Using Interdisciplinary Approaches to Identify Key Diabetes-related Social Media Influencers in the UK

Zhaozhang Sun & Zining Wang

King's College London, Strand, London, WC2R 2LS, UK

Poster Number: 7

zhaozhang.sun@kcl.ac.uk; zining.wang@kcl.ac.uk

BACKGROUND

- **Health communication** is essential in promoting healthy lifestyles, preventing unhealthy behaviours, managing disease conditions, and eventually reducing health disparities.

- **Social media** provides unprecedented opportunities for enhancing health communication for both healthcare providers and people with health conditions, including self-management of chronic conditions such as diabetes.

- Meanwhile, a special group of active social media users have started playing a pivotal role in providing health 'solutions'. Such individuals are often referred to as '**influencers**' because of their 'central' position in the online communication system and the persuasive effect their actions and advice may have on audiences.

- Work on social media influencers (SMIs) has gained much attention in a specific research field of "**influencer marketing**", which mainly focuses on emphasising the use of SMIs to promote or endorse brands' products and services in the business. Yet to date, a lack of evidence to guide the identification of health-related SMIs has been identified.

- This article, therefore, presents a study of **Twitter-based social network analysis** to identify key diabetes-related SMIs in the UK to bridge the research gap that exists in terms of linking work on influencers in marketing to health communication.

- Research Aim: To identify key health-related, especially diabetes-related social media influencers.

METHOD

- The analysis is based on a dataset composed of all tweets including hashtags of the three events selected for this study: Diabetes UK Professional Conference 2022, Diabetes Week 2021, and Insulin Safety Week 2021. The detailed analysis procedures have been shown in the flowchart 1. Social Network Based Influencer Identification Model.
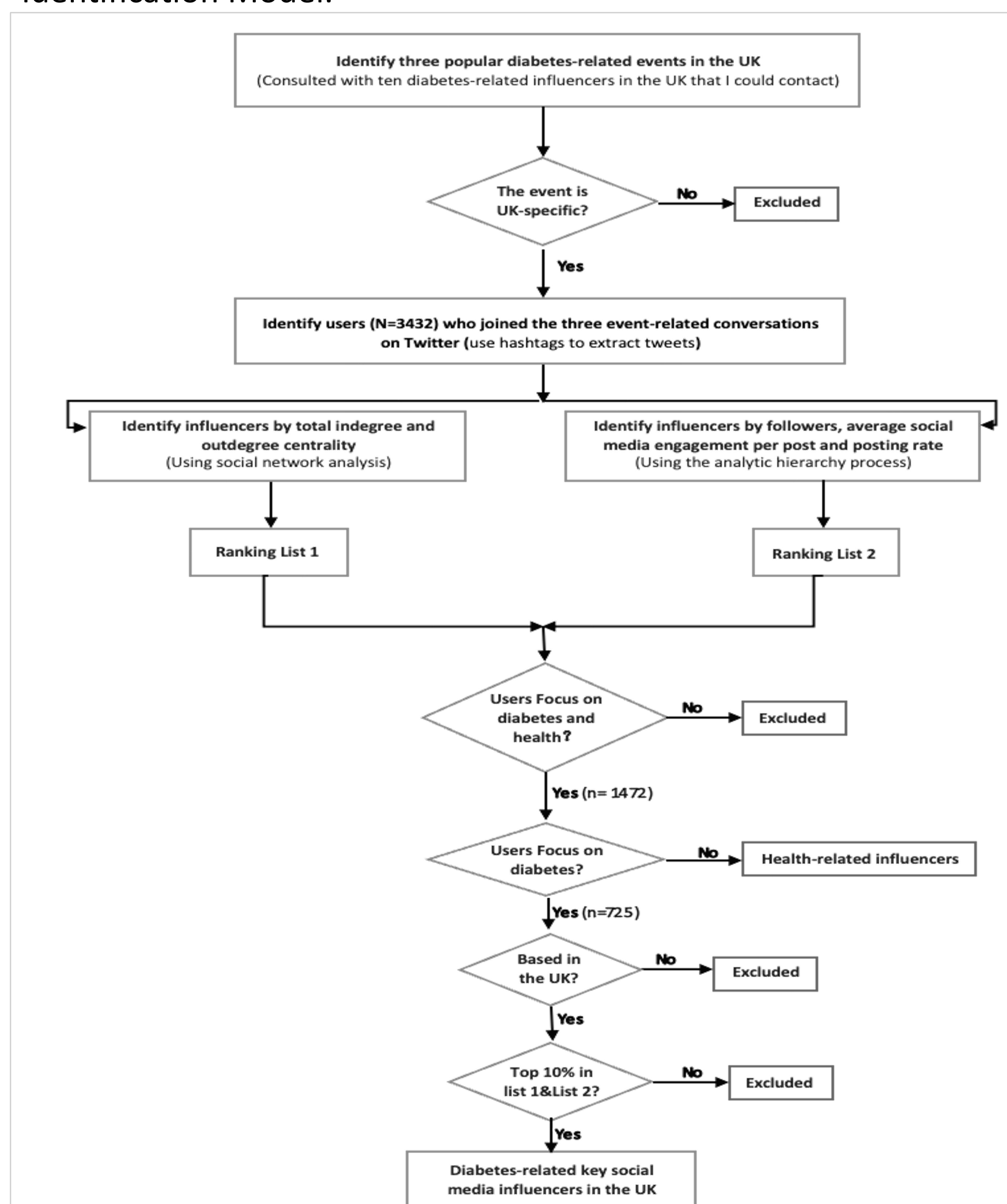
RESULTS & CONCLUSIONS

01. Network Data

Table 1: Networks data

Events	Time Period	Nodes	Edges
Insulin Safety Week 2021	May 17-23rd 2021	986	1850
Diabetes Week 2021	June 14, 2021 - June 20, 2021	2135	3131
Diabetes UK Professional Conference 2022	28 March to 1 April 2022	640	2002

Table 1 provides a breakdown of the data collected.
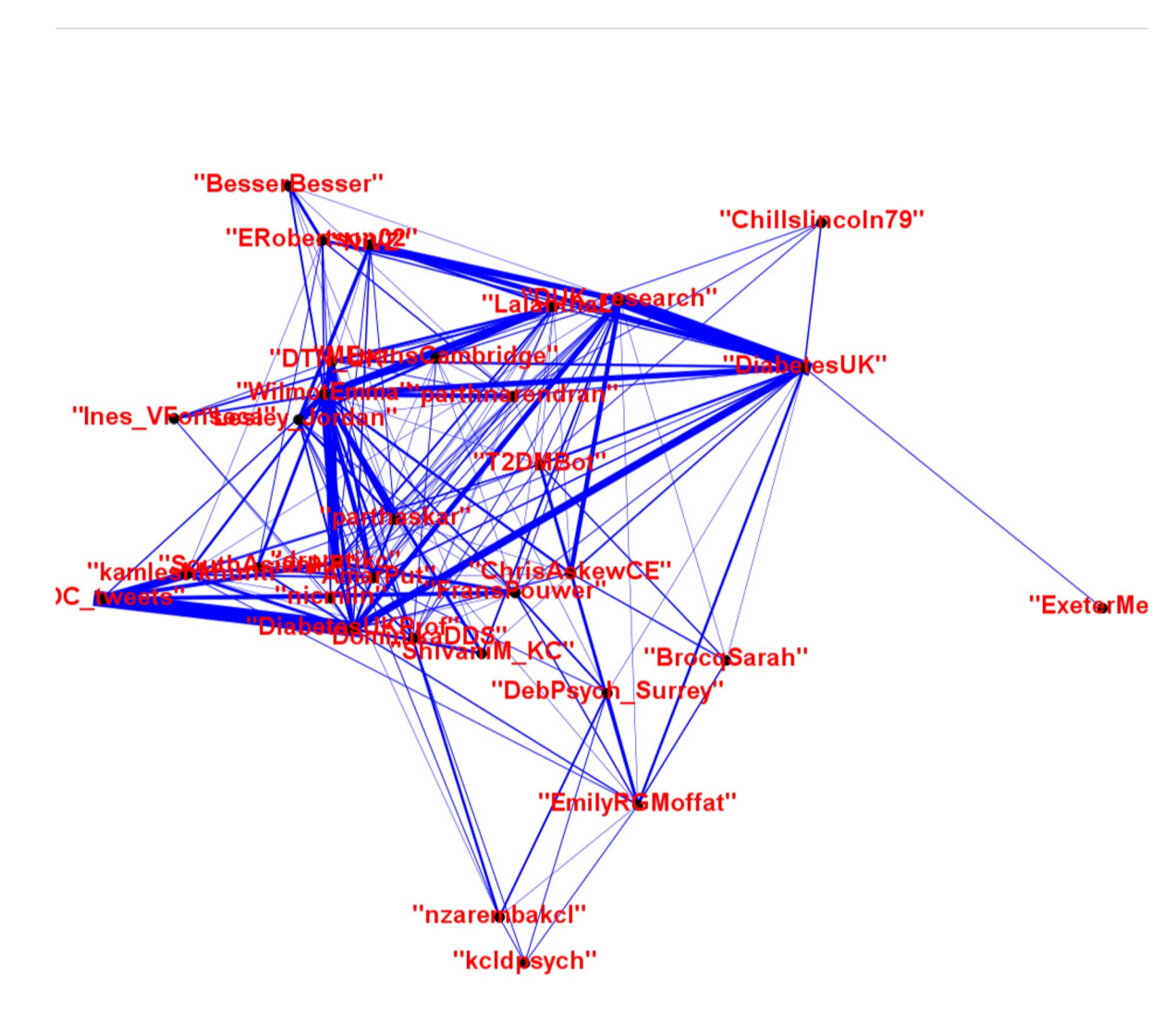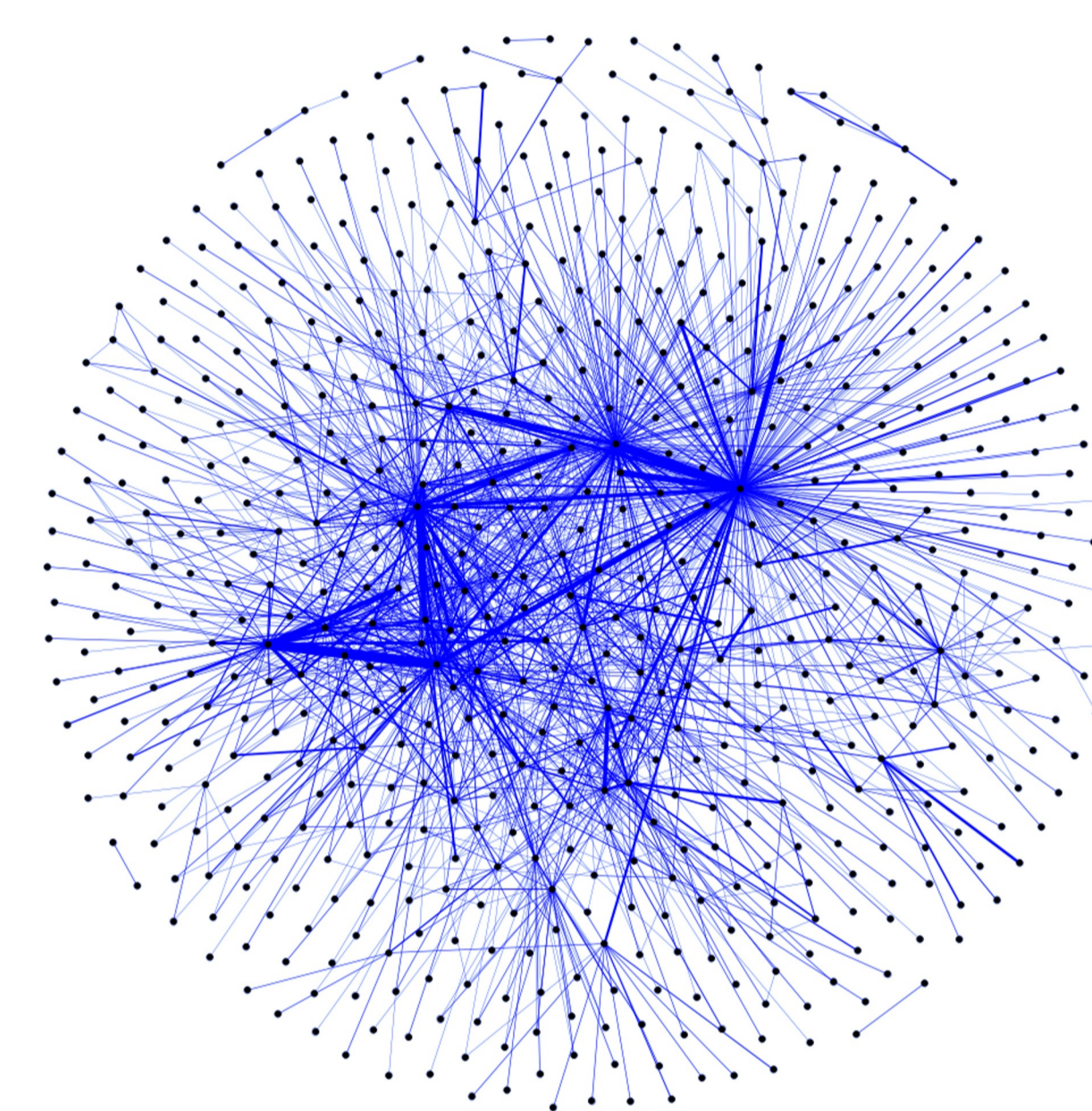
02. Social Network Analysis (SNA)

Figure 1: Twitter network of Diabetes UK professional conference 2022

Figure 2: Key influencers in DUKPC

Figure 1 and Figure 2 show the "Diabetes UK professional conference 2022 network". Twitter users with high indegree and outdegree were identified as key influencers because they have a central position in the network. Indegree may indicate which nodes were most central for the discussion in each group. While outdegree shows us which nodes are more engaged in propagating certain ideas.

03. Analytic Hierarchy Process (AHP)

Table 2: Criterion Weights of the Indicators to measure the influence of a user on Twitter.

Serious Number	1st Hierarchical Elements	Weight of 1st Hierarchical Indicators	2nd Hierarchical Indicators	Weight of 2nd Hierarchical Indicators	Overall Weight of 2nd Hierarchical Indicators	Ranking
1	User network visibility	0.230769231	Number of Followers	1	0.230769231	2
2	User activeness	0.076923077	Posting rate	1	0.076923077	5
3	Social media engagement	0.692307692	Like	0.5	0.346153846	1
4			Reply	0.25	0.173076923	3
5			Retweet	0.25	0.173076923	3

Table 2: Criterion Weights of the Indicators to measure the influence of a user on Twitter.
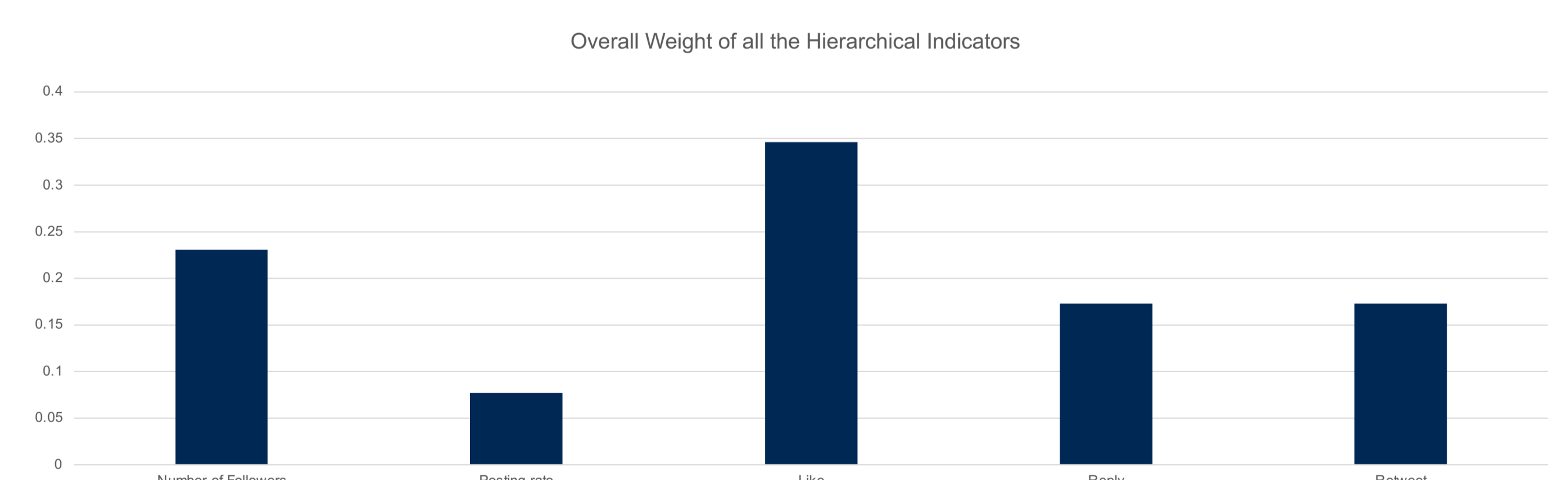

Table 2 shows the criterion weights of all the hierarchical indicators. Furthermore, 3432 Twitter users in the dataset were ranked based on their network visibility, network activeness and the social media engagement of their posts. The highest ranked accounts were identified as key influencers.

FUTURE WORK

- To explore the diabetes narratives presented by key social media influencers on social media platforms.
- To reveal the factors that may impact influencers' narrative health communication within the context of diabetes prevention.
- To explore potential implications those presented narratives may have on audiences' health-related knowledge, attitudes and behaviours.