Objective:

The purpose of this study was to systematically assess if communities of practice and individuals connected to them influence the diffusion of open practices, open data, open source in Latin America.

Method:

We collected a sample of 5515 tweets originated from 726 different accounts that included the terms "ciencia abierta" OR "cienciaabierta" OR "open science" OR "openscience" OR "ciência aberta" OR "ciênciaaberta" OR "open source" OR "opensource" OR "open access" OR "openaccess" OR "open research" OR "openresearch" OR "investigación abierta ciencia" OR "código abierto" OR "códigoabierto" OR "pesquisa aberta" OR "pesquisaaberta" OR "códigoaberto" OR "código aberto" OR "acesso aberto" OR "acessoaberto" that were posted in Spanish. We excluded tweets originated from people located in Spain, accounts linked to government official accounts, and commercial accounts.

The majority of individuals identified as female (89%) and/or as parents (78%). A smaller proportion reported an occupation (29%) and/or post-secondary education (24%). The majority of individuals for whom political affiliation could be determined (28%, n = 55) identified as supporters of Donald Trump (56%, n = 31), a conservative and the 2016 Republican nominee for President. This was followed by supporters of Bernie Sanders (11%, n = 6), a contender in the 2016 Democratic primary and a self-described democratic socialist. Age could only be determined for 2 individuals. Location was mentioned by 136 individuals, most frequently California (n = 24), followed by Texas (n = 9), Australia (n = 8), and Canada (n = 8). Only 5 individuals we coded were located in the same state as the organization that posted the pro-vaccination video. Of the 116 individuals with at least one public anti-vaccination post from 2015 to 2017, posts about ‘‘educational material” (73%), ‘‘media, censorship, and ‘cover up’” (71%), and ‘‘vaccines cause idiopathic illness” (69%) were the most common topics (Table 2).

Social network analysis

A 2-mode network was constructed with 133 nodes, representing 115 people and 18 topics (Fig. 1). There were 1068 edges, or connections, between people and topics. The network had a density of 0.122 and average degree of 8.03. Modularity analysis found 4 distinct sub-groups. Based on the overarching themes represented in these sub-groups and the topics of vaccine denial provided by the WHO [33], we named these sub-groups (1) trust, (2) alternatives, (3) safety, and (4) conspiracy. We also assessed betweenness [37], a measure that identifies all of the shortest paths found between any 2 nodes in the network. In this network, ‘‘vaccination policy is a violation of civil liberties” had the highest betweenness centrality (b = 0.135); it was the topic most discussed by people who discussed only one topic.