Headline news: a simulation game for hospital pharmacy leaders

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Background

♦ Pharmacists work in a complex environment.

♦ To make sound decisions in a changing environment, pharmacists must access and pursue quality information.

Objectives

♦ To evaluate the ability of pharmacy leaders to discriminate true and false information in a simulated headline news bulletin.

Methods

♦ This is a prospective descriptive study.

♦ Participants at a Canadian pharmacy management seminar were exposed to a 10-minute news bulletin with 20 headlines.

   ♦ 3 false (score 0);

   ♦ 4 partly true (score 5);

   ♦ 12 true (score 10).

♦ Respondents were asked to score their **level of awareness** and their **evaluation of truthfulness** of the material

   ♦ 1-10 scale (1-not familiar or untrue, 10-very familiar or totally true).

♦ Average score of awareness and truthfulness were calculated for each headline.

♦ Thereafter, respondents scored 10 statements regarding their **exposure to false information**

   ♦ 5-level frequency scale

♦ They also scored 12 statements regarding their **strategies to identify the true from the false**

   ♦ 1-10 scale

Results

♦ Forty participants took part in the simulation game.

Table I Demographics

Variables	Results (%)
Sex (n=40)	
Male	52%
	48%
Age group (years old)	
20-30	0 %
31-40	8%
41-50	48%
51-60	32%
> 60	12%
Experience in pharmacy practice (years)	
< 5	0%
5-10	0%
11-15	10%
16-20	20%
21-25	22%
>25	48%

Headlines simulation

♦ In most cases (13/20), participants were unable to identify the true from the false with precision (i.e. an absolute difference of >3 between the their evaluation of truthfulness and the true score).

♦ However, the more aware respondents were about a topic, the lesser the gap was between the true score and the respondents' score.

♦ There was low correlation between awareness and truthfulness scores ($r2$: 0.628).

Example of a false headline

Headline 16: The drug manufacturer of Erkefetumab has issued on June 5th a warning letter regarding two serious cases of hepatotoxicity. Among the 3 patients with a hepatic abnormality who died, 2 had liver failure and 1 a liver toxicity. Death was attributed to the hepatic event in all cases. The cause of liver dysfunction in these patients was possibly related to erkefetumab.

Headline #16

♦ False (True score = 0)

♦ Familiarity score (mean±SD): 3.4±2.8 (i.e. respondents were not familiar with this subject)

♦ Truthfulness score (mean±SD): 7.8±14.9 (i.e. respondents thought it was true)

♦ Discrepancy (between the their evaluation of truthfulness and the true score): -8

Example of a true headline
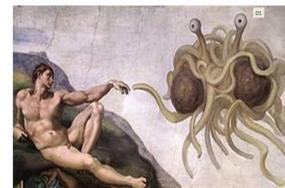
Headline 1: The Flying Spaghetti Monster has released a press media as they engaged in disputes again with creationists, including in Polk County, Florida, where they played a role in dissuading the local school board from adopting new rules on teaching evolution. (...)

Headline #1

♦ True (True score = 10)

♦ Familiarity score (mean±SD): 1.5±1.3 (i.e. respondents were not familiar with this subject)

♦ Truthfulness score (mean±SD): 2.7±2.7 (i.e. respondents thought it was false)

♦ Discrepancy (between the their evaluation of truthfulness and the true score): 7

Exposure to false information

♦ A majority of respondents (95% - Totally agree and Partially agree combined) believed many decisions taken by hospital administrators do not rely on good science.

♦ A majority (90%) thought that there is a growing risk for faked data in science.

♦ A majority (90%) thought pharmacists should be trained differently to be better armed against false science

Strategies to identify the true from the false

♦ At least 50% of respondents have used 8/12 strategies proposed

Table II Strategies used in professional life (personnal lifre strategies not shown)

Strategies in professional life to identify the true from the false	Used	Effectiveness
I make sure the scientific source used to search for information is reliable (e.g. I know the source)	95%	7.77 ± 1.88
I make sure I assess the probability/veracity of the retrieved information (e.g. makes sense)	90%	6.97 ± 2.10
I make sure both consulted scientific sources are independent (e.g. not the same author)	54%	6.97 ± 2.25
I make sure I used a second scientific source whenever required to confirm the initial information	77%	6.95 ± 2.70
I make sure the hyperlink of the scientific source consulted is reliable	69%	6.36 ± 3.12
I make sure I discuss the retrieved scientific information with another colleague for validity check	74%	5.85 ± 2.21
I make sure I go on the web (or elsewhere) to detect issues regarding the scientific information retrieved (e.g. controversy, letter to the editor, mention of false data)	44%	5.75 ± 2.22
I make sure I try to reproduce the scientific information retrieved (e.g. the results) if possible	21%	5.25 ± 2.85

Discussion / Conclusion

♦ A simulation using a headline news bulletin format was used to support the reflection of pharmacy managers about finding the true and the false in their professional life.

♦ What should be done?

   ♦ Adopt policy/procedures to insure integrity throughout hospital processes

   ♦ Insure electronic surveillance (MyNCBI, RSS, specialized websites) of key sources of information and goods

   ♦ Use different strategies to identify/prevent fraud and false elements regarding authorshipt, data, drugs, internet pharmacy, ads, etc.