

Does Public Interest in Specific Injuries Increase When They Occur During Mixed Martial Arts Bouts? A Study of Google Search Patterns

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Introduction

- Mixed martial arts (MMA) is a combat sport that combines fighting techniques from many disciplines, such as wrestling, boxing, karate, Muay Thai, and Brazilian Jiu Jitsu.
- In the early 1990s MMA entered the United States as the Ultimate Fighting Championship (UFC). Both the internet and social media have advanced the popularity of MMA and have increased the public's exposure to fighting injuries.
- Past Google Trend studies have focused on the influence celebrities have on public awareness of various disorders like cancer and depression.
- The objective of this research is to examine injuries from popular UFC bouts in order to determine whether the volume of Google searches for specific injuries increases after the associated fights.

Methods

- Our sample of injuries was gathered from "Sherdog's Top 10 Worst UFC Injuries" available from www.sherdog.com.
- Google Trends (GT) was used to evaluate search interest in these injuries before and after the bouts in question.
- Injury information, the injured fighter's name, date of injury, and the popularity of the fighter (measured by number of Twitter followers) were gathered from Google Trends searches.

Image 1: Anderson Silva-Broken Leg



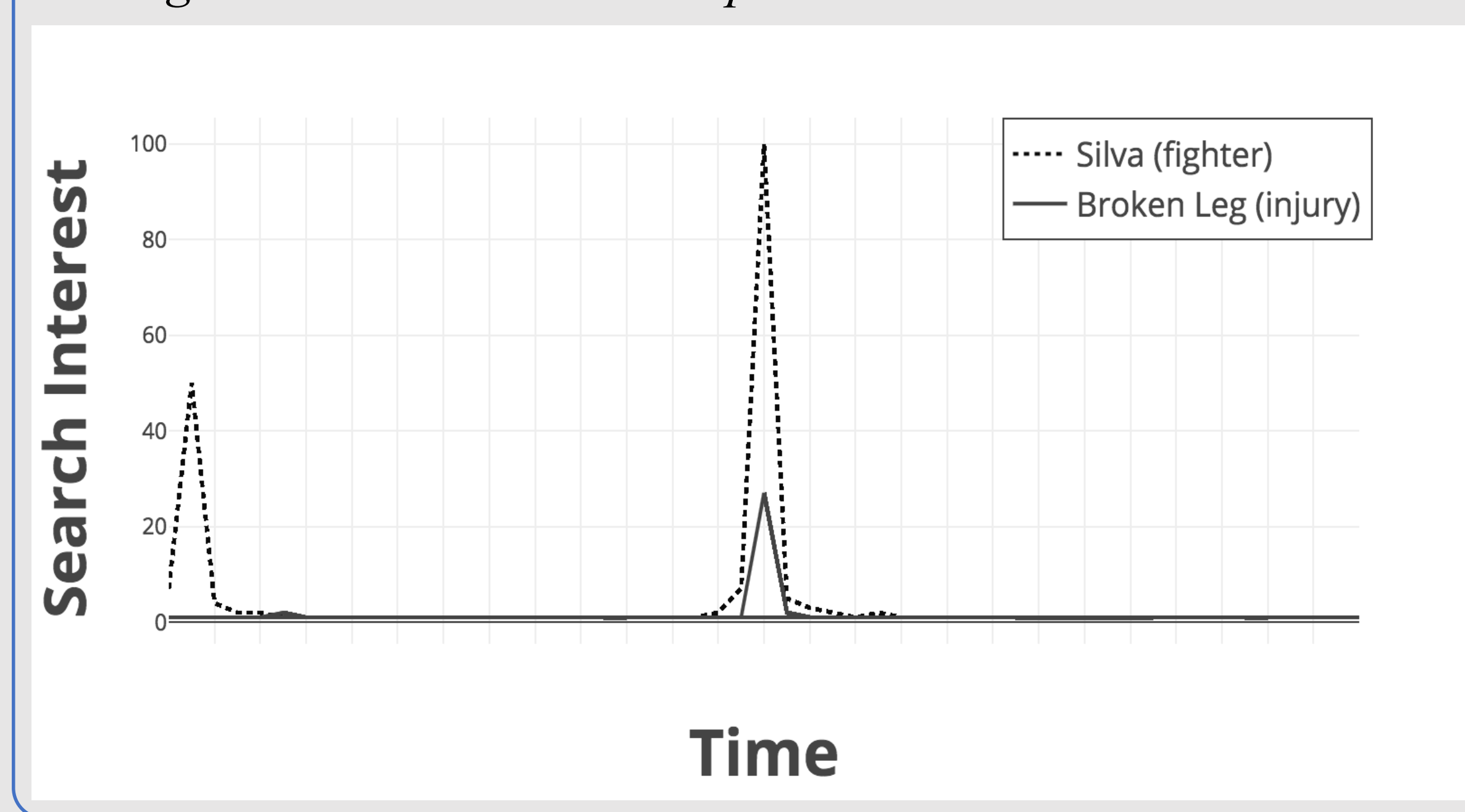
Results

- A co-occurring pattern was observed between searches for the fighter and for the injury (i.e., an alignment) in 9 of 10 cases (*Table 1*)
- The percent change in search interest for injuries increased in 9 of 10 cases (median = 446%, IQR: 168.75%-1643.75%).
- A moderate correlation was found between the number of Twitter followers and the percent change in search interest from baseline to peak ($r_s=.40$)

Table 1: Fighter-injury characteristics for each injury analyzed.

Injured Fighter	Injury Searched	Number of Twitter followers	Percent Increase in Injury Search Interest
Anderson Silva	Broken Leg	8.08M	2600
Tim Sylvia	Dislocated Elbow	18.1K	2400
Jon Jones	Broken Toe	2.03M	1800
Rory MacDonald	Broken Nose	229K	1175
Antonia Rodrigo Nogueira	Broken Arm	1.33M	525
Corey Hill	Broken Leg	No Twitter Account	367
Leslie Smith	Cauliflower Ear	21.9K	225
Rich Franklin	Broken Nose	200K	150
Mark Hominick	Hematoma	56.3K	112
Brandon Vera	Broken Jaw	101K	0

Fig. 1: Anderson Silva example GT chart



Conclusions

- Google search interest in fighters and injuries appears to increase shortly after injury occurrence.
- Sports medicine personnel may use this information for the timely dissemination of evidence-based information about sports and trauma related injuries.
- Thus, sports medicine personnel could play a contributing role in increasing the accuracy of online health by decreasing the amount of inaccurate information that is accessible to the public.
- More broadly, this study highlights how investigation of public search interest may ultimately have a positive impact on health care outcomes.

References

- Lystad RP, Gregory K, Wilson J. The Epidemiology of Injuries in Mixed Martial Arts: A Systematic Review and Meta-analysis. *Orthop J Sports Med.* 2014 Jan;2(1):2325967113518492.
- Sherdog.com. Sherdog's Top 10: Worst UFC Injuries - Top 10 [Internet]. Sherdog. Sherdog.com; [cited 2018 Jun 12]. Available from: <http://www.sherdog.com/news/articles/1/Sherdogs-Top-10-Worst-UFC-Injuries-105257>
- Explore results by region - Trends Help [Internet]. [cited 2018 Jul 9]. Available from: https://support.google.com/trends/answer/4355212?hl=en&ref_topic=4365530
- Glynn RW, Kelly JC, Coffey N, Sweeney KJ, Kerin MJ. The effect of breast cancer awareness month on internet search activity--a comparison with awareness campaigns for lung and prostate cancer. *BMC Cancer.* 2011 Oct 12;11:442.
- Brigo F. Impact of news of celebrity illness on online search behavior: the "Robin Williams" phenomenon'. *J Public Health.* 2015 Sep;37(3):555-6.
- Cram P, Fendrick AM, Inadomi J, Cowen ME, Carpenter D, Vijan S. The impact of a celebrity promotional campaign on the use of colon cancer screening: the Katie Couric effect. *Arch Intern Med.* 2003 Jul 14;163(13):1601-5.

Image 2: Mark Hominick-Hematoma

