

## Expressions of scientific literacy in the social media: The case of fluoridation of drinking water in Facebook discussions in Hebrew

Doris Shaheen-Asakly, Daniela Orr, Ayelet Baram-Tsabari, Faculty of Education in Science and Technology, Technion

dorisasakly@gmail.com



Introduction **Research field** Scholars called for wide and broad understanding of scientific literacy Science by examining the public daily usage Communication and understanding of science. Scientific literacy defined as "the **Social media** ability to engage with science-Facebook related issues, and with the ideas of science, as a reflective citizen" (OECD, **Drinking water** Socio-2015). fluoridation Scientific



Objectives and research questions

This research aims to study features of scientific literacy in a social media environment. Specifically we ask:

1. What characteristics of scientific practices, nature of science, and argumentation are expressed in Facebook discussions about drinking water fluoridation?

2. What are the interactions between the different stances toward fluoridation and the use of features of scientific literacy by participants in these debates?

	Study 1:	Study 2:
	Quantitative analysis of Scientific practice & Nature of science	Qualitative analysis of Argumentation
Period	2012-2014 Ministry of Health halted compulsory fluoridation.	2015 Ministry of Health brings back compulsory fluoridation.

The	
sampling	
process	

Facebook search for keywords and choice of sources.

A news clip debating water News clip shared on Facebook fluoridation in Israel, that was 284 times viewed about 20k times. Two suitable sources found: News clip shared page: "Returning Balance" and publiciy 81 times open group: "Sharp Thinking" **15 publicly** shares 3000 items contain followed by "fluoridation" and more than 4 "water fluoridation" comments 895 items in which fluoridation is central to the discussion 15 shares followed by 251 comments Phiniaua hkipaau uv Analysis Codebook comprised of several dozen variables, such as: Nature of Science and Argumentation structure: include Skeletal, Enhanced, Elaborated. Scientific practice features following the US Next Generation Science Standards, Argumentation reasons: include Abstract, Consequential, Rule-based, Authority, Personal, Vague, Socio-demographic variables (gender, education, etc.) and Position regarding water and Health-societal. fluoridation. Findings Argumentation reasons: Scientific features in **Facebook discussions** Supporters used more rule-based reasons than opponents (z=-2.95, p<0.05). Scientific Nature of practice Science 50% 64% , n=402 40% 21%, n=131 Of the items contained at least Of the items contained at least one NOS 30% one scientific practice feature feature 20%



## Discussion

- Fluoridation supporters express more use of scientific literacy features relatively to the opponents.
- initial suidens as four a dulta uses of a signatificality was sufficient uses the straight



107	22	294
	<b>6</b> 18	
		775

education policy	regarding the	uptake and	usage of	scientific i	literacy featu	res in real
	0					

