



Southwestern Oklahoma State University  
**SWOSU Digital Commons**

---

Oklahoma Research Day Abstracts

2019 Oklahoma Research Day

---

Mar 8th, 10:00 AM

## 02. Health Studies

Southwestern Oklahoma State University

Follow this and additional works at: <https://dc.swosu.edu/ordabstracts>

---

Southwestern Oklahoma State University, "02. Health Studies" (2019). *Oklahoma Research Day Abstracts*.  
2.  
<https://dc.swosu.edu/ordabstracts/2019oklahomaresearchday/educationandprofessionalstudies/2>

This Event is brought to you for free and open access by the Oklahoma Research Day at SWOSU Digital Commons. It has been accepted for inclusion in Oklahoma Research Day Abstracts by an authorized administrator of SWOSU Digital Commons. An ADA compliant document is available upon request. For more information, please contact [phillip.fitzsimmons@swosu.edu](mailto:phillip.fitzsimmons@swosu.edu).

Austin Johnson, Sheridan Evans, Matt Vassar

Oklahoma State University

Statistical Significance and Orthopaedic Traumatology

#### Purpose of Study:

A recent proposal suggests changing the threshold for statistical significance from a P value of .05 to .005 to minimize bias and increase reproducibility of future studies. The present study explores how lowering the P value threshold would affect the interpretation of previously published trauma orthopaedic randomized clinical trials (RCTs) and whether outcomes from these trials would maintain statistical significance under the proposed P value threshold.

#### Methods:

All RCTs published between January 01, 2016 and January 31, 2018 in the Journal of Orthopaedic Trauma, Injury, and Archives of Orthopaedic and Trauma Surgery screened by at least 2 authors. Data from included trials were extracted in blinded and duplicate fashion.

#### Results:

We identified 117 primary endpoints from 49 trials: 41 endpoints (35.0%) had a P value less than .05 and 76 (65.0%) had a P value greater than .05. Overall, 41.5% (17/41) of statistically significant primary endpoints were less than .005. Of the 117 primary endpoints, only 17 (14.5%) of the endpoints were less than .005, and would hold significance with the proposed threshold. Only 6.12% (3/49) of the included studies had all primary endpoints that met the new threshold of .005.

#### Conclusion:

Based on our results, adopting a lower threshold of significance would heavily alter the significance of orthopaedic trauma RCTs and should be further evaluated and cautiously considered.

Education and Professional Studies.Health Studies.02

Taylor Hughes

Oklahoma State University

Analysis of Yoshihiro Sato's Falsifications and their Impact on Orthopedic Surgery

Austin Johnson

Oklahoma State University

## An Analysis of the Use of Systematic Reviews to Justify Otolaryngology Randomized Controlled Trials - Is Research Being Wasted?

### Objective of Research:

Current medical research is plagued by redundancy and research waste. One such source of research waste derives from failing to use a previously conducted systematic review (SR) to indicate whether conducting a new randomized controlled trial (RCT) is indeed warranted or needed. The purpose of our study is to explore the level of adherence to guidelines and where a literature search was incorporated and documented SRs were used as justification for conducting a RCT and the amount of research waste as a consequence.

### Methods and Results:

We performed a meta-epidemiological cross-sectional study of RCTs published in top peer reviewed otorhinolaryngological journals according to Google Scholar Metrics. We recorded whether or not that study used the cited systematic review as justification for conducting the trial. Of the 304 articles retrieved, 151 were included. Overall, only 58.3% (88/151) of studies referenced a SR while shockingly, 41.7% (63/151) articles did not reference at all a systematic review. Possibly even more alarming is the fact that only 27% (24/88) that did cite at least one SR mentioned the SR as justification for conducting the trial and only 17% (15/88) of studies cited verbatim that a SR implicated the need for a RCT to further gaps in knowledge.

### Conclusion:

Based off of our findings, we recommend that efforts be taken to reduce research waste by using systematic reviews and meta-analysis as justification for conducting RCTs.

Cara Daniels, Larissa Boyd

University of Central Oklahoma

#### To Stress or Not to Stress: The Relationship Between Perceived Stress and Cholesterol

Background: Stress has been shown to result in adverse health outcomes including poor cholesterol. Previous research provides that an individual's perceived stress may greatly influence lipid levels. Purpose: The purpose of this study was to determine the relationship between cholesterol and perceived stress. Methods: A volunteer sample of full-time faculty and staff of the University of Central Oklahoma were administered the Perceived Stress Scale (PSS; N=47) which is a 10-question survey of perceived stress over the last month. Blood lipid profiles were also taken for the measurement of high-density lipoprotein cholesterol (HDL; N=38), low-density lipoprotein cholesterol (LDL; N=38), and total cholesterol (TC; N=39). For this measurement, each participant was fasted for 8-12 hours. The relationship between perceived stress and cholesterol levels were examined using a Pearson's Product Moment Correlation. Results: A significant relationship was found between LDL and perceived stress ( $r=-.32$ ,  $p=.05$ ) as well as TC and perceived stress ( $r=-.33$ ,  $p=.04$ ). No relationship was revealed between HDL and perceived stress ( $r=-.08$ ,  $p=.65$ ). Discussion: While previous research revealed adverse physiological outcomes due to stress, this study found an inverse relationship between perceived stress and cholesterol levels. Further research is needed to understand the magnitude of the relationship between cholesterol and perceived stress.

Constance Haynes, Larissa Boyd

University of Central Oklahoma

### The Relationship Between Work Productivity and Physical Activity Participation

Increasing demands and higher expectations on employees could lead to lowered workplace productivity. The purpose of this study was to determine if a relationship existed between work productivity (WP) and physical activity (PA). Volunteer faculty and staff (N=37) at the University of Central Oklahoma were given surveys to self-evaluate their PA and WP. WP was measured using the 11-item Health and Work Performance Questionnaire (HPQ) to evaluate relative and absolute absenteeism and presenteeism. Absenteeism is a comparison of expected and actual hours worked and presenteeism is a comparison of possible and actual performance. Participants were also given a 27-item International Activity Questionnaire (IPAQ) to evaluate PA levels for walking (WA), moderate (MO), and vigorous (VI) intensity (METmin/wk). A Pearson-Product Moment Correlation was used for analysis. No relationship existed between all variables ( $p > .05$ ). The lack of relationship between WP and PA suggests that one's ability to be productive or come in to work may not be linked to their physical activity level. This is contradictory to past research demonstrating PA may have an impact on work productivity and attendance. Further research should objectively measure the relationship between workplace productivity and physical activity.

Levi Brown, Kanika Bhargava

University of Central Oklahoma

### Fortification of Nutrient Lacking Sourdough Bread with Nutrient Dense Cricket Powder

Consumers are constantly searching for new food items to supplement into their diet. When searching for these items, one of the main nutrients that consumers look for is protein. Cricket protein is an environmentally friendly and high-quality option when it comes to protein supplementation. The popularity of fortified foods is rising and this product looks to take advantage of that trend.

The purpose of this research was to test the effects of fortification of sourdough bread with cricket powder. This experiment tested both the physical and chemical changes associated with cricket powder fortification to determine the potential for this to be a viable product in the market. Fortification percentages of 5 and 10% were used and multiple tests were run. Tests were conducted on fortified flour samples to see the effect of the cricket powder on flour characteristics, and also on the baked bread itself.

The results from the tests showed differences in many of the physical characteristics of the bread such as percentage rise, firmness and color. The largest differences were found in the percentage rise and color tests. Tests were also run on the properties of flour mixed with cricket powder. These tests were emulsion stability and solubility percentage. These tests did not elicit as big of a difference as the bread tests, but there were common trends in each depending on the level of fortification with cricket powder.

Austin Johnson

Oklahoma State University

## The Use of Systematic Reviews in Orthopaedic Traumatology

### Purpose

Systematic reviews (SRs) are an invaluable resource that can be used to justify whether or not there is a need to conduct a new randomized controlled trial (RCT). New RCTs are warranted when previous SRs cite a lack of evidence in literature. The primary aim of this study is to evaluate the use of SRs as justification in conducting RCTs published in high impact orthopaedic trauma journals.

### Methods

We analyzed RCTs published in the top three high impact orthopaedic trauma journals. Data was extracted by the number of SRs cited in each RCT. Each citation was analyzed for justification in conducting the trial. Citations found to be verbatim directly cite a lack of sufficient information specified in a SR as the purpose for conducting the trial.

### Results

Of the 144 trials retrieved, 128 were included. Overall, 70.3% (90/128) of trials referenced a SR while 29.6% (38/128) did not reference a SR. Of these 128 trials, 23% (30/128) cited at least one SR as justification for conducting the trial, with most found in the introduction (16/30). Therefore, 76.6% (98/128) made no reference of SR guiding RCT design.

### Conclusion

Based on the findings of this study, SRs are not being sufficiently cited as justification for conducting a RCT in orthopaedic traumatology. Trialists may consider using evidence from existing SRs for designing RCTs to combat performing duplicative trials.

Kelsey Bishop

University of Central Oklahoma

### Diversity in Human Sexual Attitudes, Preferences, and Behaviors

Currently, there is no objective standard of sexual behavior. Aside from sexual behaviors that are classified as illegal or dangerous, such as those behaviors that intentionally harm non-consenting individuals, human sexual behaviors are difficult to classify into categories of atypical versus typical. The purpose of this study is to examine the differences in sexual interests, attitudes, behaviors, self-consciousness in sexual contexts, sexual satisfaction, perceptions of openness in communication with a sexual partner, and sexual desire across non-BDSM practicing population as compared to populations of individuals within BDSM/fetish communities. With further knowledge in this area, sex researchers and therapists would have a clearer understanding between a paraphilia and a paraphilic disorder.

Education and Professional Studies.Health Studies.11

Hope Shreve, Tate Odam, Marshall Wallace, Haley Zellner

Southwestern Oklahoma State University

#### Awareness and Utilization of Available Food Resources for Undergraduate Students in Western Oklahoma

Food insecurity is defined by the U.S. Department of Agriculture as a household having limited access to adequate food due to a lack of money or other resources. Oklahoma has seen a 1.6% rise in the percentage of food insecurity to the current 15.5% level in the most recent report. Recent research focused on college students have found even higher levels of food insecurity. The goal of this study was to assess the awareness and use of available food resources among Southwestern Oklahoma State University (SWOSU) students in Weatherford, Oklahoma. The researchers contacted known resources to determine address, hours, types of resources, frequency of visits, and what qualifications must be met to receive assistance. The researchers developed a survey that included questions on demographics, academics, ten standardized questions from the U.S. Household Food Security Survey Module, and awareness and use of food resources available to SWOSU students. The survey will be administered online and available for two weeks. After the survey concludes, the researchers will distribute food resource information via email, social media, and printed advertisements. The results of the survey will be analyzed in order to determine an effective marketing plan in hopes of raising awareness of resources.

Donovan Cousan

University of Central Oklahoma

### Using PhotoVoice Research to determine Health Equity issues

Health equality is more so offering the same services to individuals whereas health equity is every person given a fair chance to achieve the highest form of health status without there being barriers established due to the social determinants of their health. These determinants of health can be in various categories such as education, access to health care, transportation, food desserts, and housing editions. The state of Oklahoma is experiencing a lot of health equity issues, more specifically on the east side of Oklahoma City in the zip codes 73111 and 73105.

The purpose of this research project was to create a plan of action addressing the health equity issues in Oklahoma City and share the results broadly in the community. The research involved participants who were raised or currently living in the zip codes listed above, this was important for it gave prominent leaders the opportunity to hear from the individuals who were personally affected. The PhotoVoice research project consisted of photos taken by eight participants who were given digital cameras to take pictures of the social and built environment that they felt played a part in the health inequity concerns. After the images were received, individual interviews were then held to hear personal narratives and descriptions about each photo. The research was later displayed as a gallery to pinpoint the barriers that the individuals living in those communities felt brought hindrance to them obtaining the best health

Dusten Lynn, Bethany Bates

Southwestern Oklahoma State University

### Mortality and Incidence Rates for Leukemia in the United States from 2012-2016: An Exploration of the Demographic Variables: Sex, Income, and Ethnicity

Leukemia is often thought of as a cancer that affects more children than adults. However, Leukemia is a genetic condition that is linked back to an abnormal chromosome. In this study, we examined specific demographic variables (i.e., income, sex, and ethnicity) in order to compare incidence and mortality rates in various populations. We hypothesized that American Indian and Alaskan Native would be at a higher risk for the development of Leukemia in the United States as opposed to African Americans and Caucasians. Also, we wanted to know if the mortality rates for Leukemia are higher among males. Our third hypothesis examined if poverty had an influence on the United States mortality rates. The authors analyzed the data using correlation tests and two-sample t-tests to determine if there was any significant difference between the variables. The two-sample t-test was used to conclude whether males or females were at a higher risk. The correlations were done in Excel to analyze any statistical significance in our data. Results show poverty level status is not associated with Leukemias mortality rate yet sex, specifically being male correlates with mortality. Moreover, ethnicity, particularly American Indian and Alaskan Native (AIAIN) males are at greater risk for the development of this disease. Therefore, greater awareness of other possible predictors may help early identification of this illness in certain populations.

Education and Professional Studies.Health Studies.15

Mason Beard

Southwestern Oklahoma State University

How Social Media/News Media affects Jurors in Trials

I am covering how news media and social media affects jurors in trials. In high profile trials and cases, news media and social media portray what they want to portray and show only what they want to show to convince listeners of their side. Sadly, in today's society jurors go into trials with preconceptions already in their head about what they believe. I will be covering many high profile trials that have been influenced by the Media and also interviewing an Oklahoma Official on his take on the subject.

Education and Professional Studies.Health Studies.16

Michael McKaig

University of Central Oklahoma

Speech and Language Therapy for Weaver Syndrome

We describe in this study a male with Weaver syndrome who received treatment for delayed speech-language development for a period of 13 months, from the age of 1:11 to 3:0. Although his performance remained below chronological age norms, significant gains were noted in receptive and expressive language skills. We believe this is the first report of disordered communication in a recognized case of Weaver syndrome.

Emily Jost, Christina Brady, Tom Darling

Other

#### Resistance Training Effects on Cancer Symptom Severity

Cancer rehabilitation increases functional capacity (FC) and health-related quality of life (HRQOL). Resistance training (RT) contributes to enhanced physical and mental functioning. PURPOSE: Examine RT effects on cancer symptom severity (CSS). METHODS: 8 Cancer survivors (CS) and 2 caregivers (CG) participated in a 12-week (45-60min/session) cancer rehabilitation program (OBU CARES, 2017-2018) at Oklahoma Baptist University. Sessions included various RT exercises (i.e., body-based, TheraBand, weighted balls, dumbbells). Hand-grip (pre/post) measured muscular strength. Symptom Severity Inventory (SSI) determined CSS. FACIT-SP (v4) evaluated HRQOL. RESULTS: 3 CS and 1 CG completed the program. CS1 (Pre=38 kg, Post=43 kg) increased muscular strength. CS1-3 and CG1 reported enhanced CSS scores. CONCLUSION: RT may have positive effects on physical functioning, mental functioning, and HRQOL. Further study will determine specific RT effects on CSS.

Mckenzie Bohannon, Katherine Kuehn, Tom Darling

Oklahoma Baptist University

#### Remote Exercise Monitoring for Cancer Rehabilitation

Cancer rehabilitation increases functional capacity (FC) and health-related quality of life (HRQOL). Remote sensor technology and exercise monitoring may enhance exercise safety and effectiveness and cancer rehabilitation program integrity. PURPOSE: Examine the use of the Zephyr BioHarness in monitoring and analyzing physiological, biomechanical, and biomarker indicators throughout exercise. METHODS: 8 Cancer survivors (CS) and 2 caregivers (CG) participated in a 12-week (45-60min/session) cancer rehabilitation program (OBU CARES, 2017-2018) at Oklahoma Baptist University. Participants were monitored remotely via the Zephyr BioHarness, monitoring 7 live parameters (HR, %HRmax, HRV, BR, activity level, core body temperature, posture) and 23 additional parameters recorded in the database. RESULTS: 3 CS and 1 CG completed the program. 5 CS and 3 CG were included in the analysis, completing exercise sessions 65 to 85; 85% HRmax. Zephyr software works best on a Windows-based system. Biosensor conductivity is dependent upon BioHarness fit and position, sensor wetting or use of hydrogels, and participant body composition. Data accuracy is dependent on percent HR confidence (>80%). Participants indicated that the Zephyr BioHarness was comfortable throughout exercise activities. CONCLUSION: The Zephyr BioHarness is a promising system for safely and effectively monitoring exercise for cancer rehabilitation programs. Further study will determine additional applications.

Nathan Hall, Tom Darling, Brooklynn James, Monique Mossop

Oklahoma Baptist University

### Exercise Effects on Cancer-Related Fatigue

Cancer rehabilitation increases functional capacity (FC) and health-related quality of life (HRQOL). Exercise may have positive effects on cancer symptom severity (CSS) and cancer-related fatigue (CRF). PURPOSE: Examine exercise and cancer rehabilitation programming effects on CRF. METHODS: 8 Cancer survivors (CS) and 2 caregivers (CG) participated in a 12-week (45-60min/session) cancer rehabilitation program (OBU CARES, 2017-2018) at Oklahoma Baptist University. Sessions included a combination of aerobic/anaerobic, resistance training, flexibility, and neuromotor exercises. Modified Bruce ETT, hand grip (HG), Timed Up & Go (TUG), and sit-and-reach (S&R) measured FC. FACIT-SP (v4) evaluated HRQOL. RESULTS: 3 CS and 1 CG completed the program. CS improved FC scores (CS1: TUG=0.56s, ETT=20s, HG=5kg; CS2: TUG=1.0s, ETT=2m 50s, S&R=1cm; CS3: TUG=1.8s, ETT=3m, S&R=3cm). CG1 did not complete post-testing. CS1-3 and CG1 reported enhanced CSS scores (e.g., CRF). CONCLUSION: Exercise may have positive effects on FC and HRQOL. Further study will determine specific effects on CSS and CRF.

Austin Johnson

Oklahoma State University

## The Use of Systematic Reviews to Justify Orthopaedic Clinical Trials- An Analysis of Research Waste

### Objective

As much as 85% of biomedical research is estimated to be wasted or of little use. This has led to \$170 billion of wasteful research spending annually worldwide. One method to combat research waste by avoiding duplicative or unnecessary studies is to conduct randomized controlled trials (RCTs) only when a systematic review (SR) suggests more data are needed. The primary aim of this study is to evaluate the use of SRs as justification in conducting RCTs in orthopaedic literature.

### Methods

All RCTs published between January 01 2015 and November 31, 2018 in 5 high impact Journals chosen for analysis based on the most recent 2018 Google h5-index rankings were analyzed and screened by at least 2 authors. We recorded the number of SRs cited in each RCT and analyzed for justification in conducting the trial.

### Results

Of the 390 trials retrieved, 320 were included. The data extraction process identified 777 total SR citations in the 320 included trials. Overall, 74.4% (238/320) of trials referenced a SR while 25.6% (82/320) had no references to a SR. Analysis of the 320 trials showed that 35.6% (114/320) cited at least one SR as justification for conducting the trial, with most such citations found in the introduction (86/114). Ultimately, 64.4% (206/320) made no reference of SR guiding the design of the RCT.

### Conclusion

Based off of our findings, we recommend that efforts be taken to reduce research waste by using SRs as justification for conducting RCTs.

Stephanie Nutter

University of Central Oklahoma

### A Study on Voice Disorder Knowledge in High Risk Majors

The objective of this study is to determine the current level of pre-professional knowledge pertaining to voice disorders and vocal hygiene practices among at-risk majors. At-risk majors include Education, Theatre, and Voice performance majors due to their intense voice usage in their future occupations (Cohen et al., 2012; Fritzell, 1996; Miller & Verdolini, 1995; Thibeault, Merrill, Roy, Gray & Smith, 2004; Williams, 2003). In this particular presentation we will assess Music Education student's vocal hygiene and voice disorder knowledge. The student's level of knowledge will be assessed using a multiple-choice question survey that has twenty questions relating to voice disorders and vocal hygiene. The collection of data is important in order to determine if a change in the amount of pre-professional knowledge of voice disorders is needed. This knowledge will be used to create an advocacy plan for these populations. Currently, there is minimal research investigating pre-professional knowledge in at-risk majors. Our results will be discussed in the context of a descriptive analysis of the data, the average survey score for the population as a whole, and describing specific questions that were missed by more than 50% of the population.

Khoa Nguyen, Ngan-Dinh Nguyen, Tashrique Rahman, Lucero Villa

Southwestern Oklahoma State University

### Evaluating Naloxone Access and Prescribing Requirements in the Opioid Epidemic Across the United States

Introduction: Deaths related to opioid overdose has been an increasing problem in the United States. In 2016, over 42,000 people died from opioid related overdoses. Deaths related to opioid overdoses can be prevented by the use of naloxone which reverses the effects of opioids. Approaches to promote naloxone access have been described by federal agencies, including the Substance Abuse and Mental Health Services Administration. The objective of this study is to examine which states require physicians to prescribe naloxone to patients receiving opioids, which states allow pharmacists to prescribe naloxone to patients, and layperson access. Methods: Using national and state databases, information was collected and analyzed for each state regarding the requirements of concurrently prescribing naloxone with opioid prescriptions. We also analyzed naloxone access in community pharmacies for each state. Finally, we assessed which states allowed layperson access through naloxone hubs without a prescription. Results: Currently, all 50 states and the District of Colombia allow physicians to prescribe naloxone for patients at risk of opioid overdose. Conclusion: Changing laws have helped make naloxone easier for people to access this life-saving medication by increasing how it can be distributed beyond traditional prescriptions. Increased access allows individuals at risk, as well as friends and families of those at risk, be prepared in the event of an opioid overdose.

Saleena Brownell

Southwestern Oklahoma State University

### The Impact of Naloxone Training and Education in the Community

**Introduction:** The issue of opioid overdose has become a national crisis and is receiving a lot of attention in the media. In the state of Oklahoma, an excess of 900 people (approximately 3 per day) succumb to overdose. Nationally, there were over 42,000 opioid-related drug overdose deaths in 2016. The objective of this study is to determine the impact that education and training have on attitudes and confidence of people in the community to have the ability to recognize and respond to an opioid overdose using naloxone.

**Methods:** Student pharmacists and preceptors will present information about opioid overdose awareness, people who are at risk, how to recognize an opioid overdose, and how to respond to a situation where someone has overdosed. This education also provides training on using intranasal naloxone. Surveys will be conducted both prior to and after the presentation to determine the impact that the education had on knowledge and confidence in using intranasal naloxone in an opioid overdose situation. Surveys from various student groups are being collected, and data from the pre- and post-survey will be compared. Data from the different groups will also be compared to identify how participant background affects survey data.

Bradley Johnson, Tomi Adewumi

Oklahoma State University

## Use of Systematic Reviews in Preventing Research Waste in Emergency Medicine Randomized Controlled Trials

Remarkably, an estimated 85% of wasted medical research results in billions of research dollars wasted each year. (Chalmers and Glasziou, 2009) Systematic reviews are a well-recognized methodology for mitigating research waste. Studies have shown that a portion of randomized controlled trials in medicine have not used SRs properly. In the field of emergency medicine, there has been no studies conducted over this problem. This study's goal is to find out if randomized controlled trials in emergency medicine research included a SR, and to see if those trials that did include SRs used them as justification for their study. We searched PubMed for studies that were published between 01/01/2014 and 12/31/2017. This search resulted in 615 studies. We found that 275 of them fulfilled the requirements of a RCT. The bibliographies of the 275 studies were analyzed for evidence of SR citation. If a SR citation was present, we determined if information from the citation was used to justify the RCT. Of the 275 studies, we found that 66%, 95%, and 74% studies did not use SR citations as justification or did not have SR citations at all in the introduction, methods, and discussion sections respectively. The results from this study reveal that there is a lack of justification for RCTs in emergency medicine research due to the underutilization of meaningful SR citations. Trialists in emergency medicine should be more proactive in citing SRs in their studies to prevent wasted resources.

Olivia Anders

Southwestern Oklahoma State University

### Alzheimer's Disease

Alzheimer's disease is plaguing the world and is currently the most common cause of dementia. Characterized by the rapid progression of amyloid plaque buildup and tangled bundles of fibers causing cell death, Alzheimer's disease affects a person's memory, thinking and behavior. As the disease spreads out across the brain, various functions of the brain are lost. The brain death continues until complications lead to death. In this study, we will analyse risk factors for Alzheimer's. There are three primary hypotheses including that females will have a higher age-adjusted mortality rate (AAMR) than males, those living in poverty will have a higher AAMR, and finally white individuals will have a higher AAMR than black individuals. To analyze these hypotheses, we used data from the CDC WONDER Online Database and tested the hypothesis using statistical tests. Overall it was found that white individuals have a higher AAMR than black individuals, those who live in poverty have a higher AAMR than those who do not, and finally females have a higher AAMR than males.

Sami Noisey

Northeastern State University

Is It Ethical for the Homeless to Have Pets?

#### Abstract

There were several benefits to having companion animals. Research shows having a pet provides friendship and responsibility and contributes to positive emotional wellbeing (Slatter, Lloyd, & King, 2012). The study will access the following research questions: R1: Is it unethical for homeless to own pets? R2: Should homeless pet owners be responsible for care (food, shelter, health needs) of their pets? R3: Should the community adopt low-cost or free pet care programs to help with the costs of pet ownership by homeless persons? H1: It is ethical for homeless to own pets. H2: Homeless persons should not be responsible for their pet's food, shelter, and health needs. H3: Communities will take the responsibility of adopting programs for homeless person's pets needs and concerns. This study is a public opinion survey with three Likert-items (one a 1-4 scale, strongly agree to strongly disagree, with no neutral response). The current schedule of subjects indicates the use of descriptive statistics to decide the frequency of responses, and provide a measure of central tendency and measure of spread. Preliminary findings from 113 participants (mean age 41.5 years) indicate 87.6 % of participants agree that homeless persons should own pets, with 39.8 % of participants agree and 38.1% strongly agree that low-cost of free pet care programs should be in place for homeless pet owners.

Trevor Torgerson, Michael Bibens

Oklahoma State University

## Celebrity Influence on Public Interest in Basal Cell Carcinoma

### Introduction

Basal cell carcinoma (BCC) is the most prevalent form of skin cancer. Major risk factors include sun exposure and sunburns. Thus, most cases are preventable. Increasing awareness of this disease could lower incidence rates. The primary objective was to evaluate relative internet search interest in basal cell carcinoma following events such as awareness campaigns and celebrity diagnoses.

### Methods

We used Google Trends to assess public interest in BCC over time points such as celebrity public media posts, Skin Cancer Awareness Month (SCAM), and summer months between January 1, 2013 and June 8, 2018. We also performed a Google Trends analysis of Melanoma under the same search parameters for comparison.

### Results

We identified social media posts about BCC from celebrities, specifically Hugh Jackman, were associated with increased internet search interest. Furthermore, while internet search interest in melanoma coincided with Skin Cancer Awareness Month, a similar effect was not observed for BCC.

### Conclusion

Celebrities appear to play role in increasing awareness and interest in BCC, whereas SCAM did not produce the same effect. As a result, the Skin Cancer Foundation and dermatology community should know that awareness campaigns for BCC may be less effective. Having a celebrity spokesperson for such a campaign has the potential in increase awareness in this area. Because BCC is largely preventable, increasing awareness could lead to a decrease in incidence.

Yu-Ling Chen

Southwestern Oklahoma State University

### A Review of the Piano-Playing-Based-Training Programs in Hand Rehabilitation

Piano playing requires controlled fine motor movement. Several studies have applied piano playing for patients in hand rehabilitation for its potential to elicit experience-dependent neuroplasticity after stroke or brain injury. Playing the piano also provides auditory feedback to the movement, so patients automatically know whether they have correctly completed the movement or not, and it's also rewarding. Furthermore, the pleasure of music making motivates the patients to accomplish the demand associated with the repetition of motor tasks.

The purpose of this present study is to review the various piano-playing-based-training programs in the rehabilitation literature, specifically those which promote grip strength and finger dexterity in various populations. This study examines multiple factors including the protocols, length, and frequency of the sessions, the assessment tools, and outcomes. The results of this review reveal that most of the programs involved sequence of independent finger movement of varying levels of difficulty. Participants enjoyed the exercise in the sessions and at home, and their fine motor function improved. This review supports the use of piano playing in hand rehabilitation.