Learning About Disease Associations in Taiwan

Keshav Dasu* Sandra Bae† Takanori Fujiwara‡ Kwan-Liu Ma§

University of California, Davis

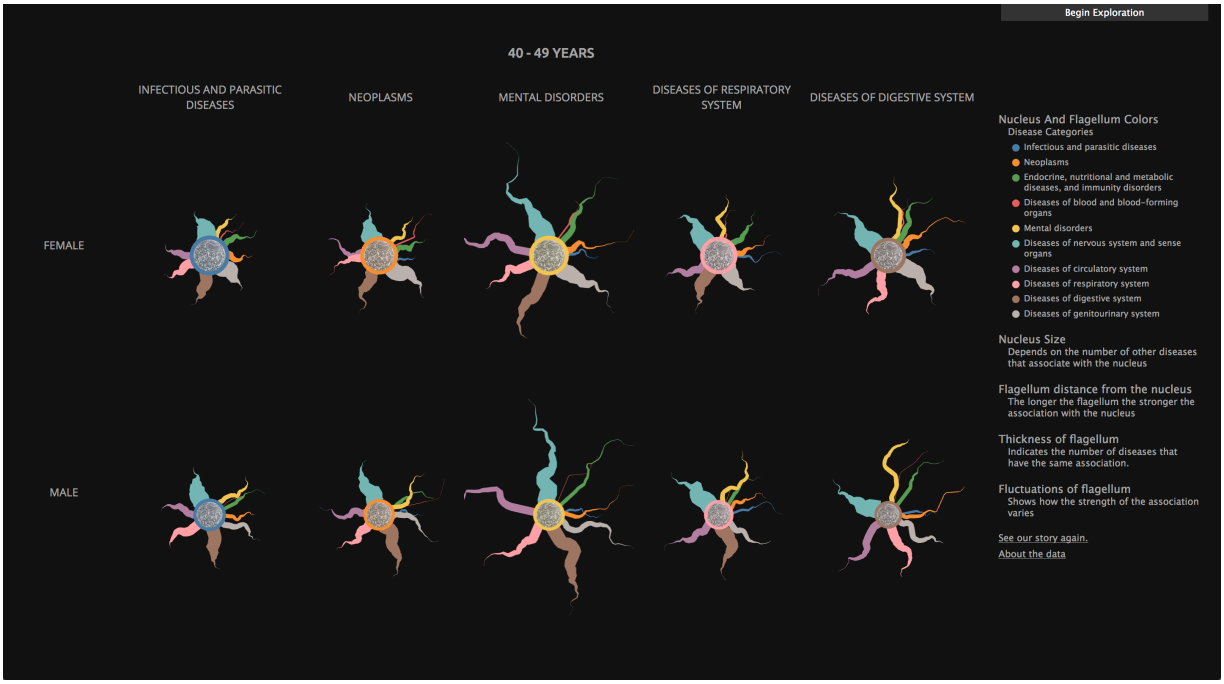

Figure 1: Disease associations in male and female 30-39 year olds. The visualization shows that mental disorders have a strong and varied association for each disease category from the length and fluctuation of the flagella. On the other hand, infectious and parasitic diseases do not; they have a larger amount of diseases with associations than mental diseases. This is indicated by the size of the capsule. Furthermore, we can see that diseases of the digestive system have stronger associations to mental disorders (indicated by the longer length of the orange flagellum) when compared to that of other disease categories.

Abstract

We analyzed the data [3, 6] from Taiwans National Health Insurance Research Database (NHIRDB) [2]. It is stratified into ten age groups, and for each group the likelihood of a disease contracted from each of the other diseases is calculated. We depict disease associations among the studied subjects by designing a visualization that allows us to answer questions, such as 'If I have heart-failure what else am I susceptible to?' and 'How does age play a role?' Our visualization is modeled after a salmonella bacteria cell based on [5]. This visualization illustrates the co-occurrence of diseases. The capsule size denotes the number of diseases that are associated. Each flagellum represents another disease category. Longer length of the flagellum represents a stronger association. Flagellum thickness represents the number of diseases with the same association at a given point. Fluctuation of a flagellum shows variation in strength of association. (View our presentation at `https://k-dasu.github.io`)

*e-mail:kdasu@ucdavis.edu
†e-mail:suybae@ucdavis.edu
‡e-mail:tfujiwara@ucdavis.edu
§e-mail:ma@cs.ucdavis.edu

Acknowledgments

The authors wish to thank both Dr. Shabbir Syed Abduland and Dr. Yu-Chuan Li at Taipei Medical University for the discussion on the data-set [2]. This research was sponsored in part by the U.S. National Science Foundation through grants IIS 1741536 and IIS 1320229.

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