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A Message from the KAHPERD President

Greetings again, it has been a pleasure to serve as your 2016 KAHPERD President. I especially want to thank Dr. Steve Chen and Dr. Gina Blunt-Gonzalez for serving as our Journal co-editors, their time and commitment to this publication is a valuable asset to all KAHPERD members and beyond! Thank you as well to each of the writers for your professional contributions to this edition.

SHAPE America launched a bold vision over a year ago: “50 Million Strong by 2029". That vision is around the impact that wellness, health education and physical education can have on the graduating class in 2029 if we as professionals continue to work toward improving health outcomes for all. In 2016, Kentucky Education Commissioner Dr. Stephen Pruitt led the department of education through a new strategic vision planning process also to create “Our Children, Our Commonwealth”. I think KAHPERD is uniquely positioned to truly embrace and support both of these visions by continuing to engage decision makers in our state. As Kentucky has continued with planning for implementation of the Every Student Succeeds Act, I continue to be encouraged by the conversations that help to change educational paradigm shifts related to school priorities and accountability. Schools have to be at the heart of efforts to improve health literacy and physical literacy for all students. Thank you!
Sincerely,

Jamie Sparks
KAHPERD President 2016

Acknowledgement

As the Editors of the KAHPERD Journal, we would like to show our appreciation to the following guest reviewers for their assistance in reviewing this current issue.
Dr. Travis Esslinger, Western Kentucky University; Ms. Elizabeth Ash, Morehead State University; Dr. Laurie Larkin, Eastern Kentucky University; Dr. Kristi King, University of Louisville; Dr. Shaoyi Shan, University of Arkansas & Arkansas Children’s Hospital Research Institute, Dr. Roger Lo, Hong Kong Baptist University, Dr. Stephanie Wooten-Burnett, Greater Clark County Schools, and Dr. Manuel Probst, Morehead State University.

Sincerely,

Gina Gonzalez, KAHPERD Journal Co-Editor
Steve Chen, KAHPERD Journal Co-Editor

KAHPERD Journal Submission Guideline

SUBMISSION OF A PAPER

The KAHPERD Journal is published twice yearly (spring and fall) by the Kentucky Association for Health, Physical Education, Recreation, and Dance. The journal welcomes the submission of empirical research papers, articles/commentaries, best practices/strategies, interviews, research abstracts (spring Issue only) and book reviews from academics and practitioners. Please read the information below about the aims and scope of the journal, the format and style for submitted material and the submissions protocol. Your work will more likely to be published, if you follow the following guidelines thoroughly.
Articles are accepted via an electronic attachment (must be in Microsoft Word format, doc or docx) through e-mail to the editor before the deadline dates. Submissions should be sent to editor, Steve Chen: s.chen@moreheadstate.edu
Deadlines: Spring issue—March 1 & fall issue—September 1

AIMS AND SCOPE

The main mission is to bring together academics and practitioners to further the knowledge and understanding of issues and topics related to health, physical education, sport administration and marketing, exercise science, sport coaching, dance, and recreation, etc. We encourage submissions relating to these topics from a variety of perspectives.

CONTENT

All articles should be written primarily to inform senior practitioners and academics involved in areas of health, physical education, recreation and dance.
Research articles should be well grounded conceptually and theoretically, and be methodologically sound. Qualitative and quantitative pieces of research are equally appropriate. A good format to follow would be: Introduction, Literature Review, Methodology, Results, & Discussion, Conclusion, and Implication. Articles may include an abstract of approximately 150 words including the rationale for the study, methods used, key findings and conclusions. Article should not exceed 10 single-spaced pages (not including references, tables, and figures).
Reviews of books and/or reports are welcome (around 1000-2000 words). Information concerning the book/report must be sent to the editor.
Interviews (it would be nice to discuss with the editor beforehand) and best practice/strategy papers of 1,500-3,000 words should be objective and informative rather than promotional and should follow the following format: Objective/Background/Discussion and Practical Implication.
Research abstracts (300 words or less) are welcome and limited to the spring issue only. The submitted abstracts should have been presented (either an oral or a poster presentation) in the KAHPERD annual conference in the previous year.
*The editor is keen to discuss and advise on proposed research projects, but this is no guarantee of publication.

FORMAT AND STYLE

Manuscripts should follow the form of the guidelines for publications outlined in the 6th edition of the Publication Manual of the American Psychological Association.
Tables, charts, pictures, diagrams, drawings and figures should be in black and white, placed on separate pages at the end of the manuscript. They must be submitted photo ready and reproduced to fit into a standard print column of 3.5 inches. Only one copy of each illustration is required, and captions and proper citations should be typed on the bottom of the table and diagrams. Jargon should

be reduced to a minimum, with technical language and acronyms clearly defined. The accuracy of any citations is the responsibility of the author(s).
For more specific style questions, please consult a recent edition of the journal.

SUBMISSIONS PROTOCOL

Submission of a paper to the publication implies agreement of the author(s) that copyright rests with KAHPERD Journal when the paper is published.
KAHPERD Journal will not accept any submissions that are under review with other publications. All manuscripts submitted will be peer reviewed by 3 members of the editorial board. To be accepted for publication in the journal, the article must be approved by no less than 2 of the 3 reviewers. Authors will normally receive a decision regarding publication within six to 12 weeks. Rejected manuscripts will not be returned.

(Peer Reviewed Article)

Perceptions, Attitudes, and Beliefs Regarding a Syringe Exchange Program in Rural Kentucky

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Jonathan D. Vorbeck, Eastern Kentucky University
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Abstract

A syringe exchange program (SEP) offers free sterile syringes for injection-drug users (IDUs) and collects used syringes to reduce the transmission of blood-borne pathogens, particularly HIV and Hepatitis B/C (CDC, 2010). In addition to the basic SEP, some programs offer counseling and testing as well as referrals to substance abuse treatment facilities (CDC, 2010). Providing inclusive prevention services for IDUs can benefit in the reduction of blood-borne pathogens and should enhance access to substance abuse treatment and health care, thus aiding as a successful public health approach (CDC, 2010).The purpose of this study was to assess community members' opinions on implementing a SEP in a rural Kentucky county. Seventy four surveys measuring attitudes, perceptions and beliefs regarding a SEP were completed by three groups of community members: current and previous drug users (n=19), parents of current and previous drug users (n = 8), and community stakeholders (n = 47). The majority of the participants, 64%, were in favor of implementing a SEP in their county. Further data analysis may demonstrate the perceived need for a SEP that includes HIV/AIDS and Hepatitis testing in order to reduce the prevalence of these diseases and heroin overdose.

Keywords: Syringe Exchange Program, HIV/Aids, Hepatitis, heroin

Introduction

Nation-wide, 35 states offered SEPs in 2015 and there were 228 known SEPs in the U.S., but this number was estimated to rise (Strathdee & Beyrer, 2015). In the state of Kentucky, only three communities had implemented a SEP: Lexington, Louisville, and Northern Kentucky (Louisville Syringe Exchange Program, 2015). However, as of April 2016, 15 programs total have been initiated across 12 counties in Kentucky (Kentucky Harm Reduction Coalition, 2016). Additionally, three more counties have implemented programs as of July 2016 in Kentucky (Estep, 2016). Several research studies have shown the benefits of these programs, for instance, the Kentucky Department of Public Health and Wellness (2015) determined a SEP reduced the rates of HIV by 6% during the year 2005 in the nation in cities where SEPs were present (Louisville Syringe Exchange Program, 2015). Another study by the National Institute of Health in 2005 found that those who participated in a SEP reduced addiction rates and increased rehabilitation participation by as high as 80% for drug users who regularly participated in the program (Louisville Syringe Exchange Program, 2015).

Prescription-drug monitoring programs have also been implemented in order to reduce the HIV/hepatitis prevalence in Kentucky. Previous research has shown that SEPs have benefited the community utilizing the program (Louisville Syringe Exchange Program, 2015). Such benefits include counseling and treatment for IDUs, testing for HIV, Hepatitis and other

infections, education about harms associated with drug use and how to minimize them, and safe disposal of contaminated equipment (Louisville Syringe Exchange Program, 2015). According to the Crime & Traffic Data (2015) from the Kentucky State Police Department, the average in Kentucky was 17 for the year 2014, while there were 23 drug poisoning deaths per 100,000 in Jessamine County. Additionally, there were 59 heroin arrests in Jessamine County in 2014 and 56 in 2013, indicating an increase in numbers over the past couple years (Kentucky State Police, 2015). Jessamine County ranked 11th highest for heroin arrests in Kentucky (Kentucky State Police, 2015). Therefore, the Health Educators at the Jessamine County Health Department are proposing to initiate a SEP.

Purpose of the Study

The purpose of this study was to measure community members' opinions on implementing a SEP in Jessamine County, a rural Kentucky county. It is hypothesized that the community members in this county will be in favor of a SEP in regard to the recent rise in heroin use, infection rates, and overdoses in their community. A SEP in this community may help reduce the prevalence of drug overdoses, drug addiction, and the transmission of infectious diseases such as HIV/AIDS and Hepatitis.

Literature Review

Hepatitis C Prevalence

In 2013, Havens, Lofwall, Frost, Oser, Leukefeld, and Crosby assessed the relationship between Hepatitis C infection among rural Appalachian drug users. Trained staff conducted HIV, HVC, and herpes simplex-2 virus testing on the subjects and an interviewer administered questionnaires to measure sociometric network characteristics and self-reported risk behaviors (Havens et al., 2013). The results showed that 54.6% of the rural IDUs had HCV infection and the IDUs that reported sharing syringes within the past 6 months were more than twice as likely as those who did not report sharing syringes to be HCV positive (Haven et. al., 2013). Only 31.2% of the subjects that tested positive were aware of their serostatus, so testing was considered a critical factor in order to alert the IDUs of their condition (Havens et. al., 2013).

Injection Risk Behaviors

A study by Havens, Oser, and Leukefeld, (2011) investigated injection drug users (IDUs) among a group of felony probationers in the rural Appalachian Kentucky area. Results showed that 22.4% of the 800 participants reported lifetime IDU and of these, 16.7% self-reported that they had either Hepatitis B or C as compared to only 1.8% of the 621 who were non IDUs (Havens et. al., 2011). Of the IDUs, 75.3% of them said they "very often" sold or gave away syringes without cleaning them. The conclusions of this study (Havens et. al. 2011) highlighted the potential for hepatitis spread among this cohort and region in Kentucky.

HIV Prevalence in the South

A research study conducted by Burki (2015) compared poverty levels and HIV infections in the south. The southern states encompasses 37% of the country's population, while 50% of

new HIV infections occur in this region (Burki, 2015). This area contains half of all new AIDS diagnoses and in turn most deaths occur as a result (Burki, 2015). The conclusions of this article determined that a SEP would benefit this region and legislature was proposed to pass a law for this program as well as a bill to decriminalize possession of injection materials and to allow for the community to assist those struggling with addiction.

HIV Outbreak in Indiana

States and counties close to Kentucky have seen massive increases in IDU in rural areas along with an increase in HIV prevalence. Strathdee and Beyrer (2015) addressed the HIV outbreak in Scott County, Indiana, a rural area bordering Kentucky. Prevalence data concluded new HCV cases across the nation increased by 75% between the years 2010 and 2012; and in central Appalachia (Tennessee, West Virginia, Virginia, and Kentucky) there was a 364% increase between the years 2006 and 2012 (Strathdee & Beyrer, 2015). According to the Substance Abuse and Mental Health Services Administration, 42% of persons 12 years and older who needed addiction support but did not receive it reported the main reason was the lack of funding for prohibitive costs and health coverage (Strathdee & Beyrer, 2015). Strathdee and Beyrer (2015) concluded that a proposition for legalizing a SEP in Indiana would help reduce the number of drug abusers and HIV outbreaks.

Methods

Survey Planning

This research project took place during the month of November, 2015 in Jessamine County, a rural county of Kentucky. Participants were recruited through various organizations affiliated with the county health department. These organizations include a county drug court, the CORE Docket (Drug Diversion Program), the SAVI (Substance Abuse and Violence Intervention) group, the county board of health, local law enforcement/first responders, the Agency for Substance Abuse Policy (ASAP), and the Safe Communities Coalition. The planning and recruitment process was accomplished by health department staff, in which organizations were sent the surveys and accessed these contacts through the county health department's list-serves.

Survey Development

The surveys were created by the researchers and designed accordingly for each group: the current or former users, parents of current or former users, and community partners' groups. The questions were written with collaboration from university faculty along with the county health department. Content validation was assessed by health professionals experienced in survey design. The survey was pilot tested using feedback from the Jessamine County Health Department staff. The three surveys measured the participant's perceptions, attitude, and beliefs regarding the initiation of a SEP in their community and whether or not they thought the program would reduce the prevalence of HIV/hepatitis and reduce drug overdoses due to heroin.

Survey Background

The first 9 questions on the surveys were similar, however the remaining questions were targeted for each group. The current or former drug user's survey included 17 questions,

which asked questions pertaining to whether or not this group would use the program and what influenced their addiction. The family members of the current or former drug users survey included 18 questions, which included 9 questions relating to when they first found out about their child's addiction and if they knew whether or not the dangers of drug addiction were being taught in their community or if they thought these topics should be taught. The community partner's survey included 13 questions, which asked information in reference to how the initiation of the program would benefit the community and whether or not they received calls about dirty needles in the community. Each survey took approximately 5-10 minutes to complete.

Survey Delivery

Each survey contained an informed consent cover letter, which outlined background information on SEPs and the purpose of the study. The letter also informed the participants that there are no risks in completing the survey and that it is voluntary. The participants were recruited through various county health department's list serves. The anonymous survey was administered through Survey Monkey. Participants were divided into three different groups: 25 current or former drug users, 50 parents of current or former drug users, and 75 community partners. The participants were sent the prospective surveys via email and completed surveys were gathered accordingly.

Subjects

Subjects included 150 men and women aged 18 years and older. Recruitment procedures included sending the survey via Survey Monkey through list serves to the prospective organizations. The survey participants were asked to read an informed consent before completing the survey and consent was implied by the subject when completing the survey.

Survey Analysis

Survey results were entered into Survey Monkey and analyzed using SPSS Software Version. Chi-square analyses were conducted comparing measures of perceptions, attitudes, and beliefs of each group and analyzed possible differences or similarities that may exist between participant groups. The results were compiled and conclusions were made based on the statistical analysis.

Results

Demographics

One hundred fifty surveys were sent out to the participants. Twenty-five surveys were sent out to the current and former drug users group, 50 were sent to the family members of the current or former drug users, and 75 surveys were sent out to the community partners group. Seventy-four surveys were returned with a 49% response rate. Sixty-four percent was from the community partners group (n=47), 26% from the current or former drug users group (n=19), and 11% from the family members group (n=8).

Attitudes Towards Implementing SEPs

Overall, the majority of the population was in favor of a SEP in Jessamine County. The pearson chi-square test showed (Table 1) that the majority of members in each group were in

favor of a SEP with a p-value of 0.003 at an alpha level of $p<.05$. A second pearson chi-square analysis was completed and we can conclude with statistical significance that the majority of the population agreed that access to clean injecting supplies would not cause more drug use in the county. The Pearson chi-square test showed that the majority of the members in each group did not believe clean syringe access would lead to more drug use ($p<.05$). Given that the alpha level is 0.05, the information is statistically significant as well.

Chart 1 shows the percentage of all subject groups who believe a SEP should be implemented in Jessamine County. The group with the highest percentage was the drug users group, followed by the family group, with 94.74% and 87.5% respectively. The group with the lowest percentage was the community partner's groups with 46.81%. This finding was not surprising in that the community partners were more hesitant of implementing the program throughout the study and it was predicted that they would be more hesitant. However, the majority of the respondents were in favor of implementing the program in their community.

When asked about whether subjects believed that a SEP would result in more drug use (see Chart 2), the majority of subjects said they did not believe that access to clean injecting supplies would cause more drug use in their community. The family group showed the highest percentage, followed by the drug users group, with 87.5% and 68.42% respectively. The community partners group had the lowest percentage with 65.96%. These results were slightly different than what the researchers predicted in that the researchers predicted that the drug users group would have the highest percentage. In turn, the drug users group and the community partners group were very similar in responses.

When asking the community partner group, Chart 3 summarizes their opinion regarding whether offering a SEP would be a worthwhile cause for preventing various issues. The majority of these subjects believed this program would be a worthwhile cause for improving the health and safety of the community (46%), and reducing infectious disease rates (49%).

When asking current/former users if addiction counseling were provided as a result of the SEP, would they attend, 89.5% said they would, but 10.5% said they would not (see Chart 4). Thus, indicating a need that addiction support should be included in a SEP once it is implemented. Additionally, when asking if this group has been tested recently for HIV/Hepatitis, only 52.6% said they have while 47.4% said they have not (see Chart 5).

When asking the family members of current/former users if they thought the dangers of addiction/drug use was being taught in schools in their community, 0% of them knew whether or not it was. However, 87.5% believed the dangers of addiction/drug use should be taught in their community (see Chart 6).

Conclusions

The family group survey results revealed more preventive measures need to be taken in order to reduce the heroin prevalence in their community, especially in regards to education. Sadly, all (100%) of the respondents in the family group did not know whether or not the dangers of addiction was being taught in Jessamine County. On the other hand, 87.5% of this group believed these items should be taught in their community. When the qualitative data section of this survey was compiled, one respondent revealed, "they probably don't support it but that's because they haven't had their loved ones experience this disease. There needs to be education for everyone. I hope they keep an open mind for the greater good of the community

and addicts. No one chooses to be an addict but if they chose to get help we as a community have an obligation to help them and end this epidemic." Thus, education and community involvement needs to be implemented in order to reduce the prevalence of heroin usage in this county.

The community partners group revealed hesitation towards implementing a SEP. For instance, some of them were unaware of what a SEP entails and some of them thought this program would enable the drug users in their addiction and not lead to drug prevention. However, the majority of this group was in favor of initiating the program. Qualitative data from one subject answering the question, "how would you feel about having a SEP in your community," explained that "I live in Fayette County, we already have a needle exchange at our health department and have seen amazing results. I believe it is a way to reduce disease and promote resources for treatment."

The current or former users group further revealed the desperate need for a SEP in this particular county. Almost ¾ of the respondents (68.42%) would use clean needles if provided to them at no cost and almost all of them (89.47%) said they would attend counseling for their addiction. However, a little over half of the respondents (52.63%) have been tested recently for HIV/Hepatitis. These results emphasize the need for a SEP that provides clean needles, addiction counseling/support, and free testing for HIV/Hepatitis.

Limitations

This study contained several limitations. For example, this was a small study, so the majority of the community's' opinions' on implementing a SEP were not measured. Also, of the 3 groups, the parent group was especially small and representation of this group is very limited. Additionally, the survey could be more in-depth in asking more qualitative questions pertaining to the community's needs. For instance, the survey could ask for suggestions for the implementation process of the program.

Future Implications

In order to gain a complete understanding of the remainder of the community's' opinions on implementing a SEP, future research should be conducted. This was a small study, so including more participants will increase one's knowledge of what the majority of the community thinks about implementing a SEP. These opinions will include the community's hesitation towards the program and what they believe should be included in the program. Additionally, it is recommended that the injection users be tested for HIV/Hepatitis periodically in order to test for the level of success of the program.

Future studies should measure a great number of community members' opinions regarding a SEP including whether or not they think it should be implemented, and any hesitations toward these programs. For instance, the researchers could create a coalition committee before conducting the research study in order to increase community involvement and target individuals interested in utilizing the SEP if it is initiated. Furthermore, a community forum could be organized to invite parents of IDUs, community leaders, current and former IDUs and first responders to give background information of a SEP and how this program would benefit their community. Since the parents group was the smallest represented group, a focus group could be organized to invite parents of current and former IDUs to discuss their opinions regarding SEP's to hopefully increase participation in the initiation process.

Additionally, the demographics of the participants should be measured in future studies to understand better the target population, particularly the current/former drug users group. If the researcher understands what the demographics are, they may understand more fully who to target with preventative measures in combating the drug use issue in their community.

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Table 1. Chi-square Comparison of Items from the SEP Survey (*n* = 74)

Survey Question	Results	Chi-square results
Should a syringe exchange program be implemented in Jessamine County?	Yes: 63.51% (n=47)	P = 0.003
Do you believe that access to clean injecting supplies will cause more drug use in Jessamine County?	No: 68.92% (n=51)	P = 0.00047

Chart 1: Percent of All Subject Groups who believed a SEP should be implemented in Jessamine County

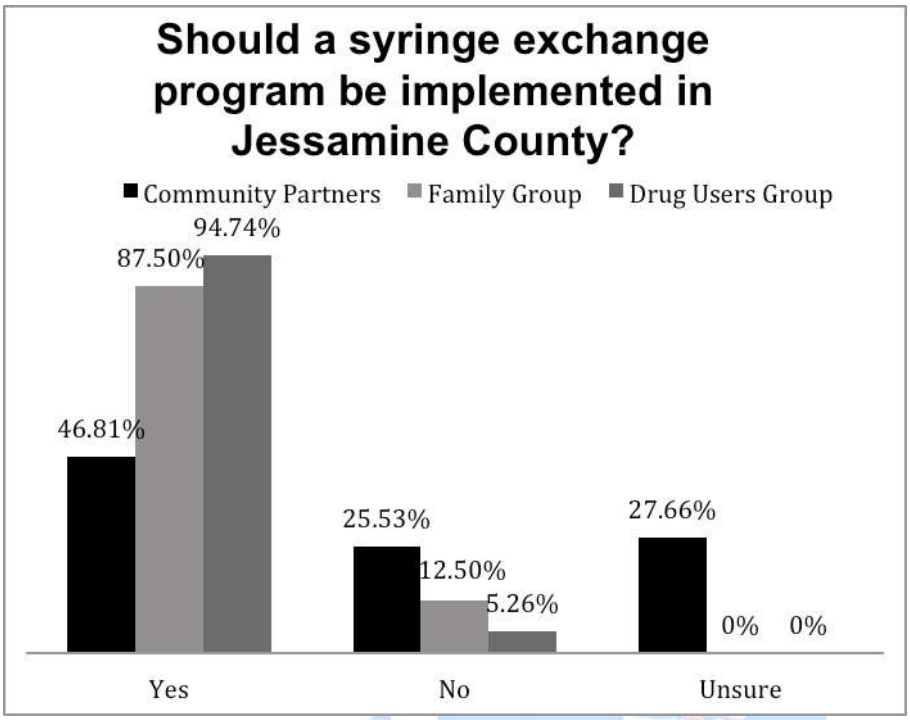


Chart 2: Percent of All Subject Groups Who believed that a SEP would cause more drug use

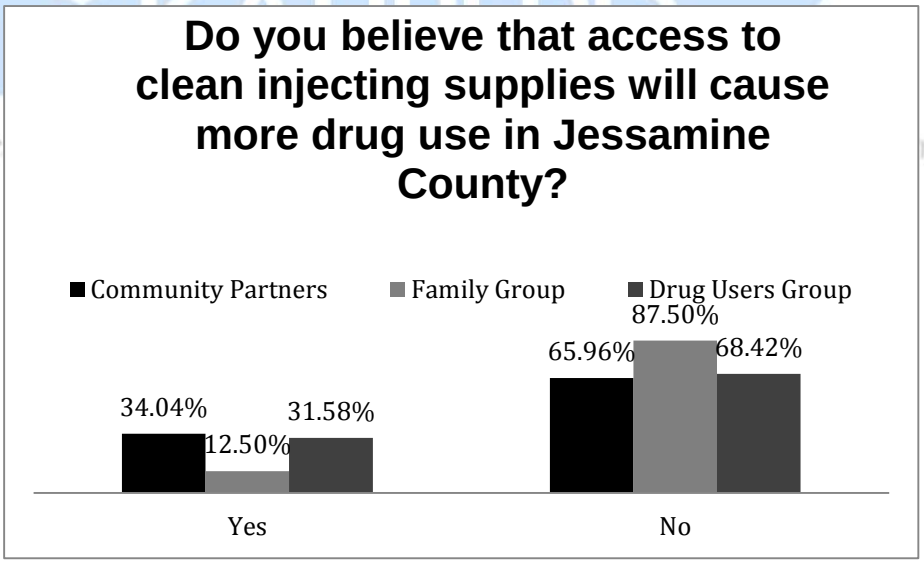


Chart 3: In your opinion, why would a SEP be a worthwhile cause in Jessamine County?

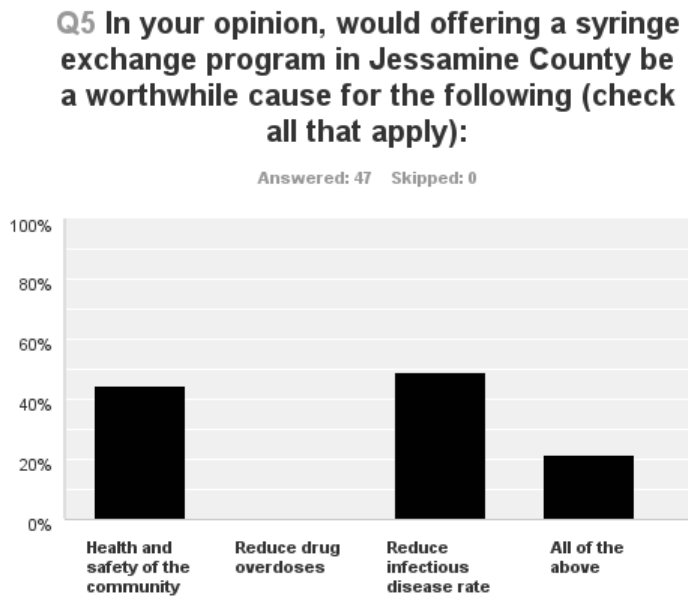


Chart 4: Current/former user group: If counseling were provided to you for your addiction, would you attend?

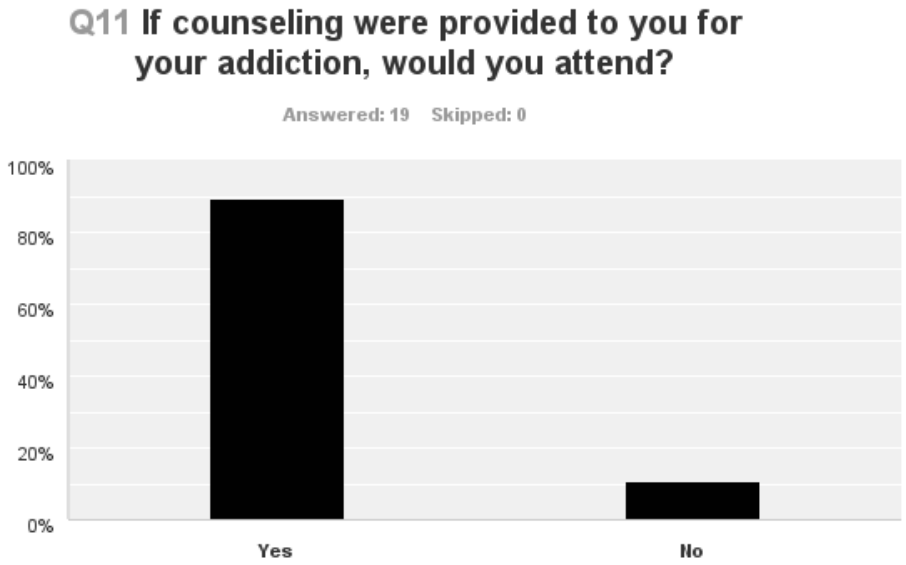


Chart 5: Current/former user group: Have you been tested recently for HIV/Hepatitis?

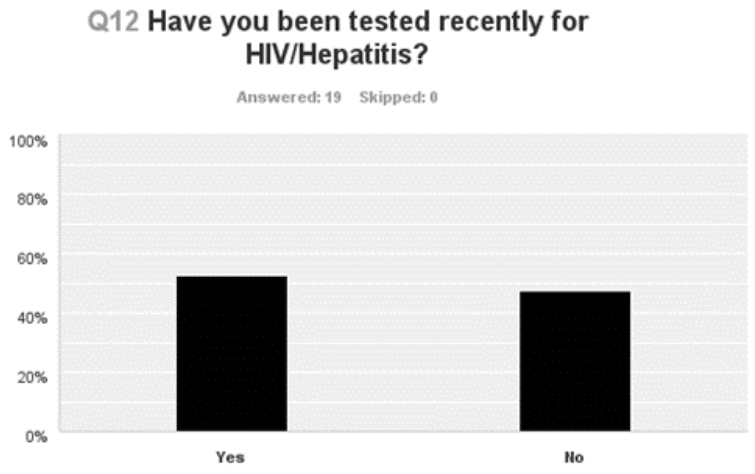
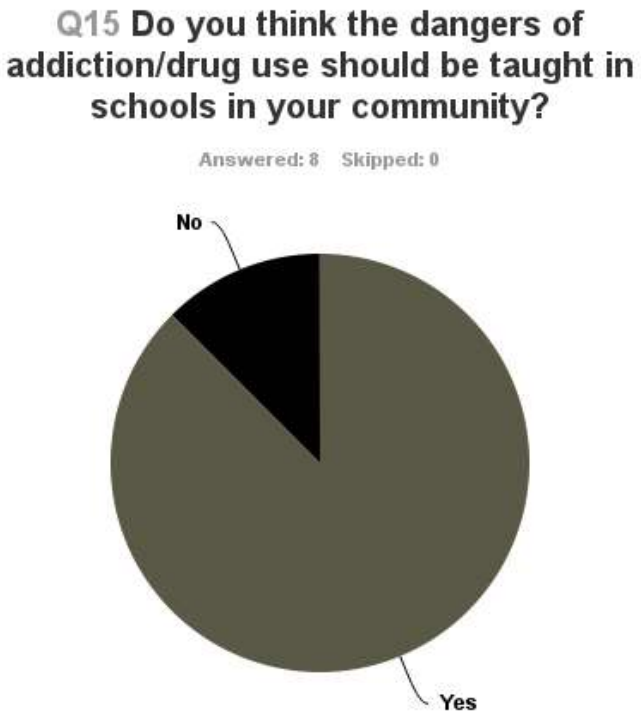


Chart 6: Family members of current/former users group: Do you think the dangers of addiction/drug use should be taught in schools in your community?



(Peer Reviewed Article)

Identifying Resident Brewery Visitor's Level of Community Attachment

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Introduction

There are now more breweries in the United States than at any other time in history (Brewers Association, 2016). Small craft breweries mainly produce a local product, and many are only distributed locally in three ways to their customers: on-site at the brewery, in cans or bottles in the local distribution area, and on tap from kegs at restaurants and stores. This helps craft beer to be identified as a locally sourced product. Locavores are people who purchase and value locally produced food (Stanton, Wiley, & Wirth, 2012).

The connection between community attachment and locavore tendencies of brewery visitors has not been studied in depth. This paper explores a potential predictive model between community attachment and locavore tendencies. The authors hypothesize that knowing overall community attachment can help predict locavore tendencies. This information would be relevant to local communities in tourism planning, special events, and the food and beverage industry.

Literature Review

Craft beer drinkers and locavores are concerned with obtaining locally sourced food and drink. Local food can be described in a number of ways. A Harman Group (2008) survey found some people defined local as being within 100 miles, others said local means within the same state, and others suggest any food coming from a seven-hour drive can be identified as local. According to the same Harman Group (2008) consumer survey, consumers believe locally produced food is healthier than non-local food, which leads to higher interest in locally produced foods. Stanton et al. (2012) found that locavores often have higher incomes and larger household size than averages for the area and consider themselves knowledgeable about food safety and food quality concerns. In looking at motivations to purchase locally produced foods, Zepeda and Li (2006) suggest that consumer's associate proximity with freshness and quality ingredients, along with fuel cost savings, because food travels less distance. The local economy and supporting local farmers are other potential motivations for buying local. A majority of past community economic studies have focused on product benefits and consumer convenience, however, psychological factors, such as sense of community, have not seen much attention from researchers. Therefore, community attachment an important factor in community vibrancy, warrants investigation to better understand economic behaviors on the local level.

According to a study by Lee (2013), the idea of place attachment "originated from environmental psychology, referring to the relationship between people and place; specifically defined as an emotional link that people develop towards a place" (p. 38). "In the recreational and tourism context, place attachment represents a user's value of a recreation

setting and the valuation consists of functional meaning and emotional-symbolic meaning, place dependence and place identity" (Kyle, Graefe, Robert, & James, 2004, p. 213).

Community attachment is the combination of a person's bond, participation, and integration into community life (McCool & Martin, 1994). Community attachment is linked to an individual's level of rootedness as well as an individual's sense of belonging to the community (Kasarda & Janowitz, 1974). Research is lacking on brewery visitors' community attachment levels. The connection between community attachment and a craft brewery is important because it can provide information for local breweries to use in marketing and for local tourism interests. It is also important for brewery visitors to be attached to their community since this has been linked to the success and longevity of businesses, based on discussions with brewery owners and managers. Craft breweries are able to make intimate connections with their patrons. "Craft breweries are a part of their communities, operating in neighborhoods and towns, returning us to a localized beer culture," according to the Brewers Association (2015). Local beer is becoming ever more popular and often is associated with local food. The connection between a craft brewery and a community is strengthened because craft brewers tend to be involved in their local community through volunteering, sponsorships, and other philanthropy events (Craft Brewer Defined, n.d.).

Craft beer drinkers could be attached to their communities if they have a local brewery they like to visit, thus the authors expect to find that brewery visitors have a high level of community attachment. Another goal of this study is to explore if community attachment allows locavore tendencies to be predicted.

Methods

This paper looks to explore if knowing an individual's community attachment level can predict their locavore tendencies. The study was conducted at fifteen Kentucky craft breweries. A paper survey was administered on-site at the breweries throughout the spring, summer, and fall of 2015. Not all Kentucky breweries were included in the study due to limitations on location and researcher availability, and some breweries are more represented than others due to these limitations. Participants were asked to rate their agreement or disagreement with Likert-style statements about community attachment, community tourism, and local food purchasing motivations and barriers. For this study, mean community attachment scores were calculated using the ten Likert-style community attachment (Stedman, 2003) statements on the questionnaire. Individual mean community attachment scores closer to 1, indicate the individual is more strongly attached to his/her community. Stedman's instrument has been used extensively, with repeated analysis facilitated for reliability and validity (Campbell, Glover & Laryea, 2016; Marks, Chandler & Baldwin, 2014). To evaluate local food purchasing preferences, motivations, and barriers, used the instruments developed by Francioni (2012). Francioni's instruments, while more recent, are featured in various projects related to beer tourism (Rogerson, 2015; Talpos, 2016) and have proven to be valid and reliable. While validity and reliability is the initial factor, researchers chose these instruments to ensure ease of comparison to related studies.

All participants in the survey were eighteen years old or older, and only responses from local residents that live in the city or county in which the brewery is located were used for this study. The data included in this manuscript included the 761 resident surveys, the original

project included non-residents with a total of 1071 completed surveys and response rate of 79.4%.

Analysis

Local brewery visitors were 59.2% male (N=449) and 37.3% female (N=283), 88.8% white (N=673), had a mean age of 35.71 years, had high earnings with a median income of $81,658.67 (N=115). Respondents were well educated, 40.5% have a Bachelor's Degree (N=307), 73.3% have a Bachelor's Degree or higher (N=556). The percentage of people in Kentucky age 25 and older that have a bachelor's degree or higher is 21.8%, which is much lower than the percentage of brewery visitors with the same education level. The median household income is higher among brewery visitors than that of Kentucky's overall median income of $43,342. Overall, brewery visitors in this study are mostly male, more educated, and have higher household incomes than the averages for Kentucky residents. This study tries to predict locavore tendencies and looks to explore and identify how certain variables influence these tendencies.

Community Attachment Levels and Overall Means Scores

The 755 individuals responding to community attachment statements had an overall community attachment score of 2.1847 (1=strongly agree, 2=agree), indicating Kentucky brewery visitors feel an attachment to their communities (See Table 1).

Individual locavore motivation scores were calculated by taking the mean of the locavore motivation statements. A locavore motivation score for the population of brewery visitors was 1.9853 on a one to five scale, thus reflecting that brewery visitors are motived to buy local. As mentioned above, craft breweries produce a local product, therefore, it follows that craft beer consumers have a desire to shop locally. It is important to know if consumers perceive any barriers to buying local even though they are motivated shoppers. A mean barrier score of 3.1464 suggests brewery visitors are unsure or indifferent about barriers to buying local food and services.

The barrier scores could be a reflection brewery visitors' likeliness to have higher incomes or be more educated. To reframe, the barriers proposed in previous studies may not be as important to these respondents, perhaps due to their willingness to pay more, or their perception of value associated with these products.

Locavore motivation, combined with barriers to purchasing local food, can be considered simultaneously to present an overall locavore tendency. Table 1 shows locavore tendency, barriers to purchasing, and locavore motivation mean scores. There were ten locavore motivation statements and ten statements on locavore purchasing barriers on the questionnaire. The mean score of 1.99 (2=agree) on the motivation statements suggests visitors are motivated to buy local. A mean score of 3.15 falls between Somewhat Agree (2) and Somewhat Disagree (4), reflecting a neutral or indifference regarding barriers to buying local goods and services. Kentucky brewery visitors are local minded and either do not perceive barriers to buying local or are not sure about barriers to buying local. This makes sense seeing how craft beer is readily obtained close to the source where it was produced. People wanting a locally crafted item may be more likely to purchase it close to where it was

made. Individuals with this mindset also may not think about barriers to local goods such as cost, time constraints, and quality because they tend to have higher household incomes and more disposable income.
Even with the relatively high score for barriers to buying local, the combined mean score between the locavore motivation and locavore barrier scores gives a mean locavore tendency score of 2.57, which suggests visitors lean toward having locavore tendencies. The main purpose of this research paper is to tease out which variables can predict locavore tendencies.

Locavore Tendencies

Locavore tendencies can be anticipated considering local food purchasing and barrier statements, demographic data and community attachment levels. Researchers noticed community attachment and locavore motivation scores to be above average and/or strong related to locavore tendency. Additionally, locavore barriers scores were average, perhaps indicating most barriers were not factors in purchasing of goods. If a person's community attachment, locavore motivation, and their barriers to buying local are known, it is possible to expect his or her locavore tendencies.

Discussion

Locavore tendencies could be shopping at a farmer's market, eating at a local restaurant, and even drinking a beer at a local brewery. For some, shopping locally is a response to environmental, economic, or health and global health concerns. Findings of this study suggest it is possible to understand locavore tendencies as long as certain variables are known (community attachment level, locavore motivation, and barriers to buying local). This information has the potential of informing decisions about community, local businesses, marketing, and tourism in a region. The majority of respondents have high disposable income and high educations levels, which is consistent with other studies on craft beer drinkers (Kraftchick et al., 2014, Plummer et al., 2005). More disposable income could explain why brewery visitors are able to be choosier in respect to where they buy food and how their food and beer is produced.

This study also explored community attachment levels. Communities can see many benefits from strong community attachment levels such as a healthier tourism industry. Increased community attachment could help a community thrive in various ways, which could bolster support for local activities and special events. In the tourism and special events planning industry, knowing residents are attached to their community and have locavore tendencies can have a great impact and help tourism bureaus in planning meaningful and relevant events.

Local businesses can also benefit from predicting locavore tendencies, especially in the food, beverage, and service industry as this could give insight into customer's buying behavior. Marketing and business promotion can use this information to target marketing dollars and guide viable business planning strategies.

Findings from this study note that marketing to residents and repeated visitors may be warranted, as those demographic groups show attachment to their community, high likeliness to buy local, and do not see many barriers to buying and investing locally. This research highlights the need for continued study of community attachment and locavore tendencies for

applied use in diverse fields and private enterprises. Specific factors that may warrant further investigation may include local product pricing, geographic location of local goods for sale, and others

While this study concentrates on only one state, Kentucky, and only one segment of the population, craft brewery visitors, further study in diverse areas and populations may benefit different parts of the economy, tourism sector, and local businesses in communities.

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Table 1. Mean Scores of Various Constructs

	Community Attachment	Locavore Motivation	Locavore Barriers
Mean	2.1847	1.9853	3.1464
Std. Deviation	0.72965	0.65938	0.63845

* 1=strongly agree, 2=agree, 3=neutral, 4=disagree, 5=strongly disagree

Table 2. Community Attachment (1= strongly agree; 5 = strongly disagree)

Statement	Mean	S.D.
The settings and facilities provided by this community are the best.	2.09	0.825
I prefer living in this community over other communities.	2.01	0.922
I enjoy living in this community more than other communities.	2.01	0.886
I feel this community is a part of me.	2.12	0.950
Living in this community says a lot about who I am.	2.45	1.070
Living in this community means a lot to me.	2.16	0.971
I am very attached to this community.	2.27	1.019
I feel a strong sense of belonging to this community.	2.25	0.993
Many of my friends/family prefers this community over other communities.	2.33	0.992
I identify with the people living in this community	2.17	0.909

Table 3. Locavore Motivation (1= strongly agree; 5 = strongly disagree)

Statement	Mean	S.D.
Local food is a healthier option.	2.24	0.985
I like the idea of supporting my local farmers and ranchers.	1.37	0.587
Buying local reduces my carbon footprint by decreasing emissions produce by a supply chain.	1.86	0.959
Locally grown food tastes better.	2.03	0.946
Locally grown food is raised/grown humanely.	2.33	0.935
Local food will be better for me, free from antibiotics, hormones, pesticides, chemicals, etc.	2.30	0.978
Local food purchases have a positive effect on my local agricultural community.	1.54	0.692
Buying local food is environmentally responsible.	1.87	0.921
Locally raised/grown food has superior flavor.	2.16	0.965
Smaller, local produces treat their plants/livestock better than larger producers.	2.16	0.936

Table 4. Locavore Barriers (1= strongly agree; 5 = strongly disagree)

Statement	Mean	S.D.
Local food is more expensive.	2.26	0.944
Buying local food is inconvenient.	3.34	1.043
Local foods lack labels/labeling.	3.26	0.986
Local foods have inconsistent quality.	3.59	0.911
I desire better food products than I can get locally.	3.25	1.127
I can get a better price through larger/national brands.	2.46	1.043
Finding a quality local producer can be difficult.	3.10	1.052
I am more confident with a brand name product.	3.49	1.040
With local foods, I am not sure what I am getting.	3.70	0.923
I desire specific food products which may not be offered locally.	2.97	1.116

(Peer Reviewed Article)

Mental Illness and Sports

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Introduction

A series of mass shootings and suicides induced by sport-related concussions within the last six years prompts an urgency for the public to address and reevaluate the issue of mental illness (Gay, 2013b, Gay, 2014; Lapook, 2015; Murphy, 2015). All perpetrators of these horrific incidents experienced a certain form of mental illness, and their illness caused them to harm innocent citizens in a violent way without cause. Today, health professions and industries in our society put a lot more emphasis on physical health and fitness. Society spends more resources in fighting diseases, malnutrition, and obesity. Although health education often equally emphasizes both aspects of one's wellbeing (mind and body), it seems psychological and mental health are more likely to be neglected. However, awareness of mental illness issues has grown drastically after intensive media coverage of the aforementioned shooting incidents and the establishment of the Affordable Care Act.

Mental illness refers to a medically diagnosable range of disorders that result in a significant impairment of a person's thinking, emotional or relationship abilities, and may require treatment and rehabilitation to manage the symptoms (Firestone, 2012; Mental Notes Consulting, 2014; NAMI, 2010; The Football Association, n.d.). Major disorders may include depression, bipolar disorder, schizophrenia, anxiety, obsessive compulsive disorder (OCD), eating disorders, borderline personality, and posttraumatic stress disorder (PTSD) (Markser, 2011; NAMI, 2010). The full range of psychiatric conditions could also include disorders such as post-natal depression and dementia. According to statistics, more than one in every four adults struggles with depression and about 13% of population experience mental illness in America (NAMI, 2010; Romeo, 2014). This means 40 million Americans experience some form of mental illness, including schizophrenia, bipolar disorder, major depression, obsessive-compulsive disorder and anxiety disorder each year (Romeo, 2014; Obama, 2013). Sadly, less than 40% of people with a mental illness actually receive treatment (Obama, 2013). By 2020, depression will probably be the second leading contributor to the burden of disease across genders and all ages (Mummery, 2005). Another alarming fact is that the jails in our country keep more mental illness patients than actual criminals (Edwards, 2014; Keown, 2013; Quereshi, 2014). It is important to understand that mental illness is not a choice. It is just like any other illness, such as heart disease and cancer. It can happen to anyone.

A need for addressing mental illness and sports

For myriad reasons, mental illness remains a greatly unexamined and unacknowledged aspect of society in general, and sports in particular (Keown, 2013). Sports can be a masking agent that hides deeply rooted mental health issues (Brandt, 2012). There tends to be a fiction that

athletes are immune to mental illness or psychological problems (Corrigan & Watson, 2002). As Dr. Glick, a Stanford psychiatrist and an accomplished athlete states, athletes often believe nothing can go wrong, and that they don't need help (Brandt, 2012). Athletes are perceived to be mentally strong individuals who can overcome any problem. Therefore, they don't have a need for psychotherapy or medication. There is a dominant culture in sports wherein athletes do not talk about their mental and psychological problems, since this act will expose their weaknesses and vulnerability. Unfortunately, this misconception is the primary detrimental factor that hurts those who need mental illness treatment and support. In fact, depression-induced suicide is the third-leading cause of death of student athletes, after accidents and cardiac causes (NCAA, 2008).

Thelma Dye Holmes, the executive director of Northside Center for Child Development, indicates mental illness has a stigma that is tied into weakness, and is absolutely the antithesis of what athletes want to portray (Brandt, 2012). Athletes might be vulnerable to mental illness for a number of reasons. The stress, fatigue, and pressure of performing and being judged by audiences and fans can lead to depression and anxiety (Mummery, 2005). In addition, head injuries and concussions may cause some athletes to be four times more likely to experience depression (Markser, 2011). Furthermore, various factors such as other injuries, chokes/slumps, problems getting along with teammates and coaches, overtraining, aging, and retirement from sport can all contribute to depression and anxiety. For baseball pitchers with anxiety disorder or social anxiety, it is even harder to cope with long travel schedules and excessive resting time in the dugout (Armstrong, 2010; Wang, 2009).
Many players are afraid of seeking treatment because they think people will see them as cowardly. Athletes with mental health issues are not just refusing help and treatment due to stigma; there are additional factors that discourage them from seeking medical support. The combination of medication and therapy can be a challenge in some ways. Players who receive medication for mental illness (e.g., Valium and Abilify) may gain excessive weight and lose the ability to carry out basic skills (Armstrong, 2010; NAMI, 2010). They also fear that once they have sought help, they will be seen as a liability and get kicked off the team. More commonly, players may not realize that they have a mental illness, because it is difficult for them to comprehend and identify. They may think that they are just temporarily being moody or under the weather (Armstong, 2010). The phenomenon of "under the weather" is perceived as a common obstacle they need to overcome in their athletic life (Jackson, 2016). When athletes and coaches have manic episodes or anger issues due to their illness, people can assume it's due to their intensity and competitiveness (Dohrmann, 2014).

In this article, the authors will address the issue of mental illness associated with athletes and sport organizations. Hopefully, by analyzing the prevalence of this health issue in today's sport realm and the challenges experienced by athletes with mental illness, we can raise awareness to combat mental illness and provide support to athletes at all levels of participation.

Prevalence of mental illness among elite athletes

According to a study of the World Footballer's Association (FIFPro, 2014) on 301 active & former professional football (soccer) players, 26% of the active professional football players reported some type of depression/anxiety and adverse nutritional behavior. The measured outcomes of this survey included level of distress, burnout, anxiety/depression, self-esteem, and adverse health behaviors (alcohol, smoking, nutrition). The results found that mental

illness occurred among former professional athletes even more often than in active players. About 39% of former players reported signs of anxiety/depression, and 42% reported adverse nutritional behaviors and mental health problems.

Research on National Collegiate Athletic Association (NCAA) athletes showed 17% of current athletes and 8% of former athletes with depression symptoms (Smith-McDowell, 2013). Former student-athletes often lack social support after finishing their playing and academic careers. Although the findings of the aforementioned mental health study related to U.S. collegiate athletes have shown less degree of severity, a couple of important points should be further clarified. First, the study only solely focused on illness related to depression and anxiety. Furthermore, this is no indication that the collegiate athletics' governing body, NCAA, has done a great job in monitoring the mental illness issue or implemented a supportive counseling system to assist athletes.

Depression is as common in professional sports as in the general public (Yang, Peek-Asa, Corelette, Cheng, Foster, & Albright, 2007), and is the most common mental disorder in the field of sport (Markser, 2011). For those players who suffered concussions during their sport career, their risk of experiencing depression is at least three times higher than players who did not experience a concussion (Guskiewicz, Marshall, Bailes, McCrea, Harding, Matthews, Mihalik, & Cantu, 2007).

As mental illness awareness has garnered increased media attention, we see more prominent athletes and sport coaches willing to discuss their mental illnesses publicly (Agronin, & Battista, 2013; Associated Press, 2015). An online search revealed stories and reports concerning famous athletes and coaches who have experienced mental illness. The athletes and coaches on this collected list (please see Table 1) come from all types of sport backgrounds and have achieved remarkable athletic success. By no means were the authors trying to create a comprehensive list that will include every athlete or coach with mental illness. Nevertheless, this list illustrates how mental illness has already impacted numerous beloved athletes and coaches.

Through the collected stories and public disclosures of athletes and coaches with mental illness, we can learn about the challenges and struggles that they have faced while balancing their mental illness and athletic life. In today's society, people have little sympathy for athletes' seemingly wasting an opportunity for success, no matter the situation. They have no patience for players' down-time performance due to the effect of their illness (Wang, 2009). Though mental illness often manifests itself in sociopathic and self-destructive acts, it is not perceived as a valid excuse or means of understanding an athlete's behavior. . It becomes so easy for us to judge Titus Young's multiple arrests, Suzy Hamilton's highly risky prostituting behavior, and Tony Horton's bizarre act of crawling back to the dugout after fouling out (Hamilton & Tomlinson, 2015; Keown, 2013). In her *New York Times* bestseller book, Olympic swimmer, Amanda Beard claimed that even winning seven gold medals couldn't quiet her inner critic. She was trying to reach a level of perfection that didn't exist. Her goal in discussing her illness publicly was to let others know "they aren't alone and can get help in turning their lives around" (Merrimac, 2013). Three specific tips are offered by Amanda for athletes with mental illness for handling their conditions: (1) uncork personal emotions, (2) put anger on pause and (3) find a new hobby to switch focus.

Benefits of physical activity and other treatments

According to the literature, empirical evidence has demonstrated the association between physical activity and depression among college students (Bezyak, Chan, Lee, Catalano, & Chiu, 2012; Carless & Sparkes, 2008; Gorczynski, Faulkner, Greening, & Cohn, 2010; Phongsavan, Merom, Bauman, & Wagner, 2007; Taliaferro, Rienzo, Pigg, Miller, & Dodd, 2009).). For the general population with mental health issues, moderate levels of aerobic activity can be most beneficial in reducing thoughts of hopelessness, depression and suicidal behavior (Nyboe, Lene, Lund, & Hans. 2013). In general, there is no consensus on what type or level of sport participation will be ideal for treating mental problems. However, physical activities such as walking, tai-chi, yoga and gardening are widely accepted by the public as a complementary treatment for anxiety and depression. In addition, religious based counseling, equine therapy, and meditation are all a means of coping with depression, anxiety and many other issues (Childers, 2013; Duckworth, 2013; Taliaferro et al., 2009). Yoga and tai chi are well-accepted treatment practices with their connection to meditation (Harvard Health Publications, 2009). Even though athletes with mental illness have high levels of physical activity, research shows that they still can reap benefits similar to the general population; however, the level of the beneficial effect may vary on their sport participation experiences, and the reasons they terminate or quit their sport. Lastly, regardless of the forms of treatment or therapy, it is important to emphasize the avoidance of marijuana and alcohol, and maintenance of proper self-care, stress management, exercise, and nutrition (Duckworth, 2013).

In order to motivate individuals with mental health issues to exercise and maintain healthy eating habits, a community effort is needed to support those individuals without any discrimination (Harvey, Delamere, Prupas, & Wilkins, 2010). Scholars suggest exercise with family members or partners can improve motivation and social relationships (Hibbert, 2016). Exercising with families and friends can also increase reliability of self-reports and overcome individual barriers when an individual is required to monitor the level of physical activity engagement (Gorczynski et al., 2010; Bezyak et al, 2012). As with any population, those individuals with cardiovascular disease or type 2 diabetes should be medically monitored for the most effective frequency, intensity, type and time of exercise (Nyboe et al., 2013). Since the athletes are specific individuals who have already engaged in high-intensity physical activities, there seems to be less conclusive results and physiological benefits on their mental illness brought by exercise (Duckworth, 2013). More direct benefits may be associated with psychological and social aspect. Generally, elite athletes must receive proper counseling and medical treatment to help them maintain a high level of competitiveness (Armstrong, 2010; Carless et al., 2008; The Football Association, n.d.).

Support and available service for combating mental illness

Sporting organizations, clubs, and leagues can play a vital role, not only in the recovery process for athletes or coaches with mental illness, but also in prevention. People who participate in the community and physical activity tend to enjoy better mental health. Sport organizations are in a great position to protect and serve their athletes and patrons by providing a support system, an encouraging environment, and a strong voice of advocacy to fight mental illness. Anyone can be a volunteer and take on a commitment to promote awareness of mental health issues. Mental illness is common and is not a sign of weakness. We need increased public education to eliminate the stigma associated with mental illness and the misconception of that “sport athletes are invincible.”

In 1980, President Jimmy Carter signed the Mental Health Systems Act with $800 million in grants to combat mental illness. Numerous landmark bills (e.g.., American with Disabilities Act, Mental Health Parity Act, Paul Wellstone and Pete Domenici Mental Health Parity and Addictions Equity Act, and Patient Protection & Affordable Care) have been established by four other presidents to further serve the needs and protect the rights of those with mental illness. The research budget for the National Institute of Mental Health is about $1.48 billion (Gay, 2013b). However, all of these efforts and budgets are considered to be inadequate in preventing and treating mental illness.

In sport settings, the amount of money and effort spent in fighting mental illness are even far less sufficient. Out of 30 National Hockey League teams, only seven have programs that raise awareness of mental illness, and all seven are located in Canada. Major league baseball is recognized as the standard-setting professional sport league in supporting its athletes contending with mental health conditions (Armstrong, 2010; Torre, 2010). Players with mental illness issues can get support and guidance through the Employee Assistance Programs (EAPs) which were originally established in 1981 for serving patients with substance abuse and personal problems. As a patient and an advocate for mental illness, National Football League player Brandon Marshall started the Project 375 to support people with mental illness (Smith, 2015). Marshall even partnered with Under Armor to create a line of workout wear, with part of the revenue targeted to support Project 375 and assist other NFL players.

In collegiate athletics, many athletic programs have more than a dozen medical staff, yet only 25 Division-I athletic departments have a full-time licensed mental health practitioner on staff (Noren, 2014). When football player Will Heininger consulted with the University of Michigan's team physicians for his depression, he was shocked to find out over 50% of Michigan's student-athletes were on antidepressant medication. Recently, the NCAA has recognized its shortcoming in protecting athletes' wellbeing and mental health, and a new Mental Health Task Force was formed in 2014 to examine mental health concerns and offer guidelines to treat the problems (Noren, 2014). Moore and his colleagues particularly highlighted Michigan and Oregon, among other schools, as exemplary institutions that provided great counseling support and care systems for student-athletes' mental health (Moore, Aron, Gummelt, & Reynolds, 2016). On top of the academic pressure, student-athletes may be afraid of losing their scholarships with substandard performance that is affected by their mental health issues. Campus counseling and health centers may not be friendly, trustworthy or convenient (with limited office hours) places for them to ask for support. Female athletes with mental health issues tend to be more embarrassed and reluctant to seek help than male athletes. They are more likely to be critical due to a strong sense of inner shame and guilt (Moore et al., 2016). Colleges and universities must improve their efforts in recognizing mental health issues in both male and female student-athletes and provide additional support for their physical and mental health.

Conclusions

Mental illness cuts across social, racial and economic boundaries. Not even the "mighty, strong athletes" are immune to this problem (Firestone, 2012; Mental Notes Consulting, 2014; The Football Association, n.d.). It is a common disorder and not a sign of personal

weakness (Corrigan & Watson, 2002). The intent of this article is to raise public awareness of mental health issues in sports. Athletes and coaches who have dealt with mental illness should be encouraged and empowered to speak out and educate the public to break the stigma. Athletes are often viewed as role models by many individuals in many circumstances. "No other area of human endeavor offers the opportunity to confront social issues as consistently as sports" (Rushin, 2014, p.68). Encouraging athletes to become advocates would allow them to use their fame and influence for a noble cause. They can raise awareness of this issue and encourage physical activity as a way to cope with certain symptoms of depression or anxiety (Fobes, 2013). It is pivotal to document the stories of athletes and coaches dealing with their struggles with mental health (Carless & Sparkes, 2008). Individuals living with mental illness need the support of their families and the community. Together we can make a difference by offering the respect, acknowledgement, and awareness those with mental disorders deserve (Carless & Sparkes, 2008). Within the realm of sport, professional and intercollegiate athletics governing bodies must proactively provide more mental health medical services and support for athletes and coaches. Concerns related to making the existing services more visible and attainable (i.e, extending the service hours, increasing the number of counselors, introducing more educational programs, and creating a safe and trusting culture and environment, etc.) are urgent topics that administrators must consider and act on. .A possible solution for mental health issues in the sports realm would be to employ licensed mental health professionals in college athletic departments and professional teams (Moore et al., 2016). At the collegiate level, the athletic departments can even collaborate with the Department (or School) of Social Work, Nursing and/or Psychology to provide additional counseling support for their student- athletes. Rhoden (2012) further suggests that coaches should receive training and work with mental health practitioners to look for signs of trauma, bipolar disorder, and depression. A potential mental health prescreening examination for all incoming freshmen student-athletes is also a prevalent accepted recommendation (Moore et al., 2016). Hopefully, more organizations and institutions can follow the model and best practices provided by Major League Baseball, the University of Michigan, and the University of Oregon (Moore et al., 2016) to assist athletes who need psychological and mental health support. *Mental Health Best Practice* is a very useful guidebook published by the NCAA Sport Science Institute. If readers are interested, please go to the following website for further information. (www.ncaa.org/...Mental-Health-Best-Practices_20160317.pdf)

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Table 1 Famous athletes with mental illness

Athlete	Sport	Symptom
Michael Yardy	Cricket	Depression
Victoria Pendleton	Cyclists	Phobia
Frank Bruno	Boxer	Bipolar
Gary Speed	Soccer	Depression
Rebecca Marino	Tennis (Canadian pro player)	Depression
Kelly Holmes	Track & Field (Olympian)	Depression
Lindsay Vonn	Skiing (Olympian)	Depression
Suzy Favor Hamilton	Track & Field (Olympian)	Bipolar & hyper-sexuality
Jonathan Trott	Cricket	Anxiety
Marcus Trescothick	Cricket player and coach	Depression
Stan Collymore	Soccer	Depression
Gary Speed	Soccer (Team manager)	Depression
Ronnie O'Sullivan	World Snooker Champion	Depression
Graeme Obree	Cycling	Bipolar
Duncan Bell	Rugby	Depression
Robert Enke	Soccer (Goal keeper)	Depression
Amanda Beard	Swimming (Olympian, gold medalist)	Depression
Mike Tyson	Boxing (former heavy weight world champion)	Chronic Depression
Oscar de la Hoya	Boxing (former light weight world champion)	Depression
Sasha Menu Courey	Swimming (Missouri swimmer)	Depression (committed suicide)
Will Heininger	Football (University of Michigan)	Depression
Eric Hipple	Football (QB-Lions, 1980)	Depression
Erik Flinge	Football (QB-Jets)	Bipolar & psychosis
Ray Lucas	Football (QB-many teams)	Depression & drug addition
Ricky Williams	Football (RB-many teams)	Anxiety disorder
Barret Robbins	Football (OL-Raiders, Super Bowl Champion)	Bipolar & drug addition
Herschel Walker	Football (NFL Hall of Fame RB)	Dissociative identity disorder
Brandon Marshall	Football (WR-Bears)	Personality disorder
Jovan Belcher	Football (Chiefs)	Depression (suicide)
Titus Young	Football (WR-Lions)	Personality disorder
Arian Foster	Football (RB-Texans)	unclear
Zack Greinke	Baseball (Cy Young award winner, MLB Pitcher)	Social anxiety disorder
Tony Horton	Baseball (MLB Indians, 1969)	(attempted suicide)
Joey Votto	Baseball (MLB Reds)	Depression and anxiety attacks
Khalil Greene	Baseball (ex. Cardinals)	Social Anxiety Disorder

Marty Bergen	Baseball (Boston, first pro player with mental illness)	Bipolar??
Steve Sax	Baseball (Dodgers)	Anxiety
Jim Piersall	Baseball (MLB All-star pitcher)	Bipolar
Dontrelle Willis	Baseball	Social Anxiety Disorder
Steve Blass	Baseball (MLB former Pirates Pitcher)	Anxiety
Mackey Sasser	Baseball (MLB former Mets Catcher)	Concussion induced problem
Chris Craig	Basketball (NJCAA Final 4 Coach)	Psychosis, schizophrenia
Luther Wright	Basketball (NBA Jazz)	Unclear
Vin Baker	Basketball (NBA Bucks, All-star)	Depression
Chamique Holdsclaw	Basketball (WNBA All-star)	Depression
Royce White	Basketball (NBA 76ers)	Anxiety Disorder
Ryan Anderson	Basketball (NBA Pelicans)	Depression
Metta World Peace	Basketball (NBA star)	Personality Disorder?
Delonte West	Basketball (NBA Cavaliers)	Depression
Michael Beasley	Basketball (NBA)	Depression
Rick Rypien	Hockey (NHL Canucks)	Depression (committed suicide)
Theo Fleury	Hockey (NHL)	Sexual abuse & addiction
Sheldon Kennedy	Hockey (NHL	Sexual abuse, PTSD

(Sources for this list include: Armstrong, 2010; Avalario88, 2014; Associated Press, 2015; Dohrmann, 2014; Gay, 2013a; Gotsulias, 2012; Haft, 2012; Jackson, 2016; Keown, 2013; Markway, 2011; Merrimac, 2013; Noren, 2014; Riches, 2013; Rhoden, 2012; Romeo, 2014; Rowan, 2014; Seth2fine, 2012; Smith, 2015; Wang, 2009)

(Peer Reviewed Article)

Educational Information Improves Physical Activity Knowledge during Pregnancy

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Abstract

Physical activity before and during pregnancy has been shown to improve a number of maternal and infant outcomes. However, women report being uninformed or misinformed about the benefits and safety of maternal physical activity during pregnancy. The purpose of this study was to increase awareness about the benefits of physical activity during pregnancy through the use of evidence-based educational brochures. A volunteer sample of women from the Bowling Green, Kentucky community was selected to participate (N=30, age: 21.4±1.5 years). Paired sample t-tests were used to determine statistical significance between surveys taken before and after exposure to educational brochures. After reading the educational brochures, survey scores increased from 75.9±9.7 to 94.6±7.1 ($p<0.001$). In addition, the number of advantages reported on the open-ended survey went from an average of 3.2±1.3 to 4.7±1.0 ($p<0.001$), and the number of disadvantages reported decreased from an average of 2.2±1.3 to 0.6±0.8 ($p<0.001$). The findings of this study suggest evidence-based educational information can improve knowledge regarding physical activity during pregnancy. Therefore, educational information may be a critical step towards increasing physical activity levels among women of childbearing age before and during pregnancy.

Evidence-based information increases knowledge about physical activity during pregnancy in women of childbearing age

Obesity is a serious health concern in the United States and abroad. Consistent with the general population, the prevalence of obesity in women of reproductive age has increased over the past 30 years (Best 2015). Kentucky-specific data suggests that the incidence of obesity at the first prenatal visit has increased from 7% to 24% over the past 20 years (Kentucky Department for Public Health). Maternal obesity places women and their infants at risk for a large number of complications including excessive gestational weight gain (Chasan-Taber 2009, Rasmussen 2008), metabolic dysfunction (Leandro 2012), and poor fetal development (Best 2015). In fact, maternal over weight and obesity have replaced smoking as the most preventable risk factor for adverse pregnancy outcomes in many countries (Aviram, 2011).

Fortunately, physical activity before and during pregnancy has been shown to be safe and effective for improving maternal and offspring outcomes in women of all body weights (Sui 2013, Clapp 1992, Loterging 2014, Lokey 1991, Mourtakos 2015, Mattran 2011). However, pregnant women report being unaware or uninformed about the positive influence of physical activity on their health or the health of their baby during pregnancy (Stengel 2012, Ferrari

2013). In addition, only 23% of pregnant women report exercising in accordance guidelines set by the American Congress of Obstetricians and Gynecologists (Evenson 2010b). Thus, the need for health promotion and education regarding physical activity during pregnancy for women of childbearing age is critical.

Further, pregnant women report receiving little or no advice about physical activity during pregnancy from their health care provider (Stengel 2012, Phelan 2011, Duthie 2013); thus, the scientific evidence supporting exercise during pregnancy does not appear to be translating into the clinic and the community. With maternal obesity becoming a serious public health concern, the need for awareness and communication about physical activity during pregnancy is more important than ever before. Thus, physical activity interventions designed to combat obesity and improve maternal and neonatal health are warranted, specifically in rural Kentucky where rates of obesity and physical inactivity are considerably higher than the national averages (County Health 2015).

Therefore, the purpose of this study was to increase awareness about the benefits of physical activity during pregnancy through the use of evidence-based informational brochures in a subset of women in rural Kentucky. To our knowledge, this is the first study to assess beliefs about physical activity during pregnancy, as well as the effectiveness of evidence-based education in women of childbearing age in rural Kentucky. We hypothesize that after exposure to evidence-based educational information, women will show increased knowledge about physical activity during pregnancy, and this may contribute to altered beliefs about exercise during pregnancy.

Methods

Participants

A volunteer sample of 30 females were recruited, ranging in age from 18 years to pre-menopause (childbearing age), from Western Kentucky University and the surrounding Bowling Green (KY) community. The participants were peers, colleagues, classmates, and other community acquaintances. These participants were recruited using e-mail notification, text messages, and word of mouth. All participants were provided with an informed consent and all procedures were approved by the WKU Institutional Review Board (822168-1). All participants completed a general health and information questionnaire before the study. (Place Table 1 here)

Procedures

Participants took surveys about exercise during pregnancy before and after exposure to educational brochures via paper and pencil. Surveys were designed using constructs of the Theory of Planned Behavior (Gaston, 2014) and were based on previously used survey materials assessing physical activity beliefs among pregnant women (Symons Downs 2006, Evenson 2010a). The surveys used in this study were designed to test the knowledge of the participants regarding exercise during pregnancy as well as assess their beliefs on how exercise during pregnancy may benefit both the mother and child. Participants met with the study team at a designated private location on campus. Participants were given all surveys and allowed as much time as they needed to complete them. Participants were supervised

while completing the surveys and the study team was available at all times to address any questions.

For the physical activity beliefs survey, the scores were accumulated from participant responses to statements on a scale of one to five with one being “strongly agree” and five being “strongly disagree”. As an example, statement one reads “Women can continue their regular exercise routine during pregnancy.” The participant was then asked to respond; strongly agree, agree, neutral, disagree, or strongly disagree with that statement. With a total of 20 questions, the pre and post-test scores were given a score from 20-100 with 100 being all questions answered in accordance with the scientific evidence and 20 being no questions were answered in accordance with scientific evidence.
The open-ended surveys asked the participants to report up to six advantages of participating in physical activity during pregnancy as well as up to six disadvantages of participating in physical activity during pregnancy. The number of accurately reported advantages and disadvantages were recorded.

After baseline surveys were administered, participants were provided with the evidence-based educational brochure. The brochure is shown in Figure 1. The information on the brochure was adapted from work by Gaston et al. and is based on guidelines from the American Congress of Obstetricians and Gynecologists (Gaston 2009). The brochure contained information regarding the benefits of exercise during pregnancy for women and their babies, recommended exercise guidelines including suggested workout ideas, as well as a section designed to debunk a lot of common myths surrounding exercise during pregnancy. Within a week of being provided with the educational brochure, the participants were asked to come back and complete the same set of surveys under supervision of the research team (post). The pre and post questionnaires consisted of the same questions and surveys, but were administered in a different order. The scoring process remained consistent.

Design

The participants’ responses to the pre and post surveys were compared to determine if an increase in knowledge or alteration in beliefs regarding physical activity during pregnancy occurred as a result of exposure to the educational brochure.

Paired sample t-tests were used to determine statistical significance between surveys taken before and after exposure to educational brochures. All data analyses were conducted using IBM SPSS Statistics, Version 23.

Results

Knowledge regarding physical activity during pregnancy increased after exposure to an evidence-based educational brochure detailing the benefits of physical activity during pregnancy. After reading the educational brochure, scores increased from 75.9±9.7 to 94.6±7.1 ($p<0.001$) (Figure 2). After reading the educational brochure, the number of advantages reported on the open-ended survey increased from an average 3.2±1.3 to 4.7±1.0 ($p<0.001$) (Figure 3), and the number of disadvantages reported decreased from an average of 2.2±1.3 to 0.6±0.8 ($p<0.001$) (Figure 3). When each question was examined individually, 19

of the 20 questions resulted in a statistically significant improvement after reading the educational information ($p<0.05$).

Looking specifically at open-ended surveys, the advantages reported before and after education were vastly different. There were no participants who discussed decreased risk of gestational diabetes before being presented with educational information. After being presented with educational materials, 21 participants reported a decreased risk of developing gestational diabetes during pregnancy being an advantage of physical activity during pregnancy. No participants discussed the decreased risk of pre-eclampsia before exposure to educational materials; however, 15 women reported lower risk of preeclampsia as an advantage of physical activity during pregnancy after exposure. Only eight participants reported less symptoms of pregnancy and easier labor as an advantage before educational materials were presented; however, 21 women reported this as an advantage after.

In regards to disadvantages, a total of 16 participants reported harm to the baby as a disadvantage on the baseline survey, and only one participant reported this as a disadvantage on the post survey; thus, harming the fetus was no longer seen as a disadvantage of physical activity during pregnancy after exposure to educational materials. Similarly, after reading the evidence-based brochure, ten participants said there were zero disadvantages to physical activity during pregnancy, whereas before there were no participants whom reported zero disadvantages to physical activity during pregnancy.

Discussion

The results of this study demonstrate evidenced-based educational brochures significantly increases knowledge regarding the benefits of physical activity during pregnancy in a cohort of women of childbearing age in rural Kentucky. Our findings are consistent with Gaston et al. (2014) who demonstrated educational information can alter beliefs and knowledge about physical activity during pregnancy (2009). We suspect that women perceived physical activity differently after exposure to the evidence-based educational information as this may have been their first exposure to this type of information. Pregnant women report receiving little or no advice about physical activity during pregnancy from their health care provider (Stengel 2012, Phelan 2011, Duthie 2013), and it is reasonable to believe that in a cohort of women who haven't been pregnant before, they are even less likely to have received any type of education about exercise during pregnancy.

Because there are many myths and miscommunications about physical activity during pregnancy, it is important evidence-based information is translated into the clinic and community. It will be particularly important moving forward that health care professionals, such as physicians and physical therapists, take a leading role in making information available to pregnant and child-bearing aged women. This can be achieved through presenting informational brochures, such as the one used in this study, in their respective clinics.

Presenting females, however, with the correct information is only the first step. The next step is to determine if they knowledge gained from the educational materials translates into their personal lives, leading to increased physical activity during pregnancy. Previous research has shown that educational materials motivate pregnant women to engage in physical activity as

well as alter their beliefs about physical activity during pregnancy. The present study is further evidence that evidence-based educational brochures could potentially lead to vast improvements in the overall health of women and their potential offspring through increased knowledge and awareness. In order for this to occur, however, women must be initially provided with the correct information.

One limitation of the present study was the possibility of bias due to the use of a convenience sample of participants. Most women included had some level of college education and most participated in regular physical activity. Thus, the sample used may not be an accurate representation of the community. However, it is believed this is strong preliminary data that show the influence of educational information on beliefs regarding physical activity during pregnancy on maternal and offspring health. If translated to more rural areas of Kentucky where women are less educated, the educational information could have an even more profound impact.

Conclusion

The key finding of this study is that evidence-based educational information can increase knowledge and influence beliefs about physical activity during pregnancy among women of childbearing age in rural Kentucky.

Table 1. *Demographic Characteristics*

Variable	Mean ± SD
Age (y)	21.4±1.5
Height (in)	64.3±2.8
Weight (lb)	138.0± 16.8
BMI (kg/m^2)	23.9±7.1

Variable	Number of women (%)
Parity	
Nulliparous	27 (90%)
Uniparous	3 (10%)
Race	
Caucasian	24 (80%)
African American	3 (10%)
Asian	2 (6.7%)
Not reported	1 (3.3%)
Education	
High School Graduate	2 (6.7%)
Some College	24 (80%)
College Graduate	3 (10%)
Post Graduate Degree	1 (3.3%)
Exercise Habits	
No exercise	6 (20%)
1-3 times per week	9 (30%)
4-5 times per week	12 (40%)
Daily	3 (10%)
No ongoing health issues	30 (100%)

WKU Exercise During Pregnancy
Improve the health of you and your baby

Content courtesy of Anca Gaston, Ph.D., Department of Health Sciences, Western University, London, Ontario

When you are active, your baby benefits too!

Physical activity during pregnancy:
- Reduces risk of acute stress and low Apgar scores at delivery
- Helps keep your baby's birthweight within a healthy range
- Reduces the risk for childhood obesity later in life
- Improves neurodevelopment

Resources and References

WKU Exercise Science
School of Kinesiology, Recreation & Sport

For more information

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COLLEGE OF HEALTH & HUMAN SERVICES

Although pregnancy can be a wonderful and exciting time, there are several health conditions that can affect you and your baby during this period. Understanding these risks and the steps that you can take to prevent and treat these conditions can lead to a healthier and more fulfilling pregnancy.

Reduce the Risks. Become Active.

Research has shown that regular exercise during pregnancy has many benefits for mother and baby by helping treat and prevent several potentially serious conditions, including:

- Gestational Diabetes
- Preeclampsia
- Labor and Delivery
- Gestational Weight Gain
- Self-image and Depression

Gestational Diabetes

Gestational diabetes affects ~ 7-18% of pregnant women. Risks to the mother include increased risk of Cesarean delivery, development of pregnancy-related high blood pressure, as well as type 2 diabetes later in life. Risks to the baby include respiratory distress syndrome, low blood calcium, and low blood sugar.
Exercise decreases your risk of developing gestational diabetes.

Preeclampsia

Potentially fatal, this condition affects ~ 10% of pregnant women and is characterized by high blood pressure and elevated levels of protein in urine. Apart from abortion, induced labor or Cesarean delivery, there is no known cure for preeclampsia. It can have very serious long-term complications for both mother and baby.
Exercise decreases your risk of developing preeclampsia.

Labor and Delivery

Exercise can lead to a shorter labor and fewer childbirth complications, including a reduced risk for Cesarean delivery.

Gestational Weight Gain

Excessive weight gain during pregnancy is associated with adverse outcomes such as miscarriage, congenital anomalies, high blood pressure, diabetes and postpartum weight retention.
Exercise during pregnancy helps keep weight gain within a healthy range and accelerates the return to pre-pregnancy weight.

Self-image and Depression

Women who exercise during pregnancy tend to have a more positive self-image and fewer depressive symptoms compared to inactive women.
Exercise during pregnancy improves mental health.

Exercise Guidelines for You

Getting Started

Even if you were previously inactive, pregnancy is a great time to make healthy lifestyle changes, including beginning an exercise routine.

Exercise Suggestions

The following activities are ideal for pregnant women as they do not rely heavily on balance and do not place excessive strain on the joints.

- Brisk walking
- Jogging
- Yoga
- Stationary cycling
- Swimming or water aerobics
- Strength training

A warm-up and cool-down should be included in any exercise program. Always check with your doctor before beginning any type of exercise program.

Exercise Intensity

According to the *Talk Test*, a woman is exercising at an appropriate intensity if she is able to maintain a conversation during exercise, and should reduce the exercise intensity if this is not possible.

Setting Goals

Begin with 15 minutes of continuous aerobic exercise three times a week, increasing gradually to 30-minute sessions on all or most days a week.

Turn your goals into reality

Setting goals is great, but you need to start thinking about how YOU can turn your goals into reality. The following are several strategies that can help you get active!

"Reasonable goals of aerobic conditioning in pregnancy should be to maintain a good fitness level throughout pregnancy without trying to reach peak fitness or train for an athletic competition."
-Society of Obstetricians and Gynecologists of Canada

"Women with uncomplicated pregnancies should be encouraged to engage in aerobic and strength-conditioning exercises before, during, and after pregnancy."
-The American College of Obstetricians and Gynecologists

Myth Debunking

The strongest barrier to women participating in physical activity during pregnancy is concerns about the safety of their unborn baby.

- Exercise during pregnancy does not increase the incidence of miscarriages or preterm deliveries.
- Exercise during pregnancy, even at high-intensities, does not negatively affect the baby's heart rate or nutrient supply.
- Exercise during pregnancy does not cause high body temperatures that could harm the mother or the baby.

Figure 1. Evidence-based educational brochure on physical activity during pregnancy

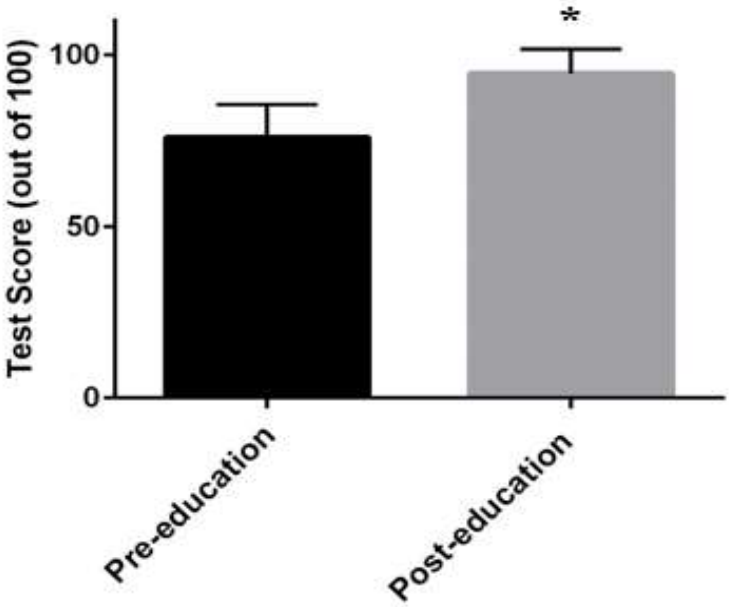

Figure 2. Test scores of women before and after exposure to educational materials
*indicates a significant difference from pre to post (p<0.05)

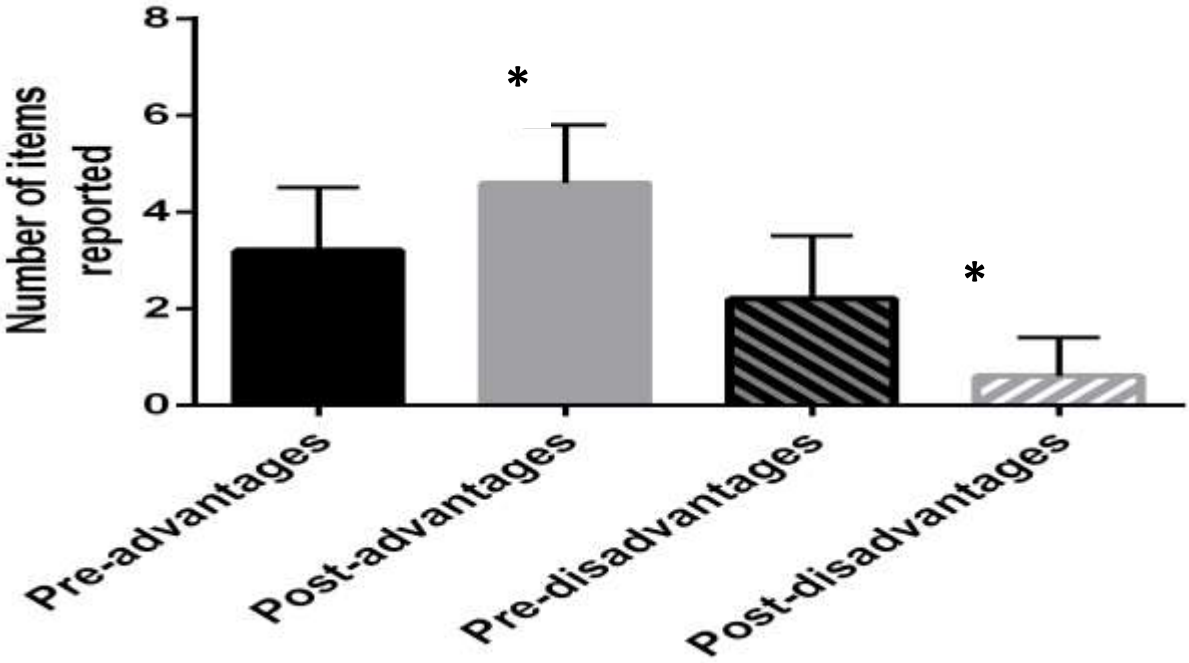

Figure 3. Number of advantages and disadvantages reported before and after exposure to educational materials
*indicates a significant difference from pre to post (p<0.05)

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(Peer Reviewed Article)

Strategies to Create a Kinesthetic Classroom via Activity Bursts

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Introduction

It's a rainy Tuesday morning in Ms. Addison's third grade class. Fifteen minutes into a lesson on adjectives she notices her students getting fidgety and some appear to be drifting off. Ms. Addison calls out, "Active position" and the students immediately put their materials down and, bounce out of their seats with hands on their knees and smiles on their faces.

"Wow class, you really look ready! Earlier this morning we followed a video as our activity break. This time I want you to skip around the room quietly," Ms. Addison instructed. "Now, can you march softly?" said Ms. Addison. "Who can tell me what those words ending in -ly are? Joseph, that is right, those are adjectives. What are they describing? Anna, BAM! They are describing how we moved. Those are the verbs right? One last time, pick your favorite way to move happily."

Why would a teacher want to integrate physical activity in their classroom like Ms. Addison? The evidence continues to mount that physical activity has both health and cognitive benefits (Mahar et al., 2006; Lowden et al., 2000). Although much more complex, the primary reason for impact on cognition is that physical activity results in increased blood flow to all parts of the body, including the brain. As with muscles and organs, increased blood flow to the brain provides it with essential nutrients such as glucose and oxygen (Ratey, 2008). Physical activity also plays a role in student learning by decreased misbehavior, increased attentiveness, and improved concentration (Mahar et al., 2006; Lowden et al., 2000). By using physical activity breaks every hour, teachers have found students will pay attention better and the incidence of off task behavior decrease (Mahar et al., 2006; Lowden et al., 2000). Teachers find that behavior problems and concentration are major barriers to learning (Mahar et al., 2006; Lowden et al., 2000). In addition, physical activity has been found to enhance memory, improve math and reading skills, and improve comprehension (Della Valle et al., 1986; Comprehension; Uhrich & Swalm, 2007; Fredericks et al., 2006).

The inclusion of physical activity typically takes place in a variety of formats. First, physical activity has been used to teach a variety of concepts, such as students performing jumping jacks to reveal the answer to a math problem. Physical activity can be used as a requisite for learning (Fredericks et al., 2006). For example, one way to incorporate a biology lesson and get the students active would be to introduce different types of trees while asking students to walk the school grounds looking for various leaves. Throughout the activity, the teacher would ask the students to collect leaves and then discuss leaf structure, tree characteristics, and so on.

Physical activity may be used to "reset" the brain via short activity breaks. These breaks can be as simple as standing and stretching to an organized game played in the classroom. Regardless of the format used to integrate physical activity, teachers will find a variety of information and websites (see Table 1 below) that can be used to get ideas on what physical

activities can be used in their classroom without losing valuable instruction time via activity bursts.

Fully integrated physical activity is also a teaching tool. Just as teachers use whiteboards, centers in which students can work by themselves or with others to operationalize the information learned in the classroom, small groups which are also designed to enhance the learning of concepts, skills, themes, or topics, and/or worksheets, they can use physical activity as a teaching tool, as well! For physical activity to be widely used to enhance learning, it is essential that the teacher see it as a teaching tool and not "just something else we have to do." Also, it is critical that the teacher understands that healthier students learn better (Della Valle et al., 1986; Comprehension; Uhrich & Swalm, 2007; Fredericks et al., 2006). Students who are physically active are healthier, and physical activity impacts student behavior, attention, and cognition (Della Valle et al., 1986; Comprehension; Uhrich & Swalm, 2007; Fredericks et al., 2006).

The purpose of the remainder of this paper is two-fold. One, to provide teachers with ideas for getting classroom breaks integrated into the classroom setting and sustaining these efforts. Second, several prominent sources available to teachers are presented.

The first step for teachers interested in integrating physical activity into their classroom is to do their research and find an activity or activities that will work well with their students and with the space provided. Next, teachers need to get the students up and moving. It will be important for the teacher to understand some fundamental management principles when introducing activities. Activity bursts are short episodes of physical activity and exercise. Routines for engaging in activity should be proportionate with the time dedicated to the burst whereas classroom routines are ideal for this purpose. Planning for physically active learning in the classroom should include consideration for neighboring classrooms, rearranging of classroom furniture, and realistic and safe movement within the available space. (Katz D., 2015).

Beyond using physical activity as a teaching tool, teachers will need to work on developing a support team either in the school or outside the school with peers. Initially, the following two steps will assist in starting this process. First, acquire support form key leaders, (your principal, vice principal, superintendent, and/or board members) whereas, changes to the culture of the classroom environment to a physically activate classroom environment requires support from school and community leaders in order to be successful. The idea of having key stakeholders within the building and outside the building will truly aid in the fight against childhood obesity and incorporating classrooms that move improving cognition of students (Della Valle et al., 1986; Comprehension; Uhrich & Swalm, 2007; Fredericks et al., 2006). In order to ensure the support of key leaders, inform them about the value of classrooms that move, and provide information on the need for and the benefits gained from this initiative. Prepare a short "speech" that you can use when you encounter key stakeholders. Secondly, form a physical activity in classrooms committee. This simply means find teachers who are integrating physical activity or are interested in integrating physical activity. It is a valuable idea to meet regularly to discuss ideas that are working, new ideas, and ideas that need refining.

Resources for Active Classrooms

There are many resources for active classrooms online and in print. Being the physical activity expert in my school I have found that my classroom teachers enjoy having a variety of options to incorporate on inclement weather days, as well as, supplementation within their rigorous curriculum. The following resources are my top 30 activity bursts! I have found these to be very beneficial to the classroom teachers in my building, and I hope they bring out the best in your classroom. These resources are a quick stress-free way to start the implementation of physical activity in the classroom and allow teachers access to finding the resources that work best in their classrooms.

Table 1. Fitness Activities for the Classroom.

ABC for Fitness Activity Bursts in the Classroom
This program shows schools how to restructure physical activity into multiple, brief episodes of activity into classrooms throughout the day without taking away valuable time for classroom instruction. (Alliance for a Healthier Generation, 2015)
Active Academics
Active Academics is a website with lesson ideas that are short "10 minute or less" activities that get students moving while practicing content standards in a variety of subject areas. (Alliance for a Healthier Generation, 2015)
Fab 5 Classroom Activity Breaks DVD's
This is a focused fitness product that is a brain activating movements, rhythms, aerobic and muscular strengthening exercises stimulate and prepare students to transition to their next classroom lesson. (Alliance for a Healthier Generation, 2015)
Fit for a Healthier Generation
This is a video series where 3-8 minute videos with physical activity breaks that require no equipment and can be done in limited space areas. Use these free videos to get your students up and moving! (Alliance for a Healthier Generation, 2015)
Playworks Playbook
This playbook was designed to inspire educators to introduce sports and physical activity regularly within the school day. This is a great method to use sports as a jumping off point for teaching life skills that can in return enhance the quality of their lives. (Alliance for a Healthier Generation, 2015)
Student Fitness Break Cards
These break cards provide ideas to assist schools in establishing an indoor walking fitness circuit. (Alliance for a Healthier Generation, 2015)
Adventure to Fitness
Students interact in moderate to vigorous activity accomplishing each week's 30-minute exhilarating mission. Designed for the general education classroom each episode aligns to core subjects; giving teachers the time and freedom to participate. (Adventure to Fitness, 2015)
Easy Elementary, Middle, and High School Exercises
KidsHealth in the Classroom offers free lesson plans to get kids active during the school day. (Alliance for a Healthier Generation, 2015)
Elementary, Middle, and High School Energizers
Energizers are classroom based physical activities that integrate physical activity with academic concepts. These are short activities that classroom teachers can use to provide activity to students. (Alliance for a Healthier Generation, 2015)

empowerME4Life
The 45-minute sessions can build on prior sessions or can be used as independent lesson modules. The course is age-appropriate and are culturally relevant. (Alliance for a Healthier Generation, 2015)
FitDeck Exercise Playing Cards
A deck of 56 playing cards containing illustrations and instructions describing different exercises, stretches, and movements. These 'no-equipment' exercises require only your bodyweight to perform. (Alliance for a Healthier Generation, 2015)
Fitness Break Videos with NBA All-Star Paul Pierce
Paul Pierce gets kids up and moving with six energizing fitness breaks students can do anywhere. The activities require no equipment and are perfect for all ages. (Alliance for a Healthier Generation, 2015)
Hip Hop Healthy Heart Program
This program has a variety of different modules. Physical challenges combine with colorful, informative worksheets and activities to energize learning and guide choices for a healthy heart. (Alliance for a Healthier Generation, 2015)
Just Move
Just Move, a component of CHALK, is an in-class physical activity program that promotes learning through moving. (Alliance for a Healthier Generation, 2015)
Just-a-Minute School Program (Jammin' Minutes)
JAM is designed to teach kids healthier lifestyle habits. JAM delivers a weekly one-minute exercise routine called the JAMmin' Minute.(Alliance for a Healthier Generation, 2015)
Operation Tone-Up® Physical Activity Program
Operation Tone-Up® Physical Activity Program is evidence-based to improve physical health. This program provides daily exercise lessons to Boost Your Brain, whereas, the exercise increases in length and difficulty. (Alliance for a Healthier Generation, 2015)
PopFit Kids Program
This program uses energizing circuits, dynamic drills, exciting games and yoga to get students up and moving. Each lesson touches on the critical aspects of the Fab Five: Cardio, Strength, Flexibility, Endurance, and Balance. (Alliance for a Healthier Generation, 2015)
Skillastics©
A series of standards-based, fitness games that allow 1 to 100 students of varying ages and fitness levels to participate and be active at one time. (Alliance for a Healthier Generation, 2015)
Action Packed Classrooms
This resource focuses on using movement and music to energize young students and boost their capacity to absorb and remember new content.(Alliance for a Healthier Generation, 2015)
Activity Works Toolkit
Students enjoy learning and moving to these 10-minute activity adventures. This resource is a series of 20 audio and video plug and play stories, set to original music. (Alliance for a Healthier Generation, 2015)
Fab 5 Physical Activity Program

Through the FAB 5 program, teachers can begin to introduce fundamental nutrition, fitness and health concepts to their students. The program provides detailed lessons, comprehensive fitness and health content, and activities to improve fitness and motor skill development while building an awareness of the lifestyle choices students make. (Alliance for a Healthier Generation, 2015)
Take 10!
A classroom-based physical activity program for kindergarten to fifth grade students. Each ten minute activity is linked to an academic learning objective in Language Arts, Math, Social Studies, Science, and Health. (Alliance for a Healthier Generation, 2015)
GoNoodle Classroom Brain Breaks
GoNoodle is a web-based game designed to bring physical activity breaks into classrooms. By keeping the games short enough to play as brain-break transitions between subjects, teachers can easily integrate physical activity into the instructional day. (GoNoodle, 2015)
Have Fun Teaching Fitness
Have Fun Teaching is a website that offers music, handouts, and videos from fitness, to math, to any other subject you can imagine. This is a great way to get your students up and moving and implementing content in the mix of getting students physically active. (Alliance for a Healthier Generation, 2015)
Teacher Toolbox
Take a Break by adding an array of physical activity breaks for students in the 6th through 12th grades to your Teacher Toolbox. These 1-5 minutes breaks should be used once every 30-60 minutes every day for all students, and even yourself. (Colorado Education Initiative, 2015)
GoNoodle Classroom Brain Breaks
GoNoodle is a web-based game designed to bring physical activity breaks into classrooms. By keeping the games short enough to play as brain-break transitions between subjects, teachers can easily integrate physical activity into the instructional day. (GoNoodle, 2015)
Activity Cards for Promoting Physical Activity and Health in the Classroom
These activity cards are research based and are a quick and easy brain break. With a variety of health, fitness, and physical activities to pull from. (Pangrazi,R., Beighle, A., Pangrazi, D., 2009)
Learning Station Music Brain Break Videos for Kids
Brought to you by the Learning Station Music Company. Go to the Learning Station Music website, type in brain breaks and there are a variety of videos and brain break ideas. (The Learning Station, 2015)
Fuel Up to Play 60
Physical Activity Breaks: These three- to five-minute physical activity ideas can be incorporated into any classroom. (Fuel Up to Play 60, 2015)
Choose My Plate
Choose My Plate has a variety of interactive games and videos that are very useful in the kinesthetic classroom setting. (Choose My Plate, 2015)

The websites and/or products in print associated with these programs provide information about how to use the materials and program components to greatest advantage. Teachers will

initially introduce the physical activities to students and eventually allow selected students to lead the activities each day. Physical Education teachers may make suggestions for modifications that facilitate physical activity opportunities for all students.

In summary, healthier students learn better. Students who are physically active are healthier, and physical activity positively impact student behavior, attention, and cognition. For these reasons, the use of physical activity as a teaching tool benefits everyone and therefore should be advocated.

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(Peer Reviewed Article)

Understanding the Intentions of Teaching Styles to Improve Student Learning in Physical Education

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Abstract

The purpose of this paper is to provide information for a better understand of teaching styles and learning intentions may improve student learning. Another focus is identifying the advantages and disadvantages of the command, practice, reciprocal, task, guided discovery, problem solving and exploration styles of teaching, as well as knowing the differences between teacher-centered and student-centered styles of teaching. A last factor discussed is being aware of the variety of teaching style inventories available for use.

Key Words: *Learning Intentions, Teaching Styles, Teacher-Centered, Student-Centered*

Introduction

An instructor's teaching style is expressed through the behaviors, characteristics and mannerisms reflected in a teaching philosophy and the role the instructor prefers to take when conveying information in a classroom. Recognizing a teaching style is important because how an instructor presents themselves to a class can have a huge impact on ones success as a teacher, and consequently, on the success of students (Alhussain, 2012).

In order to identify one's personal teaching style, it is important to acknowledge personal values toward education. Understanding teaching styles early in one's career will prove effective for both instructor and students, creating and maintaining a balance between teaching preferences, and students' learning preferences. A teaching style has been defined as comprising the roles an instructor plays in the classroom (Grasha, 1997). The way one was taught, one's abilities and beliefs about what constitutes good teaching is typically the basis for a preferred style of teaching.

A variety of styles exist for a teacher to choose from to deliver and elicit information from students. These methods are ways of organizing and presenting the learning experiences. The styles can range from a direct, teacher-centered approach to an indirect, more student-centered approach. Traditionally, teacher-centered methods have been used predominately, however in recent years the trend seems to be shifting towards a more indirect, student-centered approach. Some instructors believe classes should be teacher-centered, where the teacher is the expert and authority in presenting information. Other instructors use a learner-

centered approach, viewing their role as more of a facilitator for student learning (Alhussain, 2012).

Through an awareness of one's teaching styles, physical educators may gain a better understanding of how best to put into practice a vision of teaching and of how their teaching style can be changed, modified, or supported to improve the interactions with students. Teaching style awareness may also impact the classroom setting, activities assessment, and teacher/student interactions. After identifying one's teaching styles, instructors can analyze ways to highlight their styles to meet students' needs, as well as address any possible areas of weakness in their styles and develop a plan to counteract any shortcomings. Teaching style awareness might also reduce teacher-student conflict by matching teaching styles with the needed instruction (Felder, 1995; Oxford, Ehrman, & Lavine, 1991; Wallace & Oxford, 1992; Zhenhui, 2001). According to Kumaravadivelu (1991), "the narrower the gap between teacher intention and learner interpretation, the greater are the chances of achieving desired learning outcomes" (p. 98).

Teaching Style Inventories

Reviewing the variety of teaching style inventories used may help better understand the overall leaning intentions of different teaching styles. There are a variety of inventories used to measure different influences on teaching styles and includes beliefs, cultural background, teaching experiences, (Heimlich, 1990), the nature of the subject area (Evans, 2004; Lawrence, 1997), government curriculum initiatives (Hargreaves, 2003; Richards, 1998), and job satisfaction (Opdenakker & Van Damme, 2006).

Research has investigated a number of dimensions for measuring teaching styles for different fields for which the following list briefly summarizes: content-centered and people-centered (Robinson, 1979); proactive and reactive (Lenz, 1982); teacher-centered and learner-centered (Opdenakker & Van Damme, 2006); guided, exposition, and inquiry (May Oi & Stimpson, 1994); didactic, Socratic, and facilitative (Jarvis, 1985); facilitator and path gnomonic (Rosenfeld & Rosenfeld, 2007); reproducing and productive (Kulinna & Cothran, 2003); and holistic and analytical (Evans, 2004).

Additionally, multiple teaching style inventories briefly mentioned below. The CORD inventory (2005) was designed to gauge teaching preferences and styles. The inventory contains 12 items, each of which has four statements about ways a teacher might respond in teaching, and through the way a teacher might behave, think, or feel. The four statements are ranked to reflect how well they describe the way one teaches. One of the most common teaching style surveys is the Grasha-Riechmann inventory (1996), which assesses five teaching styles: expert, formal authority, personal model, facilitator, and delegator. Another is the Teaching Perspective Inventory (TPI) developed by Pratt and Collins (2001). The TPI assesses the teaching styles of: transmission, apprenticeship, developmental, nurturing, and social reform. Also, Mohanna, Chambers, and Wall (2006) designed the Six Staffordshire Teaching Styles Questionnaire for raising awareness of novice teachers about the following teaching styles:

- The all-round flexible and adaptable teacher can uses a variety of skills effectively and is very aware of the way the whole environment affects both teachers and learners.
- The sensitive student-centered teacher is very student-centered, prefers teaching in small group, with emotion using role play and drama, and is one not comfortable doing straight presentations.
- The official formal curriculum teacher is very well prepared and teaches according to the formal curriculum.
- The straight facts, no-nonsense teacher likes to teach the clear facts with straight talk, concentrating on specific skills, and prefers not to be involved with multi-professional teaching and learning.
- The big conference teacher likes to stand in front of a big audience and does not like sitting in groups or one-on-one teaching.
- The one-off teacher likes to deliver small bits of teaching with no support or follow-up. (Mohanna, Chambers, & Wall, 2008, p. 23).

Teacher-Centered Versus Student-Centered Styles

In addition to being familiar with the variety of teaching style surveys available, a closer look is needed to also become familiar with the teacher-centered versus the student-centered styles. Teacher-centered styles are more effective when an organized class is wanted, time is limited, have a large number of students in a class, or want the students to have a clear picture of the course objectives. However, the student-centered styles meet individual's needs of all the students by allowing them to be more involved in the decision-making. It also allows students to think for themselves which usually results in more enjoyment and a better understanding.

Since the student-centered styles require students to assume more responsibility for learning, with less direction and less structure offered by the teacher it is crucial the Physical Education teacher establish a good working relationship with the class before attempting student-centered methods. Being a positive role model, an efficient planner, effective communicator, a thorough assessor of behavior, and being consistent in expectations of students, all helps a teacher be effective. However, students must have an idea of what is acceptable and appropriate behavior before developing more independent learning.

In order for student-centered methods to be effect the teacher must be sensitive to the student's individual needs and continually identifying ways to challenge them. The Physical Education teacher must know when to ask more questions and when to move on to another activity (Nichols, 1994). Teachers have to be aware of those students who have, or have not, previously received learning experiences using the student-centered approach. Those students who have experienced learning only through a teacher-centered approach typically have difficulty adjusting to the new approach. It is a good ideal for a teacher to gradually introduce the student-centered methods approach. Also, it should only be used for short periods until students feel more comfortable in solving problems on their own (Nichols, 1994).

Typically the student-centered teaching styles is much more time consuming and requires more teacher preparation, however the benefits gained are definitely worth the extra time used developing the lesson. Additionally, it will take substantial practice for a teacher to

become comfortable and successful with using student-centered teaching styles because extra effort is needed to grasp each of the methods. The teacher has less influence in the decision-making, and the student becomes the primary decision maker as one goes across the continuum of teaching styles. Table 1 provides a list of the teacher-centered versus student-centered styles.

Teaching Styles

To some degree, choosing the best teaching style inventory depends on the field a teacher is in. Physical Education teachers, for example, should be able to proficiently and effectively use all of the teaching styles depending on what the classroom situation calls for. There are benefits and drawbacks in each of the teaching styles, therefore it is important for a Physical Education teacher to know when to use a specific style.

Felder (1995) defined Teaching Style in terms of the answers to the following five questions:
1) What type of information is emphasized by the instructor: concrete - factual, or *abstract* - *concep*tual, theoretical?
2) What mode of presentation is stressed: visual - pictures, diagrams, films, and demonstrations, or *verbal* - lectures, readings, and discussions?
3) How is the presentation organized: inductively - phenomena leading to principles, or *deductively* - principles leading to phenomena?
4) What mode of student participation is facilitated by the presentation: active - students talk, move, reflect, or passive - students watch and listen?
5) What type of perspective is provided on the information presented: sequential - step-by-step progression, or global - context and relevance? (Felder, 1995).

For the purposes of this paper the focus will be on commonly accepted teaching styles for Physical Educators which are briefly explained below and include; command, practice, reciprocal, task, guided discovery, problem solving and exploration. View Table 2 to see how teacher roles, learner roles, and learning intentions are paired with the appropriate teaching style and view Table 3 to see a list of the advantages and disadvantages of each teaching style.

Command

The command style is the most teacher-directed style and the teacher is the exclusive decision maker. Decisions on what to do, how to do it, and the level of achievement expected are all determined by the teacher. The teacher provides a demonstration of the expected performance emphasize and explains specific points of the lesson. The demonstration provides students an opportunity to visualize the skill performed accurately and observe the critical elements of the task. The teacher may guide the class through the various steps in preforming the task. The students are required to repeat the performance putting the movements together in a very precise and synchronized manner in a short amount of time. The teacher also provides helpful

cues, pace and rhythm to students when necessary (Nichols, 1994; Mosston & Ashworth, 2008).

Practice

The practice style is one of the most common teaching strategies used in Physical Education. It is very similar to the command style in the teacher makes all subject matter and logistical decisions and provides private feedback to the learners. The task will also start with a demonstration and description of what is to be achieved. Students make necessary decisions while practicing a skill, either on their own or with a group, as the teacher observes the performance and offers feedback. The difference between the command and practice style is the practice style does permit some decision making by students. (Nichols, 1994; Mosston & Ashworth, 2008).

Reciprocal

The reciprocal style allows more decision making by students. With this style the teacher develops a reciprocal task sheet describing the task to be performed and identifies what the observer looks for to see if the performer is executing the task properly. Students are the observers and responsible for viewing the performance of group members and providing feedback on the performed skill. The reciprocal task sheet may include pictures and a description of the task to assist the observer. It should also explain the role of the performer and observer, as well as give the amount of time or number of trials to be given in each practice session. The task is typically initiated with a demonstration, a description of the skill, and an interpretation of the reciprocal sheet. After which, one student performs a task as their partner observes the performance and records whether the proper criteria has been met. An observer can also provide feedback to help improve their partner's performance of the skill. After the performer has properly executed a task a specified number of times the partners switch roles. The teacher observes students and clarifies the tasks if needed. (Nichols, 1994; Mosston & Ashworth, 2008).

Task

The teacher decides the content in the task, including what will be taught, however it allows students some decision making opportunities, and provides them with a chance to work at their own pace. The teacher designs tasks leading up to the unit outcomes. The tasks are then arranged into a group of activities, each at a different level of difficulty, in which student's progress to achieve the final task by working independently and checking their own performance against the criteria provided by the teacher.

- The first level of difficulty should be below the most poorly skilled students and activities should gradually increase to a level above the most highly skilled students. Students have more decision-making responsibility as the level of difficulty increases but the teacher presents a task divided into several levels of achievement.
- The second level is when the teacher looks at the ability level of individual students and based on their skill level the teacher assigns specific tasks.
- The third level (highest level) requires the greatest amount of decision-making and responsibility by students. Each student is given a task booklet describing all the tasks

to be completed and chooses the tasks they wish to practice and are responsible for working on each task in the unit (Nichols, 1994; Mosston & Ashworth, 2008).

Guided Discovery

The guided discovery style crosses over into the student-centered section of the continuum. This approach continues to use teacher-designed movement tasks, however, it is done in a way that allows students to accept guidance to discover the answer and then make individual decisions about how to move (Mosston & Ashworth, 2008). In other words, the teacher defines the intended outcome of the movement response, but does not determine how it will be attained. This method is useful if a teacher is trying to get students to discover the most desirable movement for a certain task or to develop a new skill (Nichols, 1994). This allows students to experiment with different movements in order to achieve the desired goal. It will also increase their understanding of why certain movements are more advantageous and effective than others. This method is also an ideal way for students to discover possible strategies of specific games (Rauschenbach, 1996). The idea behind this method is the students make up their own minds about how to move, however limitations are enforced that narrow students choices, thus limiting the range of movement responses. This eventually leads to the single desired outcome a teacher wants. This method permits the students to experiment with a movement, make meaningful comparisons with other movement responses, and analyze the possible motor responses including a concept, principle, relationship or rule (Nichols, 1994; Mosston & Ashworth, 2008).

Problem Solving

The problem solving style somewhat mirrors the guided discovery style except in guided discovery there is only one proper way of performing the final movement or task. Therefore, the final outcome would always be the same. The problem solving style allows for several solutions to be the end result. A teacher presents a movement challenge with specific guidelines limiting the use of space, directions, or movements permitted. The goal is not to find a single correct answer as with guided discovery, instead the objective is for students to find many different solutions to the challenge. Any movement response that fits within the guidelines is acceptable because the production of multiple ideas rather than any singular idea is the goal (Nichols, 1994; Mosston & Ashworth, 2008).

Exploration

Exploration is the most student-centered style on the continuum because students are permitted to move as freely, while staying within the limits of safety. The exploration style is similar to problem solving, except students are exploring movements in a less restrictive and more natural environment with much less teacher direction. Exploration may be very beneficial when introducing concepts, ideas, new equipment and is also a good way to obtain responses and ideas from students (Nichols, 1994).

Conclusions

Physical Education teachers have the opportunity to implement several teaching styles into the classroom. The styles vary in terms of who makes the decisions of what will be learned and how the learning will occur. Some styles are teacher-centered, whereby the teacher is the primary decision maker, and others are more student-centered allowing the students increased input on what they do.

It is difficult to say which style offers the maximum potential for learning because not all students will receive optimal learning by use of the same style. Certain material may be presented really well with one style and not as well with another. The availability of time is another concern affecting the chosen style.

A Physical Education teacher does not need to design each activity or every component of the class to reach every type of learner. However, the class assignments should be diverse enough to reach as many students as possible. Below are a few ideas that may help achieve the goal:

- Use images, diagrams, demonstrations, screen projections.
- Provide oral and written explanations.
- Offer a guide summarizing information and gives directions to repeat the demonstrated skills.
- Use some class time for active student participation.
- Encourage students to work in groups.
- Periodically pause to give students time to process what you have shown them and ask questions.
- Include both conceptual and concrete information.
- Explain abstract ideas and then try to connect the ideas to something in the "real" world.
- Present material in a logical, sequential manner.
- Take time to point out connections between this information/process and other areas where the knowledge is relevant.

Lastly, the Physical Education teacher should always try to meet individual needs and personal differences of each student. However, the important thing is for the teacher to be able to determine what style is most appropriate in a given situation and apply it with determination and confidence.

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Table 1: Teacher-Centered Versus Student-Centered Styles

Teacher-Centered Styles	Student-Centered Styles
Command	Guided Discovery
Practice	Problem Solving
Reciprocal	Exploration
Task	

(Nichols, 1994; Doherty, 2010)

Table 2: Teaching Styles, Teacher and Learner Roles, & Learning Intentions for PE

Teaching Style	Teacher's Role	Learner's Role	Learning Intentions	Physical Education Example
Command	Makes all the decisions	Follow decisions on cue	Physical: Motor Skill Development	Preforming a tennis serve as directed by the teacher
Practice	Make all subject matter and logistical decisions and provides private feedback	Individually practice a memory/reproduction task	Physical: Motor Skill Development	With a partner, preform a two handed chest pass in basketball
Reciprocal	Make all subject matter, criteria, and logistical decisions, provides feedback	Work in partnership relationships	Social: Working With Others Cognitive: Observing, Analysis	Peer evaluation of badminton serve
Task	Make all subject matter, criteria, and logistical decisions	Work independently, checks their own performances against criteria prepared by teacher	Social: Assessing One's Own Performance	Free throw in basketball using a criteria form
Guided Discovery	Make all subject matter decisions, including target concept to be discovered and sequential design of questions	Discover the answers	Cognitive: Discovery Learning	Using different techniques for the volleyball serve
Problem Solving	Make general subject matter and logistical decisions	Make decisions about investigating subject matter: produce questions leading to a specific focus; produce questions resulting in identifying process and procedures; discover solutions and movements; designate performance criteria	Cognitive: Independent Thinking Social: Confident, Group Work	Devise co-operative guidelines for more participation in kickball
Exploration	Accept the student's readiness to make maximum decisions in the learning experience, be supportive, and participate according to student's requests	Makes all decisions	Cognitive: Planning, Selection, Application & Understanding Social: Personal Responsibility & Independent	Making individual decisions about a fitness program

(Doherty, 2010; Mohanna, et al, 2008)

Table 3: Advantages and Disadvantages of Each Teaching Style (Nichols, 1994; Doherty, 2010)

Style	Advantages	Disadvantages
Command & Practice	* Provides a very direct path to the objective. * Gives students a clear picture of how the expected performance is to be attained. * Little wasted time in organizing class, thus efficient and effective way to teach skills. * Very beneficial when dealing with large crowds or limited time.	* Insensitive to individual differences and needs. * Demonstrates one way of performing a skill or task and only accepts one response in return. * Content is generally aimed toward students with average ability. * Individual student needs are not met for those who lack skills needed to perform task. * Does not encourage original or innovative thinking by students.
Reciprocal	* Clarity of the task for everyone * The opportunity for feedback with each trial. * Students observe one another and provide feedback on partner's performance. * Contributes to understanding and comprehension of task at hand. * Makes students assume responsibility for learning of others. * Improve their communication skills. * Promote patience and tolerance. * Develop analytical skills.	* The complexity of the task. * The developmental level of students. * Students may not be able to properly analyze another's performance. * Feedback may be inaccurate. * Students may have difficulty working with others and accepting feedback in a positive and helpful manner. * Can be severely time consuming during the beginning stages as students adjust and feel comfortable in the new role of observer.
Task	* Is very favorable for recognizing particular needs and allowing for personal differences. * Grants students the freedom to choose a task to work on and the level to start. * Level of success attained is not known by anyone else. * Students work at a level they feel comfortable. * Gives teacher a chance to move about offering assistance to those needing it.	* Students decide what activities to work on. * Giving students this much freedom only works if they are willing to be responsible for carrying out the task. * Teacher must be aware of students not accomplishing the task. * Provide assistance in selecting the appropriate level to start.
Guided Discovery	* Entice students to think for themselves. * Supports development of positive self-concept. * Each student successfully finds an answer to the movement challenges. * Equips students with what is needed to implement what has been learned from other movement situations.	* Requires a tremendous amount of time to work. * Takes time before teacher can guide students to the proper movement sequence. * Patience is a vital quality the teacher must possess.
Problem Solving	* Involves a great deal of cognitive activity. * Allow students to display individualism through movement responses. * Allow students to work at a pace in which they can comprehend what's happening. * Helps student develop problem-solving skills, and enhances creativity.	* Time consumption involved in developing lesson and reaching the lesson objective. * Teacher has to anticipate possible solutions for it to be successful. * Teacher must react on the spot to help particular students expand their movement possibilities.
Exploration	* Best used with young children involved in their first physical education experience. * Allow students to discover capabilities while working on their own. * Enhances creativity within the movements. * Designed to have everyone experience instant success. * Provides students with increased confidence in their ability to move.	* Inappropriate if a particular movement outcome is desired.

(Peer Reviewed Article)

Wiihabilitation for Improving Balance in Clinical Populations

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Abstract

It is estimated that 75.4 million people are affected by a condition such as aging, stroke, Down syndrome or Parkinson's disease that limit their physical capabilities (CDC, 2013). Limited physical capabilities also have a negative effect on the overall level of functional performance. The most common compromised component of functional performance is balance. Balance is important for performing activities of daily living (ADL's) such as walking and stair climbing. Impaired balance can increase the risk of falls leading to injuries such as bone breaks and muscular injuries. A new interactive form of physical therapy called Wiihabiliation (Wiihab) is currently being used to improve balance. Wiihab is played on a Nintendo Wii gaming system that uses motion-activated remotes and a Wii balance board to control the game. With the help of a physical therapist, patients with impaired balance can use Wiihab to effectively improve functional performance. The purpose of this paper is to describe how Wiihab may be an effective therapy for improving balance in specific clinical populations.

Keywords: gaming, balance, therapy, clinical

Introduction

Many populations in the world must live with conditions that negatively affect components of functional performance. An important component of functional performance affected by conditions such as aging, stroke, Down syndrome, Parkinson's disease is balance. Balance is negatively affected in these conditions due to weakening of the anterior and posterior muscles that affect core stability, such as the rectus abdominus and the multifidus. Balance is also particularly important for completing activities of daily living (ADLs), such as walking from one area to another, standing up from a seated position, and dressing oneself. In addition, balance has a major effect on an individual's ability to live independently or instrumental activities of daily living (IADLs).

There are many modalities that physical therapists can use to improve balance, but a new modality, Wiihabilitation (Wiihab), is capable of incorporating technology into physical therapy sessions Wiihab(Anderson, 2010). Wiihab uses a Nintendo Wii Gaming System to assist patients in their rehabilitation. Wiihab is has been shown to be effective for improving balance when used by physical therapists for patients of Down's Syndrome, Parkinson's Disease, stroke, and aging. Patients have been found to enjoy therapy more when Wiihab is used because it adds enjoyment to a normally frustrating experience (Gargin, 2010).

Balance can be improved through Wiihab by using a Nintendo Wii gaming console, a Nintendo Wii Balance Board, and many forms of motion-activated remotes to force patients

to move their body to control the game. The Nintendo Wii gaming console plugs into the television to allow the patient to see and hear the game while playing. If a Wii Balance Board is used, the board lies flat on the floor while the patient stands on it. Using the motion sensors in the board, the player can control the game by shifting their weight forward, backward, and side to side. The Wii remotes are motion controlled, so when the participant moves them around it incorporates the movement into the game. The Wii remotes can also be placed into foam objects that are shaped like a tennis racket, baseball bat, or golf club to increase the realism of the games. Wii games were originally designed for people to use in leisure activities, but according to Cyarto (2011), "Although often marketed as something for entertainment, the Wii is increasingly being used by the NHS (National Health Service) as form of a rehabilitation therapy."

Wiihab can be used in many settings such as an outpatient physical therapy clinic, an inpatient hospital area, and even with in-home care (Gargin, 2010). The Wii gaming system is extremely portable and easy to set up; the console is turned on with just the touch of a button and it is ready to be played. This makes the Wii system simple to use at home for individuals of all ages whether it be for rehabilitation purpose, leisure purposes, or for those who seek to stay physically active. One goal is for patients to successfully complete physical therapy and then continue to improve their balance at home using Wiihab.

While tennis, baseball, and golf are just a few balance-improving Wii games, the most popular Wiihab game is Wii Fit. This game allows participants to build their own avatar that is set to their own height and weight and can track progress. The game tracks weight change, scores in games, and many other statistics determined by a "Body Test". The Body Test can be performed as often as needed to track improvements in body control, body mass index (BMI), and balance. Without using Wiihab, the therapist must manually record the number of exercises performed and the number of repetitions in a repetitive exercise. With Wii Fit, there are balance games for a patient to play such as *Soccer Heading, Ski Jump,* and *Table Tilt*. These games require the participant to have very steady control of their balance. For example, while playing the Soccer Heading game the participant must move their avatar left to right by shifting their weight to head a soccer ball that is thrown to each side of the player. As the participants progress, the games become more difficult, requiring more balance. In the Soccer Heading game, the quantity and speed of the soccer balls increase towards the player; causing the participant to move faster and with more precision, while shifting their weight on the board. There are also fun games that can also be used to regain balance such as Penguin Slide, Dance Revolution, and many more.

Wiihab not only helps patients improve their balance, it also drives the patient to work harder during therapy sessions. If a patient can see their progress on the screen, then they may be motivated to perform a higher level. This is also true if there is a group of patients performing Wiihab together. An individual's sense of competitiveness can make a patient want to outperform another person, which will drive them to work harder. This competitive drive benefits the patient because they can make more significant improvements at a faster rate.

Physical Therapists deal with a wide variety of patients including those suffering from Down syndrome. Down syndrome is a condition rresulting from an extra number 21 chromosome in the majority of the body cells, (Hovorka, 2006). These patients face problems in both fine and gross motor control and have a delay in postural control. These problems cause the patients to

have balance problems and a decreased reaction time to falls (Hovorka, 2006). A Down syndrome patient usually goes to physical therapy to improve these issues, but now therapists can incorporate Wiihab into the patient's plan of care. To improve balance, the patient must work on increasing their level of strength and approximation or using coordination skills to predict where the body should move. These aspects are usually improved through games that are aimed at having fun, while also working on balance. Most patients with Down syndrome are younger due to the short life expectancy associated with this condition (Hovorka, 2006). The population of younger patients tends to become disinterested in repetitive physical therapy modalities such as walking on a treadmill, but respond well to Wii games, such as the Tight Rope Walk (Hovorka, 2006). During the Tight Rope Walk game, the participant's avatar is placed on a tight rope and must walk across without stumbling or falling. To complete this game, the player attempts to hold a steady center of mass, while walking in place on the Wii Balance Board. If balance is not held, the avatar will sway left and right. As the levels go higher, the distance increases requiring the participant to maintain balance for longer periods of time. Using these games during Wiihab has shown that this modality can result in significant improvement in balance and postural stability in these patients (Hovorka, 2006).

Another condition that can negatively affect a patient's balance is Parkinson's disease. Patients with Parkinson's disease use physical therapy to improve their balance by building up muscle mass to control some of effects of the disease. Wiihab assists in this aspect because the games can be used to make the patient practice their balancing which in turn builds muscles to improve the individual's coordination. According to Herz (2013), patients with Parkinson's disease showed an enhanced quality of life after taking part in Wiihab as well as short-term improvements in muscular strength and endurance. Another complication related to Parkinson's disease is the patient may develop worsened posture resulting in a forward or backward lean. Wiihab can assist with this complication by focusing on the muscle group that would reverse the lean and strengthening it. If it is a forward lean, the posterior back muscles must be strengthened, but if it is a backward lean then the anterior abdominal muscles must be strengthened. These large muscle groups can be strengthened by performing activities that consist of the patient holding a standing upright position for a period of time. This action will train the posterior and anterior muscles to hold the individual in this postural position.

Wiihab can also be useful in patients that have experienced a stroke. Stroke patients can be difficult to assist in physical therapy mostly due to their lack of motivation and frustration. Because stroke patients may find traditional rehabilitiion dull and repetitive, as well as the stretching and exercise painful, playing Wii games may allow them to focus more on playing the game and less on the therapy (Cyarto, 2011).

This could be a key factor in progressing the individual to a point where they can see the benefits of the physical therapy sessions.. Wiihab is subtly improving the patient's autonomy, or self-determination. A specific game that is used with stroke victims is Ski Jump. In the Ski Jump game, the participant must stand on the balance board steadily as their avatar travels down a ramp towards a big jump at the end. When the avatar exits the ramp, the participant must extend their knees while maintaining steady balance as if they were exploding off the jump.

Balance can also be greatly affected by the aging process. Wiihab can help an older adult improve their loss of balance by strengthening muscles all over the body which will help the individual hold themselves at their center of mass more easily (Massie, 2010). Maintaining the center of mass is the key for an individual to maintain balance, when the center of mass shifts, the individual has a higher risk of falling and injuring themselves. It has been shown that approximately 30% of older adults will experience a fall each year according to Akin (2015). Falls create an increased risk of a severe injury to occur. Wiihab can help to prevent these issues by using games that an older adult will enjoy playing. A game that many older adults may enjoy is called Walk It Out. The "Walk It Out" game requires the use of the Wii Balance Board because the participant will stand on it while walking in place to control their avatar. Patients can choose the scenery of the walking path and choose preferred music while walking, thus individualizing the game. Games such as this may prevent falls by helping teach patients to maintain their balance while being mobile.

Before physical therapists began using Wiihab to treat patients with balance impairment, they relied on traditional modalities. These therapy sessions consisted of baseline balance assessment to determine their level of risk and to develop a future plan of care. Therapy sessions specified for future care provide the therapist information to compare the patient's performance with the normal range of balance. After determining the patient needs improvements in balance, the therapist will construct a plan of care to meet the needs of the patient. This plan of care will consist of repetitive exercises such as walking back and forth between the balance bars, multiple leg strengthening exercises, and many core strengthening activities. Some of the most popular exercises for balance improvement are having a patient walk on a treadmill with assistive bars for a length of time or have them attempt to balance on a foam balance pad. While these exercises are efficient at practicing stability and building muscles vital to maintaining balance, they tend to become tedious. This lack of interest in the program may cause the patient to lose motivation and not want to continue with future sessions. With Wiihab the patient can change the pace of their therapy session by switching between games or competing with a partner.

There are many benefits of Wiihab, but there are some potential downsides, especially for older patients. While Wiihab is effective for older patients, they may become easily frustrated while learning to use the Wii gaming system because of the unfamiliarity with various types of technology. Another downside is the possibility of power surges or system failures related to the technology. These events could cause all patient progression data to be erased from the server memory. Frustration from older adults and the possibility of erased data, however, does not diminish the overall utility of Wiihab for balance rehabilitation.

Wiihab has been shown to be an extremely effective modality to improve balance in individuals affected by Down syndrome, Parkinson's disease, stroke, and aging. Improved balance substantially reduces the risk of serious injuries from falls. The deteriorating balance that accompanies these conditions may be treated using more traditional modalities, but Wiihab offers a more entertaining, engaging, and organized option.

Recommendations

Wiihab can be implemented by a variety of therapists, trainers, and other health professionals in almost any setting appropriate for the patient. The wide variety of Wii games, the increase

in self-determination, the numerous physiological benefits, and the enjoyment patients experience make Wiihab an exciting therapeutic modality.

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(Peer Reviewed Article)

It's not serious and I'm not at Risk: Rural College Women's Perceptions of Indoor Tanning

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Abstract

Few studies have assessed rural Kentucky college-aged women's risk perceptions of indoor tanning and skin cancer. The purpose of this study was to use the Health Belief Model as a framework to: 1) understand rural Kentucky college-aged women's risk perceptions of indoor tanning and skin cancer; and, 2) to identify the motivating factors, potential perceived benefits, barriers and cues to action that may influence rural Kentucky college-aged women's risk perceptions related to tanning bed use. This study served as formative work for future intervention design. Twenty four Caucasian women aged 18-25 from a Southeastern Kentucky University participated in semi structured interviews during March 2014. Interviews were audio-recorded and transcribed verbatim; analysis of the interview transcripts was done using framework analysis and a concept-driven approach to coding was used. After analysis of the first few interviews, the authors met to discuss and finalize the coding frame, using the HBM and tanning literature as a guiding framework. Rural, Kentucky college-aged women have complex risk perceptions of skin cancer and perceived several 'health' benefits of indoor tanning. Additionally, positive appearance and experiential attitudes were identified as strong motivators of indoor tanning. Social relationships and seasonal events were identified as cues to action. Few barriers to indoor tanning were elicited. This study has three major implications for future interventions. First, appearance based interventions may not be salient in this population. Second, changing norms of indoor tanning and tanned skin in important others (moms and sisters) who also tan should be included in future interventions. Third, timing of skin cancer interventions on rural Kentucky college campuses should be a consideration in future work.

Introduction

Skin cancer, the result of excessive exposure to ultraviolet (UV) radiation, is the most common cancer in the United States (American Cancer Society, 2016). Skin cancer incidence and mortality rates are increasing in the U.S., especially among non-Hispanic whites [Department of Health and Human Services (DHHS), 2015]. Estimates from the American Cancer Society suggest that 76,380 cases and 10,000 deaths will occur in 2016 from melanoma, the most serious form of skin cancer (American Cancer Society, 2016). Furthermore, in Kentucky, skin cancer rates are higher than national averages (see Table 1) (National Cancer Institute, 2016).

Further exacerbating high skin cancer rates is a large population of indoor tanners who intentionally expose themselves to UV radiation for a tanned appearance (Wehner et al., 2014). This behavior is common among young non-Hispanic, Caucasian females aged 18-25

(Centers for Disease Control, 2016). Previous national surveys indicate that non-Hispanic white women aged 18-21 had the highest percentage of indoor tanners (32%) followed by women aged 22-25 (30%) (CDC, 2015). In order to reach this group of young women, tanning salons are strategically located near college campuses, with some universities housing tanning facilities on campus (Pagoto et al., 2015).

The risk association between skin cancer and indoor tanning depends on frequency of tanning and the age of initiation. For example, tanning before the age of 35 may cause 59% excess risk, and tanning for more than a year carries 61% excess risk (DHHS, 2014). Additionally, a recent systematic review and meta-analysis suggests tanning for 10 or more sessions has the strongest association with melanoma (Colantonio, Bracken,& Beecker, 2014). The dose response relationship between indoor tanning and skin cancer is alarming considering most indoor tanners are Caucasian women aged 18-21 and had, on average per year, 27.6 tanning sessions (Hartman, Guy, Holman, & Plescia, 2010). Furthermore, despite an established relationship between indoor tanning and skin cancer, many young women continue to tan. One study found that 60% of their college student sample agreed that tanning beds are carcinogenic yet many were current or past tanners (Playforth, Larkin, & Schwartz, 2014). Similarly, another study found Midwestern college students to be knowledgeable about tanning risks but tanned despite this knowledge (Dennis, Lower, & Snetselarr, 2009).

In summary, engaging in indoor tanning despite adequate knowledge of risks is counterintuitive and suggests a complex degree of difficulty in designing behavioral interventions. Thus, it is important to understand college-aged women's indoor tanning practices as well as their perceptions of risk related to this behavior, particularly in the state of Kentucky where skin cancer rates are higher.

Theoretical Framework

The Health Belief Model is based on the assumption that individuals privilege not being ill and will act, when cued, to prevent disease (Rosenstock, 1974). The major constructs of the HBM include: perceived threat (combination of perceived susceptibility to and perceived severity of a disease); perceived benefits of a protective action; perceived barriers to performing a preventive behavior; and, cues to action for performing the behavior, such as media or interpersonal messages (Rosenstock, 1974).

Previous research reveals utility of the HBM to better understand risk perceptions related to a variety of health behaviors. For example, the HBM was used to explore varying risk perceptions of skin cancer and sunscreen use of female soccer players (Butera, Clark, Georges, & Bush, 2015). Related, perceived severity and risk, along with other theory constructs, were used to assess adolescents' perceptions of lower risk of the Human Papillomavirus (HPV) and other sexually transmitted infections after receiving the first dose of the HPV vaccine (Kowalczyk Mullins et al., 2012). Additionally, the HBM was used to explore vaccination delay or refusal among parents of children aged 24 months; results suggested that parents who opt to refuse or delay vaccination are less likely to perceive their child is susceptible to vaccine preventable diseases and do not perceive vaccines to be efficacious for prevention of a health threat (Smith et al., 2011). Overall, the HBM provides a framework for better insight into counterintuitive risk perceptions and an established health threat, such as that with college-aged women and indoor tanning.

Present Study

Rural Kentucky college aged women may be more vulnerable to skin cancer because this populous may tan more than other female groups for several reasons. Geographically speaking, the majority of Kentucky's counties are rural, and rural young women may be more inclined to tan compared to urban young women (Quinn et al., 2014). Related to geographic location is access to tannings salons; regional areas such as the Midwest and the South are denser with tanning salons compared to other areas (Choi et al, 2010). Moreover, this population may have unique risk perceptions, compared to other women, of indoor tanning and skin cancer. Therefore, the purpose of this study was to answer important questions about rural Kentucky college-aged women and tanning: (1) what are the unique risk perceptions of this population related to indoor tanning and skin cancer? and (2) What are the motivating factors, potential perceived benefits, barriers and cues to action that may influence rural Kentucky college-aged women's risk perceptions related to tanning bed use? Understanding the results of these research questions will help to build more effective and relevant interventions.

Methods

Recruitment and Participants

Participants were recruited from a rural Kentucky university. All study procedures were approved by the University's Institutional Review Board. Approved flyers distributed around campus and recruitment speeches to general education classes about the study served as the recruitment procedures. Interested students contacted the research team via e-mail; interviews were scheduled with participants once study criteria were confirmed. Female students who have had skin cancer, who were not aged 18-25, and had not tanned indoors in the past year were excluded. Participants received $10 compensation for their participation. See Table 2 for participant demographics and tanning practices.

Procedures

All study procedures took place in a private room on campus. Participants first completed the informed consent process. Next, they completed a short survey which included questions on demographics, tanning practices, tanning beliefs and attitudes. Finally, the semi structured interviews were conducted individually; each lasted about an hour and were conducted during March 2014. All three authors, or at least two, were present for each interview. While the interview was conducted with one author, the other(s) took notes and observed. All participants answered every interview question (including responses of "I don't know"); the interview guide included twenty questions (see Table 3). The interview questions focused on skin cancer knowledge, risk perceptions of indoor tanning and benefits of indoor tanning. All interviews were recorded and transcribed verbatim; pseudonyms were created for participants to ensure confidentiality.

Data Analysis

Data analysis was an ongoing process. All authors, or at least two, attended the interviews and would compare memorable findings and observations after each interview, often termed investigator triangulation (Stake, 1995). At the completion of data collection, all three authors analyzed the interview transcripts using framework analysis whereby the authors listened to the audio recordings and read the transcripts multiple times (Ritchie & Spencer, 1994). A concept-driven approach to coding was used (Kvale & Brinkman, 2009) whereby line by line coding was conducted. After analysis of the first few interviews, the authors met to discuss and finalize the coding frame, using the HBM and tanning literature as a guiding framework. During this discussion, initial codes were identified as categories which led to the final coding index applied to the rest of the interview analysis.

Results

Skin Cancer Knowledge

Overall, most participants understood basic skin cancer risk factors, such as demographics. When asked who in the population is most at risk for skin cancer? Cathy stated, "I would think fair skinned people. Maybe people with blonde hair, blue eyes, red hair." Shelby echoed similar ideas when she stated "probably people who are fairer skinned…" Susan also agreed when she said, "redheads because they get sunburned really easily." Kennedy stated that she thinks "really pale white people…" are most at risk.

In addition to demographics, most participants understood UVR exposure from tanning beds was a risk factor for skin cancer. Shelby stated that "people who do go to the tanning bed and get burned…" are more at risk for skin cancer. Moreover, some women were aware of the impact of the frequency of tanning, whether indoors or outdoors, has on skin cancer risk. For instance, Lacy said, "maybe the more you've tanned, the more…exposure you've had to cancer causing [agents]." Additionally, some young women also identified the interacting effects of demographic risk factors and behavior risk factors. For example, Melinda stated those most at risk were "…younger [people] and I would probably say Caucasians, just because they're typically who you see at a tanning salon." Tiffany added, "Probably really [light] skinned people who go tanning all the time."

Skin Cancer Risk Perceptions

Within the HBM framework, participants conveyed differing degrees of perceived severity and susceptibility to skin cancer related to their tanning bed use. During data analysis, the authors realized an emerging trend whereby participants had low short term or long term severity, and high or low susceptibly which is specific to this behavior. Results are presented for each category of susceptibility and severity.

Skin cancer is 'fixable': Participants categorized in this group had a short term perception of skin cancer severity. For example, Melissa shared "I don't even think of [skin cancer] as a bad thing…because it's just a little spot [that can be] removed." Similarly, Priscilla stated, "…I don't think [skin cancer] is that serious because you can get it removed and go on about your life." Kennedy echoed thoughts when she said, "I don't really think [skin cancer] is that serious because if it was that serious then girls would not go tanning…" Gretchen explained that her view of skin cancer was not serious because her "papaw gets those spots on him…he

just goes and gets them frozen off…" The responses espoused by tanners represent strong perceptions of skin cancer as not severe and easily fixable in the short term.

Skin cancer occurs later in life, not now: Participants in this group viewed skin cancer as a long term risk. As such, their perceptions of the severity of skin cancer were not high. One illustration of this perception is Jackie, who acknowledges skin cancer is serious but not worrisome: "I know [skin cancer] is a big deal whenever you get it, but I just don't think of it a lot right now." Likewise, Susan shared "I realize that everything has a cause and effect, so me tanning now will probably do something in the future." Shelby's perception of skin cancer echoed that of other young women: "I mean [skin cancer] is something I kind of worry about…but it is kind of off in the future." Virginia shared, "I know [skin cancer] can be serious because tanning increases your risks of getting it, but I don't think a lot of women my age who tan think about it." These long-term risk perceptions of skin cancer suggest some rural, college-aged women are futuristically concerned about skin cancer, but their long-term perception of skin cancer severity is weak and is not enough to drive current behavior.

Current tanning practices can be worrisome: Participants in this group expressed susceptibility to skin cancer in the short term, but were not extremely susceptible. Lacy illustrated her short term view of skin cancer susceptibility when she said, "I do freckle easily…I have thought about [skin cancer]. I do think about it." Tiffany shared her belief that "everybody's susceptible but I don't think that my behaviors would make me 100% susceptible because I don't go tanning a lot." Kim expressed that "at this age, I think nothing bad is going to happen to me… but I think going to the tanning bed does make more room for me to get skin cancer." Similarly, Priscilla said, "I'm sure I'm pretty susceptible at the rate I use the tanning bed. But…if it was going to happen to me [skin cancer], it would have already happened to me." Overall, some women identified as susceptible to skin cancer now, however; their risk perceptions were discounted and they continued to tan.

Tan now and worry later: Rural college-aged women categorized in this group had long term perceptions of skin cancer susceptibility which was defined as feeling futuristically susceptible to skin. For example, Tricia shared that "by the time I have those [moles] and by the time I'm that age, they'll have a cure for [skin cancer]." Likewise, Nancy said, "…it runs in my family so I feel I am going to get it later in life, but I'm not worried about getting sick or being sick until I'm actually sick." Valerie also shared that "I know tanning beds are bad for me…I know it's possible I could get [skin cancer]". Emily echoed similar thoughts when she stated, "…the damage now causes the cancer later so I think that [skin cancer] is not as prevalent in our society in the 21-25 [age group] but…the damage is seen later in skin cancer…" These long term susceptibility perceptions suggest that some rural, college-aged women may feel vulnerable to skin cancer later in life, but these perceptions do not influence current tanning practices.

An interesting and unexpected finding was that a few women stopped tanning or reduced their tanning behavior. For instance, Cathy shared that she had "stopped tanning because I realized it was bad and I don't want to put my skin through that and I don't want to be wrinkly." Similarly, Shelby cancelled her tanning membership due to the "chances of getting cancer and being sunburned; your skin is going to be ugly whenever you get older." Despite the majority of girls saying they don't feel scared, a few had begun to realize the risks.

Overall, these rural, college-aged women had a range of risk perceptions. However, most did not have strong enough risk perceptions of skin cancer to influence their current tanning practices. Additionally, many among this sample thought of skin cancer as 'easily fixable' and a health issue to be concerned with later in life.

'Health' Benefits of Indoor Tanning

Several benefits of indoor tanning were elicited from participants. Improved appearance was the predominant benefit young women described. For instance, Tiffany likes to tan because "I just feel that [when] I'm really pale, I look sick…[and tanning] gives me color..." Additionally, Priscilla shared her motto of "fat looks better tan." Similarly, Jackie stated that "It makes you look good if you like to be tan…[and] I like to be tan." Furthermore, several young women pointed out improvements in skin appearance, such as less acne. For instance, Emily stated that, "[tanning] dries my skin out a little bit so I have a little less skin problems like pimples or oily skin." Likewise, Melissa shared that tanning "clears up my skin." This finding is interesting because the participants cited improved skin as a *health* benefit of tanning.

Another tanning benefit described was the experience of tanning. Many women had positive experiential attitudes towards indoor tanning. For example, Tricia shared that tanning is a stress relief for her: "After a long day of work …you can put your headphones in and you just lay back and put wind on you. It feels like you're at the beach." Susan agreed when she said, "[tanning] feels like you're at the beach …it's just really relaxing…" Shelby shared that "whenever I lay in the tanning bed…it is really a stress reliever." Related, two young women in this sample used tanning to help with mood disorders. For instance, Annie shared that "I was going through a stage of depression recently and especially with the weather [tanning] made me feel better." Additionally, Tammy shared "I have seasonal affective disorder so like the sun and having the warmth. Yeah, the warmth, it was really relaxing…"

Although many women enjoyed the tanning experience, some women did not. Interestingly, although these women clearly did not enjoy tanning, they *continued* to tan anyway suggesting a strong motivation to obtain a tan appearance. Valerie is one such example of this attitude: "I actually hate [tanning]. Most of the time I don't have time for it and it's tedious." Emily also shared that she "gets hot and bored….I feel sweat all over me." Additionally, Kim "hate[s] going to the tanning bed but I do it… I don't enjoy going; I just go." Similarly, Virginia stated, "I don't really care for [tanning] because you get all hot and sweaty and you have to wait in line for a while to go and it's just boring and monotonous after a while." The benefits outlined here reveal that tanning bed use provides many perceived benefits for young women that may serve as internal motivators to continue the behavior.

Few Barriers to Indoor Tanning

Few barriers to indoor tanning were pointed out by college-aged women. One barrier which was surprisingly mentioned very little was cost. Cost was only mentioned by five young women as a barrier to tanning. For example, Gretchen shared that this month she "…hasn't tanned as much just because I've been really poor." Dawn echoed that "it's expensive to have a [tanning] membership." Similarly, Melinda shared that she would be have "already

started tanning but right now I don't have a good job so I haven't started tanning yet [this spring] because of cost."

Overall, few barriers to indoor tanning were expressed. Cost was the sole barrier mentioned among this sample suggesting that perceived benefits, which may serve as strong motivators to tanning, outweigh barriers of tanning.

Friends, family, and events trigger tanning

Among these rural, college-aged women, indoor tanning was often triggered by normative cues. Several women indicated that tanning was a social behavior or that they continued because of a friend, or sometimes, their mother or sister. For example, Tricia said, "another friend of mine got me into tanning…once we started working together and became good friends, we'd go tan and then go bowling and get something to eat…It's kind of like a work out buddy." Likewise, Susan shared, "I started going with them [mom, sister] because it did not interest me at all when I was younger. But then I figured out prom… I wanted to look better." Nancy also tanned with her friends: "because of my friends, you would go [tanning] with a friend; it's kind of a social [thing]." Related, Priscilla got into tanning because her "mom actually brought me to a tanning bed for the first because I begged when I was 14."

Other major cues to action were upcoming events or seasons. Events such as sorority or fraternity formals, weddings, and preparing for summer or spring break were major cues to action. For instance, Jackie shared that she tans "starting in March and [goes] until the summer; in the summer I usually don't use [the tanning bed]." Annie also shared she tans "in the fall or winter before my sorority formals or something when I have to be in a dress and I have pasty legs." Similarly, Gretchen shared that she tans "when I have special events." Tiffany shared that she "probably [goes] more often if something is coming up like my brother's wedding. I went for a week and a half or two weeks before…." Overall, normative relationships, events, and seasons were cues for indoor tanning among this sample.

Discussion

Guided by the HBM, the purpose of this study was to examine tanning risk perceptions among rural Kentucky college-aged women. Specifically, this study explored rural college-aged women's risk perceptions of skin cancer and the benefits of indoor tanning. Findings from this study suggest three important implications for skin cancer prevention efforts aimed at reducing indoor tanning on and around rural Kentucky college campuses.

Data from this investigation suggest some fascinating intricacies within the framework of the HBM. First, rural Kentucky college-aged women do not have simplistic views of perceived susceptibility and severity of skin cancer; instead, these young women have a range of risk perceptions. Related, the results indicate that both long term and short term perceptions of severity and susceptibility of skin cancer are not enough to drive current tanning behavior. Further, the low perceived threat of skin cancer among these women perpetuates a mismatch of serious long term health hazards (skin cancer) accompanied by powerful short term social (tanning can be a social activity), physical (improved appearance) and mental benefits (increased self-confidence and stress relief). These complex risk perceptions should be

considered in future indoor tanning interventions and campaigns targeting rural Kentucky college aged women.

Second, not only were susceptibility and severity poor deterrents of this behavior, this study highlights that many young women focused on the benefits of indoor tanning. This further supports the notion that skin cancer, a sequela of indoor tanning, is not perceived as a serious health threat. Findings from this study suggest that perceived benefits, such as positive experiential attitudes and 'health benefits' (e.g., clear skin), appear to be strong motivating factors of indoor tanning. Many women described indoor tanning as a means of relaxation, stress relief, and mood improvement which is similar with previous research; one study found a small subset of their college student sample identified indoor tanning as relaxing (Playforth, Larkin, & Schwartz, 2014). Additionally, another study identified 60% of current tanners in their study found tanning relaxing (Neenan, Lea, & Lesesky, 2012). Furthermore, other research supports the mechanism behind the positive impact on mood while tanning (Brady, 2012).

Interestingly, on the other hand, a few women in this sample continued to tan despite negative experiential attitudes toward tanning, suggesting motivation to tan may be particularly strong (and thus, difficult to change). Perhaps another intriguing facet of the results is the lack of barriers to indoor tanning. For example, very few young women in this sample expressed long term appearance consequences (e.g, wrinkly, leathery skin) as a barrier. The literature has shown that having positive attitudes towards tanning, particularly appearance related attitudes, are strong predictors of actual tanning bed use which suggests that interventions targeting appearance-based motivation may be more successful (Bagdasarov, Banerjee, Greene, & Campo, 2008). Although the current study found that appearance-based beliefs drive tanning behavior, the results did not show that rural Kentucky women identified appearance consequences as an important barrier.

Third, results from this study highlight some interesting triggers for indoor tanning. Many women in this sample discussed normative influences as reasons for tanning. Often, this influence was from a friend or a family member such as their mom or sister. This finding is similar to that of Bagdasarov et al., (2008), who identified that having a friend or acquaintance who tans is a strong predictor of both tanning bed use and intention. This finding supports the suggestion that tanning interventions and campaigns targeting social influence on college campuses may be more effective (Bash, Hillyer, Bash & Neuet, 2012; Noar, Myrick, Zeitany, Kelley, Morales-Pico & Thomas, 2015). However, beyond social influence on campus, our data shows that targeting important others, such as moms and sisters who *also* tan, is warranted for this populous.

Other cues to action included seasonal cues such as preparing for spring break and summer, and event triggered tanning. Several women in this study tanned because of upcoming events such as Greek Life functions and other celebrations such as weddings. Triggers of indoor tanning identified in this study are similar to that of a North Carolina study of community college students. Results from the North Carolina study found that students tan to prepare for summer, vacation and special events (Neenan, Lea & Lesesky, 2012). Overall, the cues to tanning in this study highlight the need for well-timed interventions or campaigns on campuses (e.g., in early spring before spring break and summer, and in the fall during Greek Life formals).

Limitations

This formative study is limited by the small sample size and restricted generalizability of results. Additionally, self-reported data about tanning bed use may not correspond with actual use. However, this study has several strengths. This study adds to the gaps in current literature about risks perceptions of rural Kentucky college-aged women, a unique population, and provides important theoretical understanding of indoor tanning.

Conclusions

This sample of rural Kentucky college aged-women had varying risk perceptions of skin cancer. Additionally, positive appearance and experiential attitudes, and "health" benefits served as strong motivators of indoor tanning. Moreover, social relationships and seasonal events were identified as strong cues to action. This study provides important understanding of theoretical underpinnings of risk perceptions and should be carefully included intervention designs. Future research should explore further understanding of indoor tanning and risk perceptions.

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Table 1: Comparison of Melanoma Skin Cancer Rates between U.S. and Kentucky, 2009-2013

Item Compared	U.S.[2]	Kentucky[2]
Skin Cancer Incidence Rates[1]	20.3	24.4
Skin Cancer Mortality Rates[1]	2.7	3.2

1 National Cancer Institute. State Cancer Profiles. Available at: http://statecancerprofiles.cancer.gov/index.html. Accessed June 13, 2016.

2 Rates expressed per 100,000

Table 2: Demographics and Tanning Behaviors

Participants	Average Age	Average Tanning Sessions in Past 30 Days	Average Tanning Session in Past 12 months
N=24 Caucasian females	20.23 (SD=1.73)	7.8 (SD=5)	83.3 (SD=65.1)

Table 3: Interview Guide Questions

Interview Guide
1. What kinds of health issues do you think are most important to female college students like yourself?
2. What kinds of cancers do you think affect female college students like yourself?
3. What words or phrases come to mind when you hear the term skin cancer?
4. For someone your age, how severe do you think skin cancer is?
5. How susceptible do you think you are to skin cancer? Why?
6. Who is most at risk for skin cancer?
7. Can you have skin cancer without seeing it? What are common skin cancer symptoms?
8. What media messages have you heard about skin cancer?
9. Can you tell me about a conversation you've had with a family member, friend, or healthcare provider about skin cancer?
10. How do you protect yourself from sun exposure?
11. About how often do you use a tanning bed? Does it differ with the time of year?
12. Do you consider yourself to be a 'safe indoor tanner'—how would you describe how you take measures to be safe?
13. How would you describe the benefits of using tanning beds? What risks do you perceive to using tanning beds?
14. What media messages have you heard about tanning beds? Advertisements, health messages?
15. Can you tell me about a conversation you've had with a family member, friend, or healthcare provider about tanning beds?
16. There is new regulation being proposed for tanning beds (which may limit anyone under 18 from using a tanning bed and put more strict regulations for others' use). What do you think about this?
17. Do you think tanning beds should come with a warning label?
18. If they came with a warning label, what kind of information do you think needs to be included in the warning label or message?
a. What sort of warning messages have you noticed in the tanning salons where you go?

19. What kind of health information would be important to people your age who use tanning beds?
20. How do you think we could best reach people to educate them about the risks of using a tanning bed?

(Peer Reviewed Abstract)

Assessing the Financial Impacts of Conference Realignment on NCAA Division I Athletic Programs

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Collegiate athletics has long been a source for entertainment throughout the United States. However, it recently has become a topic of controversy due to the ever-changing landscape of conference realignment. Conference realignment was a focus of college athletics for the past decade, with universities switching conferences for potential revenue-boosting opportunities. The recent dramatic realignment are undoubtedly prompted by the pursuit of financial security (Groza, 2010). Conference realignment can help an institution significantly increase revenue that otherwise would not have generated. Conversely, conferences also prosper by attracting premier universities and athletics programs.

Conference realignment has been beneficial to many universities, but there are potential downsides. Universities that left its original conferences have left those conferences in unfortunate and uncomfortable situations. This is particularly true for smaller conferences that struggle to maintain competitive balance. For major conferences, moving forward and identifying adequate replacements for the departing universities are also difficult. Another factor that hurts smaller conferences during the realignment is the possible loss of lucrative television and media deals. Networks pay multi millions and even billions to broadcast college athletics and work specific deals with individual conferences. Smaller conferences are being hurt financially, because networks would rather have contracts with major conferences and arrange marquee matchups instead of working with smaller conferences for lesser-known matchups.

As a major business, all schools of the collegiate Football Bowl Subdivision generated $6.9 billion in 2012 (Kogan & Greyser, 2014). Despite the sounding financial figure, many issues still persist due to the conference realignment. If conference realignment continues at the current pace, the competitive imbalance and financial discrepancy between the Power Six and mid-major college athletics conferences will expand dramatically.

Key Words: Conference Realignment, Collegiate Athletics and Revenue

Key References:

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