin-dependent diabetes mellitus.

Rationale and Significance

Humans with diabetes mellitus (DM) exhibit cognitive deficits compared to age matched non-diabetics. Diabetes has been associated with increased risk of stroke, cognitive impairments, and Alzheimer's disease. As early as 1963, investigators described a condition of diabetic encephalopathy in the brain of long-term diabetes, suggesting abnormal glucose-insulin homeostasis impacts brain structure and function. Clinical researchers have reported patients with DM have smaller brain volumes when compared to non-diabetics. Inflammation is an immunological response by cells that have been injured that may lead to apoptosis. Inflammation attempts to restore proper tissue function. However, tissue inflammation can become a chronic condition if repair mechanisms fail. Cytokines are mediators of the inflammatory cascade and play key role in cellular communication. Studies in promoter-driven transgenic mice have reported an increase in central nervous system (CNS) inflammatory molecules can directly induce a spectrum of cellular alterations resulting in neurological diseases. Flavonoids are compounds found in plants that have been recognized for potential anti-inflammatory activities. One of these flavonoids is the antioxidant quercetin (Q). The primary goal of this work is to test the hypothesis that quercetin ameliorates the inflammation associated with diabetic encephalopathy. As well as determine if inflammation is a precursor to cytokine-mediated cell signaling pathways that can lead to apoptosis.

Description of Methodology

The pro-inflammatory cytokines Tumor Necrosis Factor- α (TNF- α), and interleukin 6(IL-6), plus the anti-inflammatory cytokine interleukin 10(IL-10) were measured in the amygdala, hippocampus and the frontal lobe of the cerebral cortex of streptozotocin-induced diabetic Long Evans rats(DDM model). Age and sex matched rats (n=4) were separated into groups: control, diabetic, and diabetic Q-fed. Three months after the onset of diabetes, all groups were sacrificed and the different brain regions were dissected using the stereotaxic atlas of Paxinos and Watson. The cytokine concentrations were measured by enzyme-linked immunosorbent assays in tissue homogenates.

Findings and Conclusions

The major findings of this study include i) hyperglycemia caused inflammation in the amygdala demonstrated by a significant increase in IL-6 ($p < 0.005$), TNF- α ($p < 0.05$) and decrease in IL-10 ($p < 0.005$), in the hippocampus there was a significant increases of IL-6 ($p < 0.005$) and TNF- α ($p < 0.05$), and in the frontal lobe of the cerebral cortex shown by a significant increase in TNF- α ($p < 0.05$). ii) quercetin has a preventative effect on inflammation by decreasing levels of TNF- α in the three sections of the brain and increasing levels of IL-10. This study provides evidence that inflammation may be a precursor to cytokine-mediated cell signaling pathways leading to apoptosis through stimulation of the TNFR1 death receptor. This study also suggests cytokine changes are linked to neurobiological alterations that may result in behavioral deficits in diabetics. This data provides useful information to the development of novel drug therapies for the millions of diabetics who are at risk of suffering from cognitive disturbances.

INCREASED INTESTINAL GRANZYME B EXPRESSION MAY BE KEY TO SIV PATHOGENESIS IN ASIAN NON-HUMAN PRIMATES

Alexander Hutchison, Ph.D., Joern Schmitz, MD, Angela Major, and Dorothy Lewis, Ph.D.

Purpose of Study

To determine if there is differential expression of granzyme B in the intestinal lamina propria of natural and experimental simian hosts of SIV.

Rationale and Significance

In striking contrast to Asian non-human primates, which include Rhesus Macaques (RM) and Pigtail Macaques (PM), chronically SIV-infected African non-human primates including African green monkeys (AGM) and sooty mangabeys (SM) have a stable, non-pathogenic disease course. Recent evidence suggests that the primary difference between the two infection models is an SIV-mediated breach of the intestinal mucosa in the Asian species that does not occur in the African animals. Following the “gut breach”, microbial products (e.g. LPS) translocate and induce systemic immune activation. To examine possible mechanisms responsible for the gut breach, we determined 1. whether the colonic lamina propria (LP) of the Asian monkeys contained more granzyme B (GrB) producing CD4 T cells than did that of the African species, and 2) whether acute SIV infection of RM colonic LP increased the expression of GrB. GrB is a serine protease capable of disrupting mucosal integrity by damaging extracellular matrix proteins of the intestinal epithelium.

Description of Methodology

For comparative determination of GrB expression, colon sections from SIV naïve RM, PM, AGM, and SM were stained for CD4, CD3, and GrB and the number of CD4+/GrB+ and CD3+/GrB+ cells were counted and normalized to the total number of nuclei in the LP. For the post-infection experiment; 9 RM were intravaginally inoculated with SIVmac239 and sacrificed at day 3, 7, or 14 post-infection and compared to three uninfected controls. The colonic LP was assessed for expression of GrB and CD3. Plasma LPS concentrations were assessed by ELISA.

Findings and Conclusions

Unexpectedly, we observed no CD4 expression in the duodenal and colonic LP of AGM. We found that the LP of both RM ($2.79 \pm 0.19\%$) and PM ($2.90 \pm 0.72\%$) contain significantly higher proportion of CD4+/GrB+ cells than do AGM ($0.04 \pm 0.04\%$ using the number of CD3+ cells to estimate the number of CD4+ cells) and SM ($0.32 \pm 0.11\%$) ($P < 0.01$). When contrasted with baseline values, there was a significant increase in the proportion of GrB+ cells in the colonic LP at 7d post-infection ($7.27 \pm 0.96\%$ vs. $2.46 \pm 0.64\%$, $P = 0.018$). There was a trend towards greater plasma LPS concentrations at each time point post-infection when contrasted with uninfected control animals. Both phenotypic differences, i.e. the reduced GrB expression in memory CD4 T cells in the colonic LP, and the lack of CD4 expression in the duodenal and colonic LP may serve as innate protective mechanisms against SIV-mediated damage to the mucosal immune system and could be potential targets for future therapies in HIV+ humans.

DOES TOLERANCE TO BENZODIAZEPINES DEVELOP WITH REPEATED BENZODIAZEPINE ADMINISTRATION IN RATS DISCRIMINATING MIDAZOLAM?

Miguel Ibarra, Biology Student, Ana C. Vallor, Ph.D., and Lisa R. Gerak, Ph.D.

Purpose of Study

The goal of the current study was to determine whether tolerance develops to the discriminative stimulus effects of benzodiazepines. These effects are predictive of subjective effects in humans, which have been shown to lead to continued therapeutic use and abuse of benzodiazepines.

Rationale and Significance

Benzodiazepines are effective in treating a number of disorders, including anxiety and insomnia; although adverse effects, particularly tolerance and dependence, limit their clinical use. Current medical guidelines recommend restricting benzodiazepine use in order to prevent the development of tolerance and dependence, although prevalence of long term use is increasing.

Description of Methodology

The reliability and pharmacological selectivity of drug discrimination was exploited to examine the development of tolerance to benzodiazepines and their discriminative stimulus effects. Drug discrimination is a laboratory technique in which animals may be trained to identify and respond to selectively trained drugs. In this case, rats were trained to discriminate 0.32 mg/kg of the benzodiazepine midazolam. Five rats discriminated 0.32 mg/kg of the benzodiazepine midazolam while responding under a fixed-ratio 10 schedule of food presentation. The fixed ratio 10 schedule of food presentation helps to ensure that the rats are in fact accurately discriminating their training drug, rather than guessing during testing procedures. Dose-effect curves were generated for midazolam before and after 3 days of treatment with 3.2 mg/kg of the benzodiazepine flunitrazepam, which was administered 8 hr. and immediately before sessions. The dose-effect curves help to determine whether or not tolerance has in fact begun to develop to the training drug of 0.32 mg/kg midazolam.

Findings and Conclusions

Tolerance appears to be developing to flunitrazepam, as evidenced by decreased responding on the midazolam lever after 3 days of treatment and reduced rate-decreasing effects of large doses of midazolam. Changes in the potency of midazolam to decrease response rate are not accompanied by similar changes in its potency to increase midazolam-lever responding, perhaps suggesting that tolerance does not develop equally to these dependent variables. Future studies will alter treatment conditions of flunitrazepam, particularly increasing the duration of treatment, to test the generality of these findings. To the extent that discriminative stimulus effects predict subjective effects, the differential development of tolerance to these effects, as compared to other effects, might reduce the likelihood that patients or abusers increase the treatment dose to maintain detectable benzodiazepine levels.

COLLABORATIVE LEARNING AND ITS EFFECT UPON STUDENT ACHIEVEMENT IN COLLEGE GEOMETRY

Paul F. Messina, Ph.D. and Stephen Nesloney, Mathematics Student

Purpose of Study

We examined student achievement in College Geometry based upon a comparison of methodologies for two separate learning environments, traditional lecture ($n = 204$) versus collaborative learning ($n = 213$). Multiple class sections taught by the same teacher were utilized in order keep the possible confounding variables to a minimum. Our hypotheses are as follows:

1. There is no tendency for the final grade of the students completing a course in College Geometry using the collaborative learning approach to be significantly different than those students who complete a course in College Geometry using a traditional lecture approach.
2. The final grades of the students completing a course in College Geometry using the collaborative learning approach are significantly different than those students who complete a course in College Geometry using a traditional lecture approach.

Rationale and Significance

This study supports and expands the results of recently published articles, which focus on the relationship between mathematics achievement and various teaching strategies. Based upon our findings we may now ensure that appropriate teaching strategies are put in place in the target course to maximize student success at the University of the Incarnate Word.

Description of Methodology

The research used an ex-post facto design and the Mann – Whitney U Test to determine whether the two group medians are statistically significant. In this study our sample size was $n = 417$ and included data from twenty separate sections collected over 5 semesters of a college geometry course which utilized both variations of instruction. We compiled data from a single professor's class in a single subject to help eliminate as many confounding variables as possible and concentrate our efforts on teaching technique. This enabled us to quantify the differences between the scores of the classes and determine whether this teaching style has a positive, negative or neutral impact on the students' ability to learn.

Findings and Conclusions

The analysis shows that the final course grade earned by those students who completed MATH 1306 – College Geometry using the collaborative learning approach at our university are statistically different ($p < 0.05$) to the final course average earned by those students completing MATH 1306 – College Geometry using the traditional lecture approach (85.420 versus 83.220). We must be mindful however to recognize that there are a multitude of reasons that lead to student success in the classroom. This study examined the employed teaching style in an effort to evaluate its effectiveness for those students who completed College Geometry at this institution. Future research will expand these results to other course offerings in an effort of generalize these results across the mathematics curriculum at our university and at other similar institutions of higher learning.

ASSOCIATION BETWEEN ALTERNATIVE HOMEWORK ASSESSMENT METHODOLOGIES AND STUDENT ACHIEVEMENT IN COLLEGE MATHEMATICS

Paul F. Messina, Ph.D. and Annalisa Moore, McNair Scholar

Purpose of Study

We examined student achievement in college mathematics based upon a comparison of the homework methodology used (online versus traditional paper and pencil) and examination scores for each student tested in the target courses. The use of the Mann – Whitney U Test allowed us to identify the presence or absence of a significant difference between the examination scores of those students required to complete their homework assignments using a traditional paper and pencil method and those students who used the online homework method. Our hypotheses are as follows:

1. There is no difference between examination scores based upon the homework methodology employed in the course.
2. There is a statistically significant difference in examination scores based upon the homework methodology employed in the course.

Rationale and Significance

This study supports and expands the results of recently published articles, which focus on the relationship between mathematics achievement and homework methodology. Based upon our findings we may now ensure that appropriate homework assignment procedures are put in place in the target courses to maximize student success at the University of the Incarnate Word.

Description of Methodology

The research used an ex-post facto design and the Mann – Whitney U Test to allow us to identify the presence or absence of a significant difference between the examination scores of those students required to complete their homework assignments using a traditional paper and pencil method and those students who used the online homework method. In this study our sample size was $n = 195$ (Online = 144 and Traditional = 51). We consolidated the homework grades and the associated examination grades from five separate sections of an Introduction to Probability and Statistics course conducted over an eight semester time frame. The course materials were identical except for the homework methodology used in the course.

Findings and Conclusions

The analysis shows that the median examination scores earned by those students who utilized the online homework methodology are statistically different ($p < 0.05$) to the examination grades earned by those students using the traditional paper and pencil homework assessment (96 versus 87). While this speaks well of the utilization of online homework assessments at our institution for the target course, we must be continue to be mindful to recognize that there are a multitude of reasons that lead to student success in the classroom. This study examined the homework methodology utilized in a college mathematics course in an effort to evaluate its effectiveness. Future research will expand these results to other course offerings where online homework systems are becoming increasingly popular.

PUBLIC HEALTH POLICIES AND MANAGING BIOTERRORISM

Annalisa Moore, McNair Scholar and Zhanbo Yang, Ph.D.

Purpose of Study

The potential for a country to experience a bioterrorism attack is growing. The purpose of this research is to mathematically model the potential effects of the smallpox virus, avian flu, and swine flu on a population. This type of information will provide authorities and public health officials with predictions of possible outcomes dependent on the policy procedures that are chosen and implemented.

Rationale and Significance

Since the potential for an attack of this nature is growing and advancements are being made in genetic engineering that has proven to make various infectious agents more transmittable and potent, it is vital that public health officials are prepared to protect the population. This research will allow officials to observe what policies are most effective and minimize the harmful effects experienced by the population.

Description of Methodology

The mathematical models are SIR types of models that compartmentalize individuals in a closed population into various subpopulations such as susceptible(S), infected (I), and removed (R). Through the use of differential equations, mathematical models can be created to simulate the effects of an infectious agent on a closed population that mixes homogeneously. This study used SIR and SEIR models that included infection rates, vaccination rates, removal rates, and incubation periods. The data was also used to calculate the reproductive ratio of each agent, determining whether or not an epidemic would occur in a population. By observing the effects of various rates on the population, public health officials can conclude what policies are most effective.

Findings and Conclusions

The results of this research showed that the number of initially infected individuals had little effect on the severity of the outbreak. Both the removal rate and vaccination rates can be used to reduce the maximum number of individuals infected. The vaccination rate had the largest influence on reducing the infected individual, and all three infectious agents produced a reproductive ratio that indicated the potential for an epidemic to occur in the population. The mathematical modeling of the smallpox virus, avian flu, and swine flu shows that these potential bioterrorist agents could be devastating to a population, resulting in an epidemic. Measures such as vaccination and removal policies must be implemented by public health officials in order to control an outbreak of this nature. Proactive policies, such as vaccinations, are shown to be most effective in minimizing the harm to the population. However, a combination of both proactive and reactive measures should be implemented in order to greatly reduce the number of infected individuals. Government and state officials need to take the proper steps in beginning to further prepare populations for attacks of this nature.

SKIN SAFE SUNSCREENS

Shannon N. Samples, McNair Scholar, Joleen Beltrami, Ph.D., and Jesus Cuellar Fuentes, Ph.D.

Purpose of Study

The purpose of this study is to educate college students about affordable Environmental Working Group (EWG) recommended sunscreens that can be found at a big-box discount store in order to encourage dermatologically safe sun protection and sun safety. The research question is 'Are EWG recommended sunscreens significantly different than non-EWG recommended sunscreens when analyzed based on unit price and personal preference?

Rationale and Significance

In 1978, the Food and Drug Administration (FDA) launched a drive to regulate sunscreens for safety of ingredients (Sunscreen Exposed, 2011). Thirty-four years later, the FDA is still working on establishing regulations. Many sunscreens sold today contain hormone-disrupting compounds or lung-damaging particles (Sunscreen Exposed, 2011). Many of these are FDA approved but are not EWG recommended and are sold in the US. Information about which sunscreens are the safest for skin is crucial information for people when making educated choices about the products they choose to buy.

Description of Methodology

The researcher took a representative sample size of thirty female college students between the ages of eighteen and thirty to quantify the importance of certain factors relating to the likability of sunscreen. Participants completed a survey on sunscreen characteristic preferences. Participants then completed a blind test of preferences using six sunscreen samples. Each sample was rated for characteristics such as feel and smell and ranked in order of preference. The researcher then informed the participants of the EWG rating for the six sunscreens. Participants were asked to rank their preferences after knowing the EWG rating. Participants had the option of not changing their original ranking. The Minitab statistical software package was used to analyze the survey results that were entered into Excel. A Chi-Squared Test of Homogeneity was utilized to interpret the contingency table for the survey and sensory experiment data output. A Chi-Squared Test of Independence was used to interpret the contingency table for the rank experiment data output. An ANOVA Test was used to interpret the unit price data output. Through the administration of a survey and experiment, the researcher analyzed individuals' preferences of sunscreens from a random sample of college students to see if they prefer EWG recommended sunscreens, non-EWG recommended sunscreens or if both types of sunscreens cater to their personal preference.

Findings and Conclusions

EWG recommended sunscreens are not significantly different than non-EWG recommended sunscreens when analyzed using the Hypothesis Test for Regression based on unit price. The results of the study were that there was not a difference in the preferences in the survey data but there was in the experiment data between trial one and two because the participants were informed of the EWG ratings. In Trial I before participants were informed about the EWG score the participants favored non-EWG recommended sunscreens but in Trial II participants favored EWG recommended sunscreens. The results of the survey and experimental data show that once participants are informed about EWG rating it is possible for them to change their rankings of sunscreens from non-EWG recommended to EWG recommended sunscreens. This possibility of change leads to an optimistic hope of educating UIW students about EWG recommended sunscreens in a campaign to encourage sun safety and protection. Further research can be performed to see what is the best media and approach to advertise EWG recommended sunscreens in order to promote sun safety and protection.

THE PATH TO PLATINUM: LEED CERTIFICATION FOR THE UIW SOLAR HOUSE

Alison F. Whittemore, Ph.D. and Daniel Potter, BS

Purpose of Study

This qualitative descriptive study summarizes the work of the Engineering Management student teams as they developed the design of the UIW Solar House to qualify for the highest level of LEED (Leadership in Energy and Environmental Design) certification from the USGBC (US Green Building Council).

Rationale and Significance

LEED certification is the global benchmark for measuring building sustainability. Certification is a rigorous process that provides proof that the structure was built to high industry level standards in the five areas of a) sustainability of the building site, b) efficient use of water, c) efficient use of energy, d) use of sustainable materials and resources, and e) indoor environmental quality. The student teams designed the House specifically with LEED requirements in mind. As part of the design process, the students applied their scope of knowledge garnered during the Engineering Management degree path, which included classes in financial planning, management theory, structural design, computer drafting, business law, and accounting. The project provided students with real world experience and hands on applications.

Description of Methodology

The House design parameters were based on the certification templates provided by the USGBC LEED website. Students also consulted with a certified structural engineer and officials from UIW, Alamo Heights, San Antonio, Bexar County, and multiple contractors to ensure compliance with building codes and proper architectural design. This presentation is a descriptive summary of the certification process. It is derived from multiple sources—the LEED template data, student reports on their research challenges, my personal notes from the class, and daily records of the construction on the Solar House.

Findings and Conclusions

The Solar House was successfully built and certified as LEED Platinum. The House was also honored by the San Antonio Green Building Council for its innovative design. It meets the accessibility requirements for the Americans with Disabilities Act (ADA). Students demonstrated that certified sustainability design is a realistic goal for structures on this campus. They also learned that the basic structural engineering of a building was one of the easiest aspects of the project. Students gained experience with, and great respect for, the massive amount of paperwork, time, and patience that were associated with zoning, code compliance, meetings, regulations, permits, approvals, permissions, and so on that were involved in creating even a small structure. The resulting informational foundation and the designs that were developed during this project will be useful templates that will smooth the path for future sustainable projects on campus.

SCHOOL OF MEDIA & DESIGN

DISNEY: EXPOSING THE MYTH

Ralonda R. Green, McNair Scholar, and John Perry, Ph.D.

Purpose of Study

The purpose of this research was to evaluate Disney's media outlets (television, Website, and YouTube site) in relation to its market success and cultural impact on its American audience. By using both propaganda techniques (bandwagon, testimonial, and transfer) and Jacques Ellul's definition of myth, the researcher analyzed Disney's use of stereotypes and propaganda to define Disney's central mythology and discover its real message to its audience.

The research questions that guided the researcher's study are as follows:

1. What is Disney's main mythology and does it contribute to its influence and market success?
2. Could using Ellul's definition of myth and evaluation of the three propaganda devices help in discovering and defining Disney's mythology or mythologies?
3. If Disney's mythology is discovered, what does its mythology mean for its family-based audience (parents and young audience)?

Rationale and Significance

This study provides a different approach to propaganda analysis and its effects on American families regarding family-based entertainment. It offers both mass communication and business majors a better understanding of media messages in advertising, and insight into its implications on young audiences. It illustrates Disney's market segmentation in terms of propaganda use. Finally, it offers new understanding of propaganda awareness and encourages more dialogue for expanding media literacy beyond the university level.

Description of Methodology

The researcher employed a qualitative design and critical approach in exploring Disney's media and propaganda use. Utilizing Ellul's definition of myth as a tool to analyze the programming available on the Disney channel, Website, and YouTube site, the researcher carefully coded the programming for the use of the three propaganda devices and stereotypes. Online comments and databases, and resources (Internet Movie Database and TV by the Numbers) were also used during this study for the collection of data.

Findings and Conclusions

Through observations of Disney's media outlets, several propaganda devices were identified as being strategic components of the programming and marketing tools used by Disney. The common themes/myths to the programming included: family-friendly idealism, individualistic idealism, and romance idealism. Utilizing Ellul's definition of myth with findings from exploring Disney media's relationship with the three propaganda devices helped uncover Disney's central mythology. Disney, in theory, uses these myths to capitalize on the children's entertainment market, and influence parents and families to purchase Disney products, especially music and any item linked to current Disney personalities (child stars). However, there is further study that needs to be done in the areas of rap music, romance, and parent-child relationships portrayed in Disney/other family-centered media.

ACQUISITION, USE, AND CARE OF ACADEMIC REGALIA

Carla J. Anderson Perez, Ph.D.

Purpose of Study

How do university faculty/administrators acquire, use, and care for their academic regalia? Do differences exist between textile/apparel faculty/administrators and those from other disciplines in these practices? Are there regalia features that are appreciated or disliked; are there some features faculty/administrators would like to eliminate or add?

Rationale and Significance

After a thorough review of literature in the field of textile/apparel, no studies specifically focused upon academic regalia were identified. Because this is a traditional and widely-used costume it merits study. University faculty/administrators will benefit from knowing the acquisition options available to them and the factors affecting regalia use and care in order to promote longevity to this significant purchase. It would be expected that textile/apparel faculty/administrators would more likely be informed and aware of factors of textile products, such as academic regalia. Manufacturers need to know what acquisition methods are used and what regalia features are valued by their product's ultimate consumers (university faculty and administrators) in order to be successful in this competitive and limited market sector.

Description of Methodology

Faculty/administrators of all disciplines at five public/private universities in San Antonio and members of the International Textile and Apparel Association (the major professional organization for textile/apparel university faculty) were invited to participate by e-mail. The questionnaire was available on The Internet. After a pre-set time period, the study was closed and results collected; 158 volunteered to participate in the study. Data were entered into and evaluated by SPSS. A follow-up study was conducted: 43 (30.4%) offered to let the researcher examine their regalia and take photographs of unique features. These photographs were compared to the written data for verification purposes.

Findings and Conclusions

Of the 158 respondents, 126 (78.7%) held a Ph.D., 18 (11.4%) a Master's, seven (4.4%) an Ed.D. six (3.8%) a MFA, one (0.6%) a Bachelor's; 53.2% (n=84) were female and 47.1% (n=74) were male. A majority were faculty (n=128, 81%) were several administrators (n=82, 53.2%). Most did not know their gown's fiber nor fabrication (n=92, 61.7%). All knew their gown's color. Most (n=74, 51.0%) wore tams, 56 (38.6%) mortar boards, and nine (6.2%) befeater headgear. Most (93.8%) indicated a discipline color. Most (n=89, 66.9%) had worn their regalia within the prior six months. Two thirds (n=104) purchase regalia. Nine (6.2%) rented. Most kept regalia in their offices (n=84, 64.1%) or homes (n=37, 28.2%). Of the 96 who answered the care method query, most (n=61, 46.6%) professionally dry-cleaned their while fifty-seven (43.5%) indicated they did nothing. Statements about how participants felt when wearing regalia were wide-ranging. Of 21 positive remarks, most said "professional". Of the 13 negative comments, "silly" was cited by six. Others related to physical comfort citing being "too warm" (n=6). Textile/apparel respondents were found to be accurate on fiber content, fabrication, and care methods (n=14, 8.8%) queries. There was no difference in color (alma mater and discipline) awareness and accuracy among the disciplines represented in this sample. In the follow-up study it was observed that university faculty/administrators were acutely aware of their colors (alma mater and discipline). Many conveyed specific anecdotes about their experiences that confirmed their personal connection to their alma mater and discipline.

SCHOOL OF PHYSICAL THERAPY

FACTORS IN APTA PROFESSIONAL MEMBERSHIP AMONG CLINICAL INSTRUCTORS AND CENTER COORDINATORS OF CLINICAL EDUCATION

Lynne C. Hughes, Ph.D., PT, OCS, Harriet Lewis, PT, MS, Lois Stickley, Ph.D., PT, and Julie DeVahl, MS, PT, OCS

Purpose of Study

The purpose of this study was to explore the factors affecting membership in the APTA by clinical instructors (CIs) and center coordinators of clinical education (CCCEs), including perception of the value of membership, methods employed to encourage student participation, and level of involvement by the CI and CCCE in their professional association.

Rationale and Significance

Having a role model or mentor has been shown to be important in professional development and socialization. CIs and CCCEs are viewed as mentors by students and can influence the amount of value that new professionals will place on association membership.

Description of Methodology

The study's subjects were CIs and CCCEs (n=190) that supervise Texas PT and PTA students. An online survey on the factors affecting membership in the APTA was created using SurveyMonkey.com. The survey consisted of multiple choice questions and written-response items. The survey was piloted by 6 PT CIs in Texas to solicit feedback prior to disseminating the survey. Subjects were recruited by email invitation through the PT and PTA programs and a general announcement in the Synerg-E-Mail, an electronic newsletter of the TPTA. The SurveyMonkey filters were used to categorize responses and Chi-square analysis was used to determine significant differences ($p < 0.05$).

Findings and Conclusions

A total of 190 (114 CIs, 60 CCCEs, 3 not involved, and 13 other) PTs (172) and PTAs (18) participated in the survey with 173 (91.1%) being from the state of Texas. 123 (64.4%) subjects reported having a certification or being a credentialed CI from the TX Consortium for Physical Therapy Clinical Education (71), the APTA (39), or other (13). The majority (174, 91.6%) reported working full-time and had less than 20 years of practice (119, 63%). The majority were Caucasian (85.7%) with participants of both Hispanic (8.5%) and Asian (5.3%) ethnicity. A majority of participants (131 or 68.9%) reported being members of APTA and most were section members (104, 80% of members). The top three reasons given for being a member are: 1) Interest in the profession, 2) Professional duty, and 3) Access to journals and publications. The top 3 reasons why respondents were not a member were: 1) Cost of national dues are too expensive, 2) Cost of chapter dues are too expensive, and 3) Benefits are not important enough to spend the money. Only 44 (23.4%) have served in a leadership role in their district, state, or national level. Participants encouraged student participation in APTA, Chapter, and District activities in a variety of ways, most commonly by being a role model and mentor. A significant difference ($p < .0001$) was found between the responses of members and nonmembers when asked "How important is it for a CI/CCCE to be a member of the APTA?" and "How important is it for PT and PTA programs to only select sites where the CCCE and CI's are members of the APTA?" The responses were on a 1-7 Likert scale. The most common response to the importance of CI membership was 7: Very Important, (mean of 4.95) from members, and from nonmembers the most common answer was 1: Not at all Important, (mean 1.92). On the importance of programs selecting sites where the professionals are members, members chose 5 (mean 3.53) and nonmembers chose 1 (mean 1.03). Clinical Relevance: CI and CCCE members of the association felt membership was a valuable criterion for serving as a CI or CCCE and for site selection, while non-members did not identify membership as a valuable criterion. To increase the percentage of CIs and CCCEs who are association members, efforts should be made to improve their cost-benefit perceptions of the association.

BUILDING COMMUNITY THROUGH INTERPROFESSIONAL PRACTICE DURING RELIEF WORK IN HAITI: AN ETHNOGRAPHIC STUDY

Susan G. Klappa, PT, MA, Ph.D. and Rebecca Crocker, PT, DPT

Purpose of Study

The purpose of this study was to explore the culture of short-term disaster relief work (DRW) and ideas regarding social responsibility among health care professionals who volunteered in Haiti. Central research questions were: 1) Why volunteer in Haiti? 2) What was the most rewarding experience? 3) How do you define social responsibility?

Rationale and Significance

Continuing professional development challenges physical therapists who are members of interprofessional DRW teams to work for a common purpose despite being from different nations during the crisis period of disasters.

Description of Methodology

Ethnographic methods used included data from interviews, focus groups, and journal reflections during five disaster relief work (DRW) experiences from three hospital sites in Haiti during 2010. A questionnaire was circulated to health care providers as further questions emerged. Participants (n = 45) represented a variety of health professions. Interviews were digitally recorded and transcribed. Notes from focus groups were also recorded. Member checking was used to determine that the researchers had correctly transcribed interviews before data were analyzed. Stories and comments were collected and coded independently by the researchers for dominant themes across all written responses. Common themes were then grouped by profession and then analyzed across all professions.

Findings and Conclusions

Participants were greatly affected by their DRW experiences. Some participants knew members of their cohort in Haiti; others knew no one until they arrived. In a period of 8 to 21 days, these professionals collaborated their expertise and community developed. Reasons volunteering in Haiti were well articulated by the participants. Participants recalled several experiences they classified as most rewarding. All participants were able to articulate a definition of social responsibility and how they live this core value on a personal, organizational, or societal level.

Relevance & Implications for PT include a sense of community developed with other healthcare providers from across the world and a desire to maintain personal, professional, or social connections with those whom the participants served in Haiti was also discussed.

RE-ENTRY EXPERIENCES AFTER DISASTER RELIEF WORK IN HAITI: A PREDICTION MODEL FOR COMPASSION FATIGUE

Susan G. Klappa, PT, MA, Ph.D.

Purpose of Study

Physical therapists and other health care workers have participated in disaster relief work after the 2010 earthquake in Haiti. Many volunteers were prepared for the work they did while abroad. Most were not prepared for the re-entry back to their everyday lives and practice of physical therapy back home. In Haiti, many PT providers were also facing extreme situations as they worked long hours and listened to the experiences of their patients. What is the influence of burnout and secondary trauma on compassion toward patients after re-entry home from Haiti? This mixed methods study investigated the lived experience of burnout, secondary trauma, and compassion satisfaction on physical therapists and other health care providers after returning home from participating in disaster relief work in Haiti.

Rationale and Significance

The re-entry phase home from Haiti was found to be difficult for the physical therapists in this study. Participants described having challenges demonstrating compassion to their patients back home after living the disaster relief experience in Haiti. The structure of re-entry to PT practice in the United States was characterized by periods of frustration, anger, guilt, and dissatisfaction, before being transformed by the experience and moving forward into a meaningful career and relationships back home. The ability to reflect on our experiences helps define us as professionals and allows us to bring hope to others as we find deeper meaning in our work as physical therapists. By better understanding the experience of re-entry after serving in disaster relief work, we can better anticipate the kinds of support needed for those who engage in this work.

Description of Methodology

Mixed methods included a PROQOL survey of health care providers who served in Haiti and phenomenological interviews of physical therapy professionals who participated in the survey regarding their re-entry experiences home after providing relief work in Haiti. The PROQOL provided a general sense of the challenges of re-entry for 90 health care providers on their compassion satisfaction after returning home, while the interviews provided a deep description of the experiences of 15 physical therapists. The PROQOL data were analyzed with SPSS 19. Interview transcripts were analyzed using the descriptive whole-parts-whole phenomenological approach described by Giorgi (1975, 1997) and Dahlberg, Drew, and Nyström (2002).

Findings and Conclusions

The PROQOL data revealed that burnout and secondary trauma influenced compassion satisfaction after re-entry home from Haiti. Greater exposure to secondary trauma in Haiti was correlated with greater burnout in Haiti ($r = .637, p < .001$). The more secondary trauma a clinician was exposed to in Haiti, the less compassion satisfaction was exhibited toward patients back home ($r = -.230, p < .001$). A negative correlation was also exhibited between the burnout a clinician was exposed to in Haiti and a lower compassion satisfaction score ($r = -.586, p < .001$). Regression analysis provided a model to predict who may be at risk for compassion fatigue after returning home from DRW.

Interview data revealed the essence of compassion satisfaction for physical therapists after participating in disaster relief work in Haiti was signified by three constituents: 1) feelings of dissatisfaction and stress; 2) redefining one's professional roles and 3) resolving compassion fatigue. Using creative coping strategies was a common theme described by participants to deal with the challenges of compassion fatigue, secondary trauma, and burnout.

TEACHING SOCIAL RESPONSIBILITY: CROSSING BORDERS INTO COMMUNITY ENGAGEMENT & ADVOCACY

Susan G. Klappa, PT, MA, Ph.D.

Purpose of Study

This study explored the experience of physical therapist students as they participated in an international service-learning opportunity in an impoverished region of the Dominican Republic. The purpose of the educational opportunity was to provide North American, Dominican, and Haitian student physical therapists with an international interprofessional clinical experience with physicians, nurses, physical therapists, and prosthetists. Pro bono services were provided in an area of the Dominican Republic (DR) with a great need for rehabilitation services. The hypotheses of this study were that North American, Dominican, and Haitian physical therapy students participating in a short-term international interprofessional service-learning immersion experience will: 1) Deepen their professional formation; 2) Increase awareness of health disparities and policy issues; and 3) Articulate a social responsibility action plan for becoming a change agent.

Rationale and Significance

International interprofessional experiences such as this community immersion experience help prepare therapists for differing roles, environments, and contexts for interprofessional practice.

Description of Methodology

Ethnographic methods were used in this study and included participant observation, interviews, and focus groups. Participants were Doctor of Physical Therapy students (n = 12) from the United States attending a Midwestern physical therapy school as well as Haitian (n = 6) and Dominican (n = 6) physical therapy students attending school in the Dominican Republic. Students provided therapy for five days in small teams supervised by therapy instructors from both the United States and the DR. Two physicians from the DR also assisted the team.

Findings and Conclusions

Student reports of their experiences were collected by oral narrative. Interviews were logged via an audio recorder for later review. Data analysis included coding for emerging themes, member checking, and conducting an external audit. Similar themes were identified among all three groups of students. Students learned many things about themselves and others. They reported improved self-confidence, improved creativity in treatment, increased awareness of links between health disparities and health policy, and a better understanding of their role as advocate.

Dominican & Haitian students met with professors & administrators at their school to develop an action plan to provide physical therapy clinical experiences for the batey community. American PT students felt empowered to return to the USA and examine health policies and advocate to decrease health disparity in their communities. Faculty from both universities deepened their commitment to work together to provide interprofessional experiences. All groups were able to describe a broader picture of health and wellness that was linked to social responsibility.

Students who participate on international interprofessional rehabilitation teams will likely develop a deeper personal concept of social responsibility, confidence in their abilities as an advocate, and respect of diversity than they would otherwise experience if only participating in typical clinical experiences. Students see themselves as advocates or change agents as a part of their professional roles.

SINGLE SESSION TREATMENT OF BILATERAL BENIGN PAROXYSMAL POSITIONAL VERTIGO

Chara Booker Rodriguez, PT, DPT, NCS, Brian P. Perry, MD, FACS, and Randal Otto, MD, FACS

Purpose of Study

The purpose of this case series report is to describe the treatment of bilateral benign paroxysmal positional vertigo (BPPV) in one treatment session. Another focus is to examine the efficacy rate of this treatment, recurrence rate of vertigo and any comorbid conditions present in 63 cases over a 10-year time frame (2002-2012).

Rationale and Significance

This study is significant because it explores possible causes for bilateral BPPV that can be addressed medically and it describes a treatment paradigm that is efficient and helps patients to recover from functional mobility limitations and uncomfortable symptoms faster, as well as planning for future care in the case of recurrence.

Description of Methodology

In this retrospective case series we reviewed the charts of 63 patients diagnosed by a physician with bilateral BPPV using the Dix-Hallpike maneuver and who were referred for physical therapy evaluation and treatment with an appropriate canalith repositioning maneuver (CRM) in an outpatient physical therapy clinic. Treatment included the administration of an appropriate CRM for BPPV for the patient-identified side with the most symptoms. The patients were asked to sit in an upright position with the head and neck in a neutral, upright position for 15 minutes. After this period of immobility, a second CRM was administered for the remaining side. The patient was instructed in a home exercise program consisting of the Brandt-Daroff exercises to perform as needed. The patient's medical charts were reviewed to collect the following data: patient age at time of the bilateral BPPV treatment, gender, the current status of BPPV (resolved or not), a check for any reoccurrence of BPPV over the 10-year time frame and any other comorbidities that the study cases may have concurrent to BPPV involvement.

Findings and Conclusions

In this review of bilateral BPPV several important points were identified. The majority of the cases reviewed were female, slightly more than 3:1. The majority of patients (58 or 92%) showed resolution of symptoms in the follow up visit with the physician. Some comorbidities were seen repeatedly in patients with bilateral BPPV including: endolymphatic hydrops or Meniere's disease, allergic rhinitis, migraine, diabetes mellitus, head trauma, brain tumor, sinusitis and vestibular neuritis. The efficacy of bilateral BPPV involvement treatment in one physical therapy session (92%) seen in this study suggests that bilateral and unilateral symptoms can be resolved at similar rates. The higher comorbidity prevalence in Meniere's disease and migraine than the general population seen in this study could support the idea that certain patient medical comorbidities may affect BPPV onset risk.