



# Racial and Ethnic Minority Health Disparities in TBI & SCI

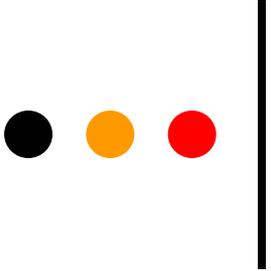
Lillian Flores Stevens, Ph.D.

Advanced Rehabilitation Research Training Fellow

Department of Physical Medicine and Rehabilitation

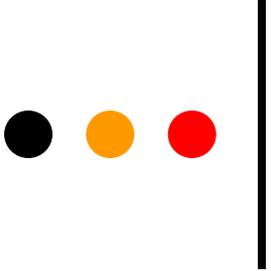
Virginia Commonwealth University

July 13, 2011



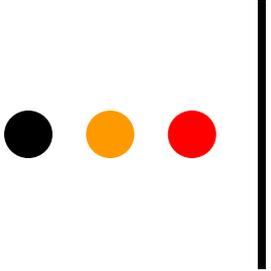
# Overview

- Provide context for the significance of topic
- Summarize literature regarding racial / ethnic minority disparities in TBI and SCI rehabilitation outcomes
- Provide recommendations for future research



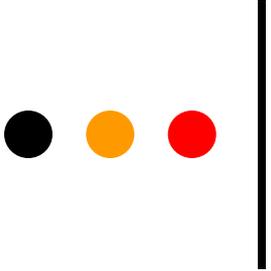
# Background and Significance

- By 2050, racial and ethnic minorities will make up 54% of the US population (30% Hispanics, 15% African Americans, and 9% Asians) US Census Bureau
- Health disparities exist among racial and ethnic minorities in terms of various health conditions (Smedley, Stith & Nelson, 2003), health care quality and access (US DHHS, 2010), and disability (US DHHS, 2006; CDCP, 2008)



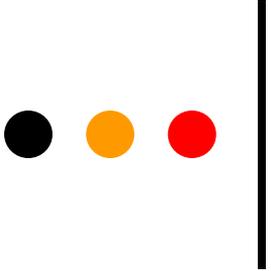
# Background and Significance

- Individuals with disabilities suffer health disparities (US DHHS, 2006)
- Members of a racial/ethnic minority group who also have a disability are at increased risk



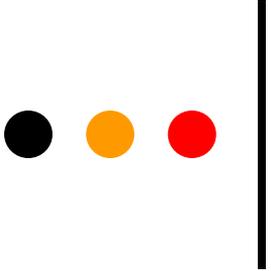
# Background and Significance

- TBI and SCI are extremely relevant, given current conflicts
- Can have long-lasting effects on survivor, family, and community



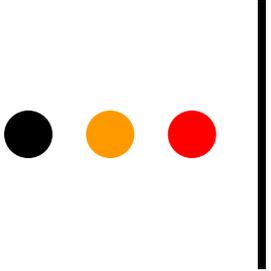
# Background and Significance

- TBI = a form of acquired brain injury that occurs when a sudden trauma causes damage to the brain
- Annual average TBI-related death rates (per 100,000 population) for 1997-2007 CDCP, 2011
  - American Indian /Alaska Natives (27.3)
  - Blacks (19.3)
  - Hispanics (14.4)



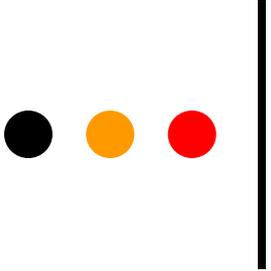
# Background and Significance

- SCI = a disturbance of the spinal cord that results in loss of sensation and mobility
- Each year, an estimated 12,000 individuals sustain a SCI  
NSCISC
  - Significant increase in SCI among African Americans and Hispanics



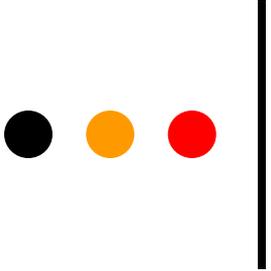
# Rehabilitation Outcomes

- Gary, K. W., Arango-Lasprilla, J. C., & Stevens, L. F. (2009). Do racial/ethnic differences exist in post-injury outcomes after TBI? A comprehensive review of the literature. *Brain Injury*, 23(10), 775-789.
- Gary, K. W., Nicholls, E., Shamburger, A., Stevens, L. F., & Arango-Lasprilla, J. C. (in press). Do racial and ethnic minority patients fare worse after SCI: A critical review of the literature. *NeuroRehabilitation*.
- Used MEDLINE/PubMed, PsycINFO, CINAHL, InfoTrac One File, and Health Source: Nursing/Academic Edition
- 39 research articles were found for TBI; 49 were found for SCI



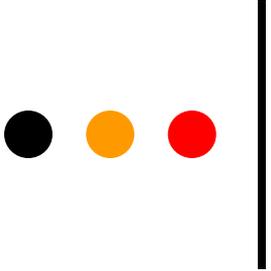
# TBI: Treatment Outcomes

- 9 articles
- Majority found that African Americans and Hispanics were less likely to:
  - Receive the highest quality of emergency room care
  - Be discharged to rehabilitation centers for further treatment
  - Receive additional and more intensive rehabilitative therapies
  - Be discharged for further rehabilitation or specialized care after inpatient treatment
- Race/ethnicity did not influence receipt of rehabilitation services for one major, urban, level 1 trauma center



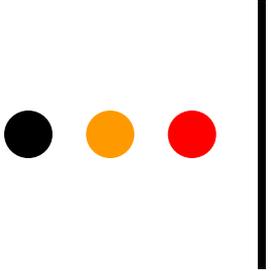
# TBI: Functional Outcomes

- 8 articles
- Majority found that minorities experienced:
  - Worse disability levels
  - Less functional independence
- Differences were notable up to 5 years post-TBI



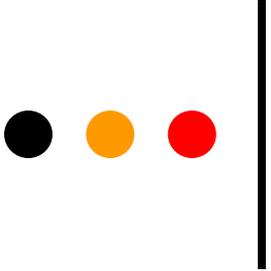
# TBI: Employment/Productivity Outcomes

- 8 articles
- Majority found that minorities experienced:
  - Less job stability
  - Less receipt of vocational support services
  - Less successful employment
- Differences were notable up to 5 years post-TBI



# TBI: Community Integration Outcomes

- 6 articles
- All found that African Americans and Hispanics experienced:
  - Worse productive integration
  - Worse social integration
- Differences were notable up to 1 years post-TBI

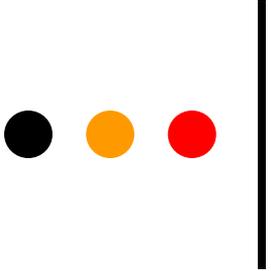


## TBI: Marital Outcomes

- 2 articles

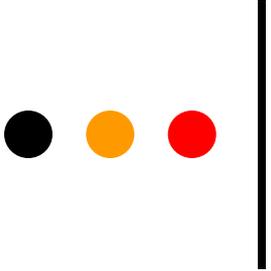
- Conflicting results:

- Minorities with greater disability had more marital stability
- Minorities with greater disability had higher divorce rates



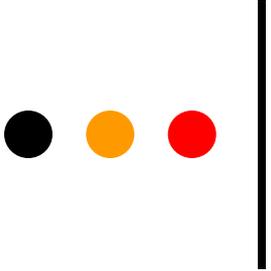
# TBI: Quality of Life / Life Satisfaction Outcomes

- 4 articles
- Half noted that African Americans had lower quality of life or life satisfaction than Whites



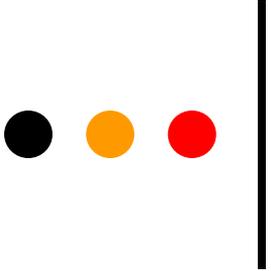
# TBI: Neuropsychological Outcomes

- 2 articles
- African Americans score lower on measures of general cognitive ability
- More traditional African American cultural values/beliefs associated with lower test performance



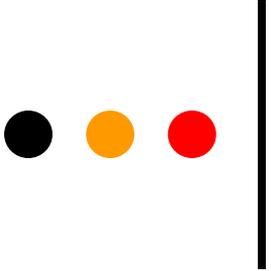
# TBI: Emotional / Behavioral Outcomes

- 4 articles
- African Americans generally experience
  - Increased depression
  - Poorer social functioning
  - Increased posttraumatic stress
- Hispanics develop post-concussional disorder less frequently than Whites and African Americans



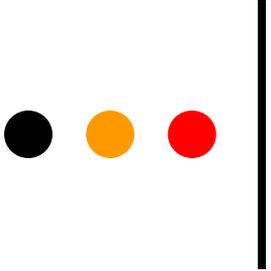
# TBI: Caregiver Outcomes

- 5 articles
- African American caregivers report:
  - Fewer needs met
  - Spending more time caregiving
- Mixed findings regarding impact of race/ethnicity on distress and burden
- African American and Hispanic caregivers:
  - Use more emotion-focused coping
  - Tend to opt for support from houses of worship rather than professional support



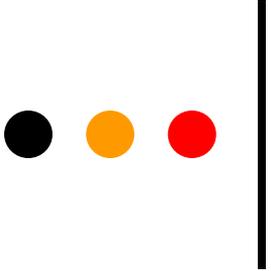
## SCI: Hospital-Related Outcomes

- 9 articles
- Minority patients:
  - Are more likely to sustain injury through use of firearms
  - Have shorter lengths of stay in rehabilitation
- Mixed findings regarding re-hospitalization rates
- No differences between minorities and Whites regarding perceived quality of care



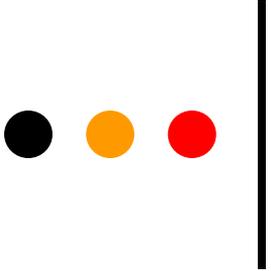
# SCI: Emotional / Mental Health- Related Outcomes

- 6 articles
- Latinos, African Americans and American Indians experienced:
  - Higher depression
  - Poorer adjustment
- African Americans were more likely to report abstinence from drinking



# SCI: Physical Health-Related Outcomes

- 12 articles
- Among the American Indian population, older age at onset, more injuries, and less social support were associated with more days in poor physical health
- Pain prevalence was higher among Whites, but non-Whites reported higher intensity of pain
- American Indians and African Americans were at greater risk for UTIs and pressure ulcers
- Whites were significantly more at risk for kidney stones and bladder calculi



# SCI: Employment Outcomes

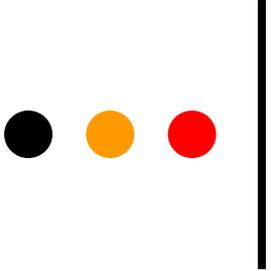
- 9 articles

- All found that minorities experienced:

- Poorer employment rates

- Lower rates of return-to-pre-injury-work

- Lower wages

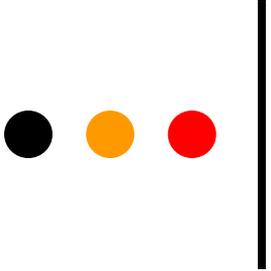


# SCI: Functional Outcomes

- 6 articles

- Minorities with SCI:

- Had better scores related to functional independence at admission to inpatient rehabilitation
- Were less likely to show improvement in FIM scores at discharge
- Were less likely to achieve greater community integration
- Reported greater levels of handicap in the area of mobility
- Were less likely to have appropriate customizable wheelchairs or back-up wheelchairs

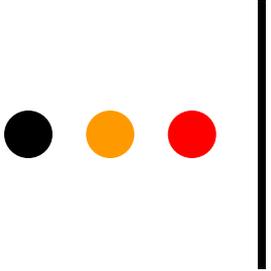


# SCI: Quality of Life Outcomes

- 6 articles

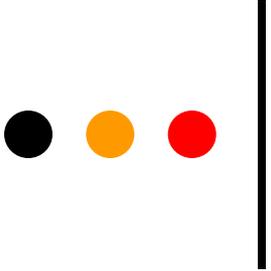
- Minorities with SCI:

- Have lower subjective well being in the areas of career, employment, finances, living arrangement, and adjustment, which persist up to 6 years
- Have more environmental barriers resulting in decreased life satisfaction after SCI



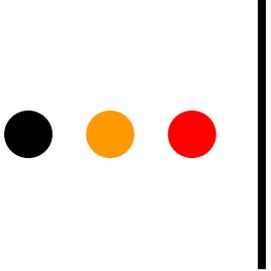
## SCI: Family-Related Outcomes

- 4 articles
- 3 of the 4 studies showed higher divorce rate among African Americans
- Mixed findings regarding racial/ethnic differences in marital stability over time



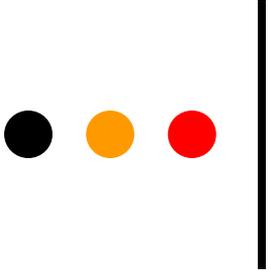
## Bottom Line

Racial and ethnic minority patients with TBI and SCI tend to have worse rehabilitation outcomes.



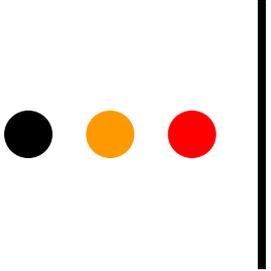
## Suggestions for Future Research

- Investigate possible racial and ethnic group differences with whom little or no research has been done (e.g., Asian Americans, American Indians)
- Corroborate findings regarding differences for those outcomes that have been examined by only a few studies (e.g., marital status, quality of life, etc)



## Suggestions for Future Research

- Study long-term rehabilitation outcomes among racial and ethnic minority groups
- Determine differences in outcomes with a specific emphasis on within-group differences (e.g., White vs. Black Hispanics; US-born vs. recent immigrants; country or regional differences)
- Perform qualitative and mixed method analyses



# Suggestions for Future Research

- Determine the effect that patient cultural and attitudinal factors have on service utilization, recovery, and rehabilitation outcomes among racial and ethnic minority patients

- Acculturation

- Immigration Status

- Cultural Mistrust

- Language Proficiency

- Family Structure

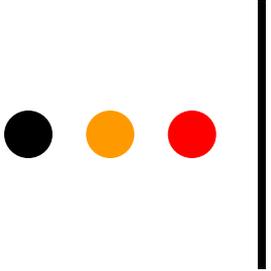
- Perceived Racism

- Fatalistic Attitudes

- Religiosity/Spirituality

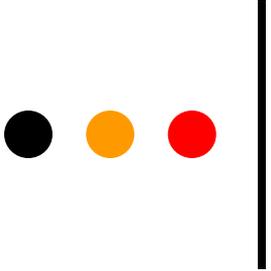
- Gender Roles

- Stigma, Attitudes, & Cultural Beliefs



## Suggestions for Future Research

- Identify the most effective interventions for specific racial and ethnic minority populations
- Evaluate the effectiveness of culturally-tailored interventions designed to improve rehabilitation outcomes in minority groups.



# References

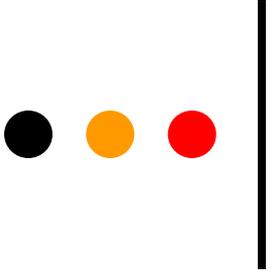
Centers for Disease Control and Prevention (CDCP). (2008). Racial/ethnic disparities in self-rated health status among adults with and without disabilities—United States, 2004-2006. *Morbidity and Mortality Weekly Report*, 57(39), 1069-1073.

Centers for Disease Control and Prevention (CDCP). (2011). Surveillance for traumatic brain injury-related deaths- United States, 1997-2007. *Morbidity and Mortality Weekly Report*, 60(SS 5), 1-32.

Gary, K. W., Arango-Lasprilla, J. C., & Stevens, L. F. (2009). Do racial/ethnic differences exist in post-injury outcomes after TBI? A comprehensive review of the literature. *Brain Injury*, 23(10), 775-789.

Gary, K. W., Nicholls, E., Shamburger, A., Stevens, L. F., & Arango-Lasprilla, J. C. (in press). Do racial and ethnic minority patients fare worse after SCI: A critical review of the literature. *NeuroRehabilitation*.

National Spinal Cord Injury Statistical Center (NSCISC), Spinal cord injury facts and figures at a glance, Birmingham, AL, University of Alabama. Retrieved from <https://www.nscisc.uab.edu/>



# References

Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, D.C.: The National Academies Press.

United States Census Bureau., *An older and more diverse nation by midcentury*. Retrieved from <http://www.census.gov/newsroom/releases/archives/population/cb08-123.html>

U.S. Department of Health and Human Services (2006). Healthy People 2010 midcourse review: Disability and secondary conditions. Washington, D.C.: U.S. Government Printing Office. Retrieved from <http://www.healthypeople.gov/2010/data/midcourse/pdf/fa06.pdf>

U.S. Department of Health and Human Services (2010). National healthcare disparities report. Rockville, MD: Agency for Healthcare Research and Quality. Retrieved from <http://www.ahrq.gov/qual/nhdr10/nhdr10.pdf>