# Life After Spinal Cord Injury

## Tableau Dashboard

Link: https://public.tableau.com/views/HumanMigration\_16511842170780/Story2?:language=en-US&:sid=&:display\_count=n&:origin=viz\_share\_link

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## Motivation:

Growing up with a quadriplegic mother and understanding the everyday challenges her injury created, it was very inspiring for me to see her accomplishments post injury, especially when I understood how much more difficult everyday life was for her compared to an able-bodied person.

During my mother’s initial hospitalization post injury, her doctor told her that she would never drive, never get married and never have a family. Not only did she accomplish all three of these milestones, but she also went on to obtain a Bachelor’s degree from Rice University as well as work to help other SCI survivor’s achieve independent living.

Due to my experience, I would like to better understand how other survivors’ life milestones compare at injury versus post injury. Do they let their injury stop them from continuing to live a full life? Or do they continue to strive for their goals, even with the everyday obstacles their SCI injury places in front of them?

## Questions:

How does a SCI injury survivor’s milestones compare at injury vs post injury? Do they let their injury stop them from continuing to live a full life? Or do they continue to strive for their goals, even with the everyday obstacles their SCI injury places in front of them?

* What is the average age a spinal cord injury occurs?
* What is the average number of years a SCI survivor lives post-injury vs at large?
* What percentage of survivors continue to give birth at injury vs post injury?
* What percentage of survivors continue to pursue higher education at injury vs post injury?
* What percentage of survivors continue to pursue a career at injury vs post injury?

## Normalizing the Data

The dataset I selected consisted of years from 1972 through 2021.

I selected to work with all data from all years.

The database analyzed contained three datasets: Form I which contained At Injury information, Form II which contained post injury information ranging from 1 year up to 30+ years after injury and Record Status, which contains records of survivor’s who have passed away, their date of death and cause of death.

I then created multiple dataframes and narrowed down to the values that I wanted to use for my analysis.

My initial approach was to use data from 2 years 2015 and 2019 and then compare the difference/ correlation, after having done the entire process in Python I realized that there was not much of a difference between the two and therefore I ended up using 2019 data.

## Problems and Hurdles

It was a challenge to clean and organize data in Python for some of the dataset. Statistical Risk Assessment data consisted of values in log format and that required some calculation in python to convert it to readable value. Web- scarping Global Peace Index was another hurdle that took some time to work.

## Technologies Used

1) Python: Matplotlib / NumPy / Pandas / Seaborn - for exploration, normalizing and aggregation of the dataset

2) Power Bi - for creating interactive dashboard

3) PowerPoint - for introduction of Project

## Data Sources

To answer the above questions I used the following sources to collect datasets for my analysis

1) National Spinal Cord Injury Statistical Center

<https://www.nscisc.uab.edu/Research/NSCISC_DatabasePublicUse>

2) Centers for Disease Control and Prevention, “Life Expectancy Dropped for the Second Year in a Row in 2021”

<https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2022/20220831.htm>

## Conclusion

Survivors still go on to pursue higher education, strive to maintain careers, get married and have children.

Post injury, SCI survivors post high school degrees obtained increased by 50.45%.

Survivors continue to and start careers after their injury. Though, based on the analysis, maintaining that career could be difficult, but is still possible.

Survivors are still getting married, but divorces grew at over three times the marriage rate.

Survivors continue to have children with the child births increasing 9.6% after injury.

The data analysis shows that it can be concluded that compared to injury versus before injury, SCI survivors do not allow their injury to stop them from living their lives to the fullest.

It is very inspiring to see that my mother’s journey was not an exception but the norm. I hope this data can give hope to other survivors that life does not stop at injury.