

# **ENVIRONMENTAL HEALTH OFFICER'S KNOWLEDGE OF SENSORY DEPRIVATION TANKS IN BC**

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# Outline

- Introduction
- Literature Review
- Methods
- Results
- Discussion
- Conclusion



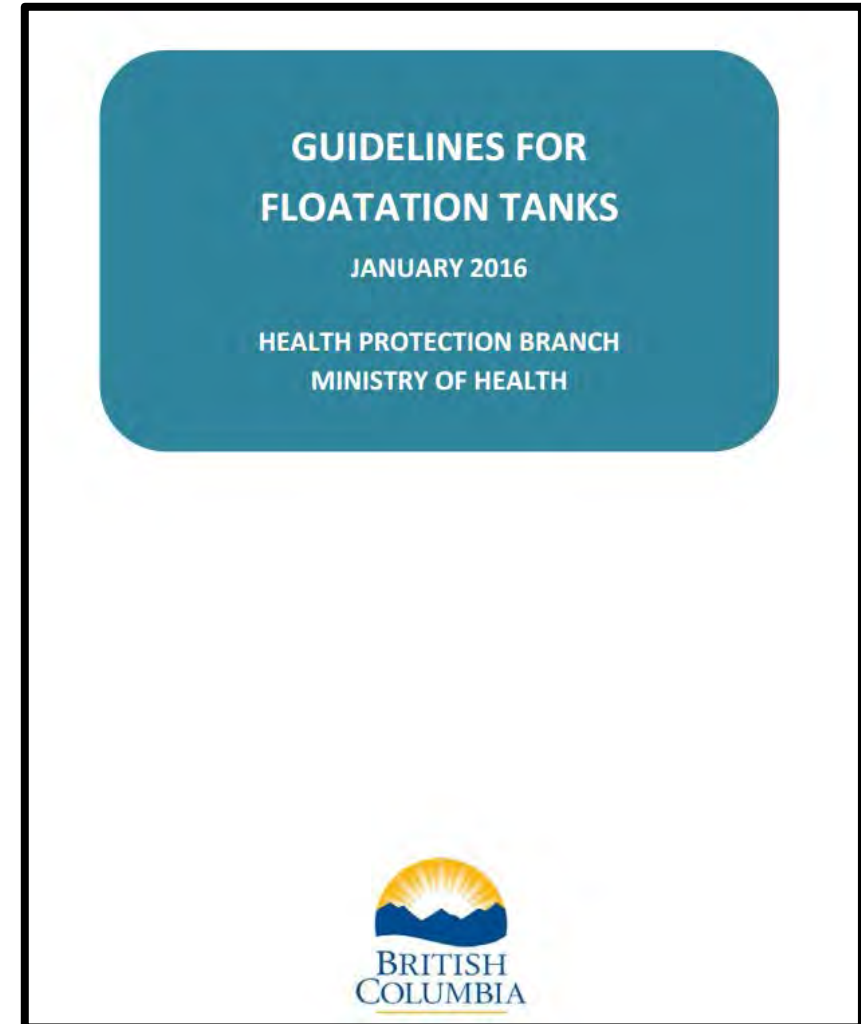
# What is a Floatation Tank?



# Importance to the Public Health Field

## EHOs Inspect PSEs

- Recently resurfaced into the PSE field
- Sanitation and disinfection of the tank
  - Prevent pathogen growth and spread
- Lack of legislation in this industry
  - Guidelines are used in place



# Literature Review

## **Recreational Water Disinfection**

- Chlorination and bromination for primary disinfection with filtration
- Ozone and UV can be supplemental forms of disinfection
- Hydrogen peroxide has been suggested by the community

# Literature Review

## Other Countries Legislation and Guidelines

- Australia has an extensive guideline for PSEs
  - Floatation tanks only has a small paragraph
- USA leave it up to the states to provide guidelines
  - National Sanitation Foundation
    - Based on product manufacturers and guidelines for recreational waters/pools
  - Floatation Tank Association
    - Non-governmental
    - Standards with no chemical disinfection

# Literature Review

## **BC Guidelines**

- Released January 2016
- Broken down into
  - Facility – disinfection, filtration, construction
  - Operations – operation and maintenance, general sanitation

# Purpose

- Examine EHO's knowledge about sensory deprivation tanks
  - Length of time EHOs have been in the field
  - Age
  - Geographic location



# Methods

- A survey was developed in Google Forms and Survey Monkey
- Disseminated to EHOs through e-mail with help from Gordon Moseley
- Demographic questions & 15 testing questions
- Results were then analyzed in Excel & SAS

The image displays three sequential screenshots of a survey form titled "Sensory Deprivation Tank Knowledge".

**Section 1 of 6:** This section contains an introductory letter. It begins with "Dear Respondent," and explains that the respondent is invited to participate in a research project. The project aims to assess Environmental Health Officers' understanding of sensory deprivation tanks. It mentions that the respondent is affiliated with the Environmental Health program at Bishop Cleeve Institute of Technology and that their participation is required for graduation. The purpose is to determine EHOs' general understanding of sensory deprivation tanks. It states that following the letter is a brief questionnaire that should take approximately three minutes to complete. It asks for a variety of questions about sensory deprivation tanks. It includes a "Voluntary Participation" section stating that participation is completely voluntary and can be stopped at any point. A "Confidentiality and Anonymity" section explains that data is for knowledge building and is confidential. It mentions that responses will be shared with the instructor and that the overall results will be summarized and presented in a report format. It provides contact information for further questions or concerns.

**Section 2 of 6:** This section is titled "Consent Form" and contains a "Disclosure Statement". It asks the respondent to agree to take part in the study. It lists several points of understanding: that any questions answered will be anonymous and confidential; that the questionnaire program (Google Forms) cannot contact the respondent; that participation is voluntary and can be withdrawn at any time. Below the statement are two radio button options: "I consent" with "Yes" selected, and "No".

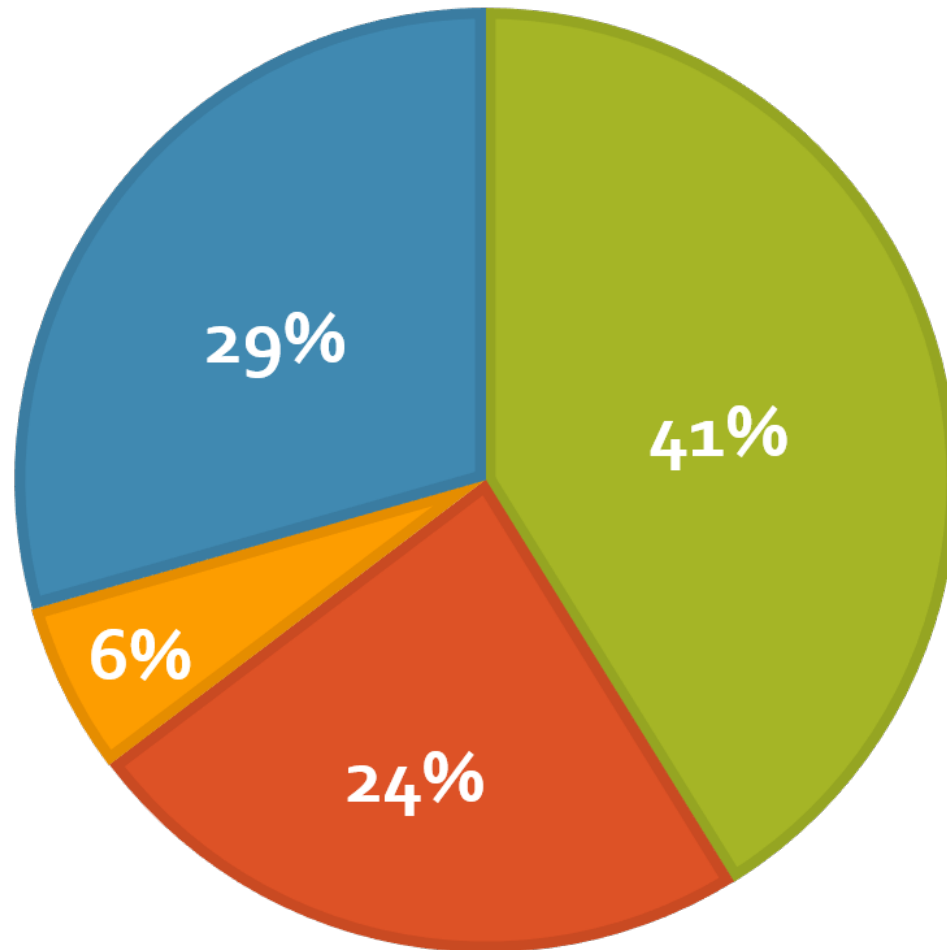
**Section 3 of 6:** This section is titled "Questionnaire - Demographics". It starts with the question "What is your gender?" and provides three radio button options: "Male", "Female", and "Other". The next question is "What is your age?" with five radio button options: "20-30 years old", "31-40 years old", "41-50 years old", "51-60 years old", and "61 years and over".

# Results

- 33 Participants
- Average score: **7.6/14 (54%)**
- Lowest score: **4/14 (29%)** – achieved twice
- Highest score: **12/14 (86%)**

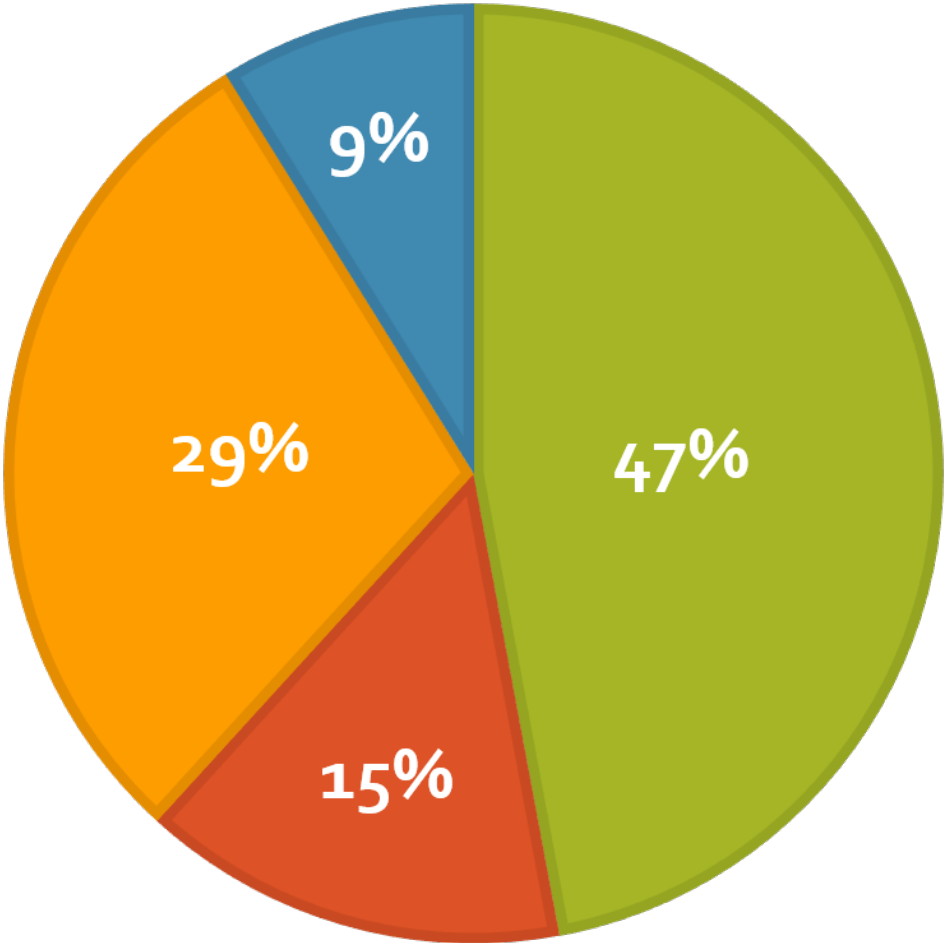
## WHAT DO FLOAT SPAS ADD TO THE WATER OF SENSORY DEPRIVATION TANKS TO ALLOW PEOPLE TO FLOAT?

■ Sodium Chloride ■ Magnesium sulphate ■ Potassium chloride ■ Do not know

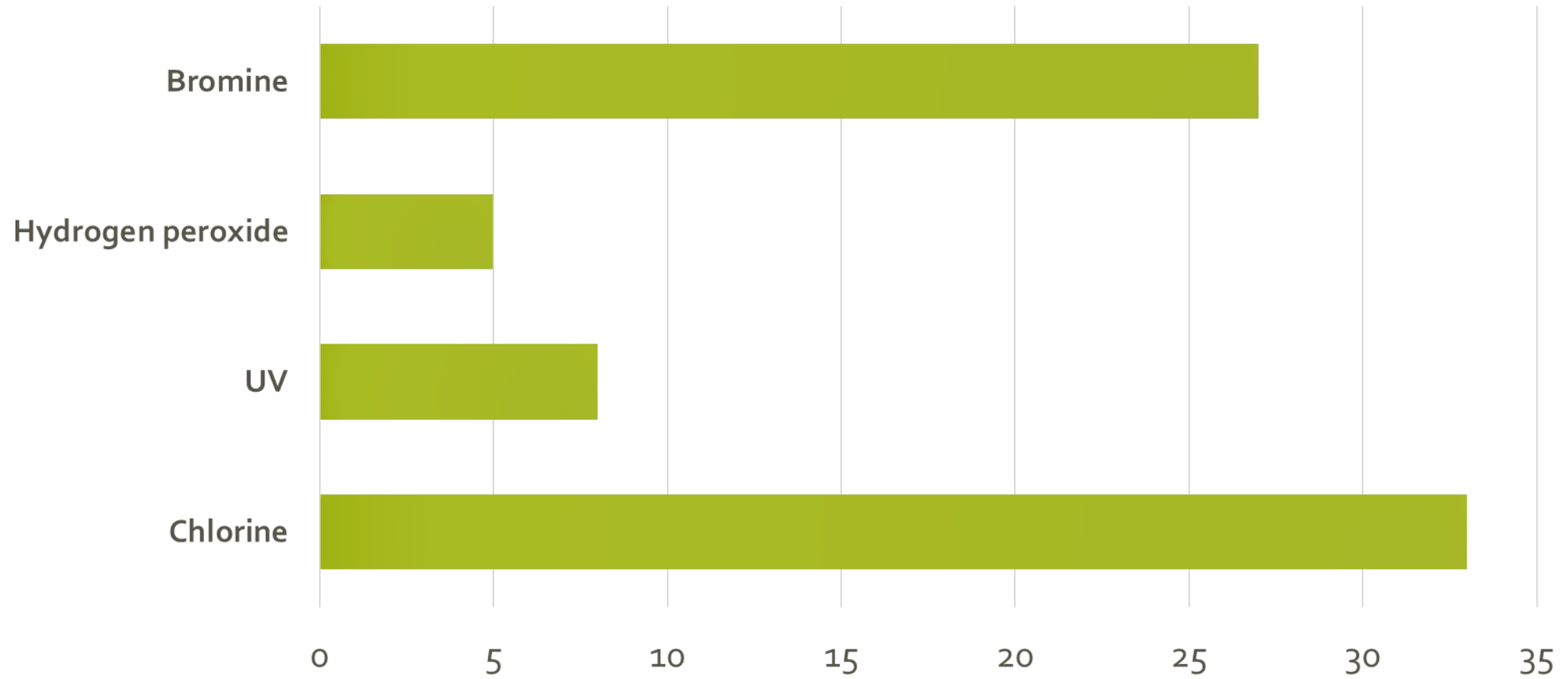


# WHICH REGULATIONS ARE FLOATATION TANKS REGULATED UNDER?

■ Regulated Activities ■ Pool Reg ■ Both ■ Do not know



# Acceptable primary disinfectants for the tank water? Select all that apply

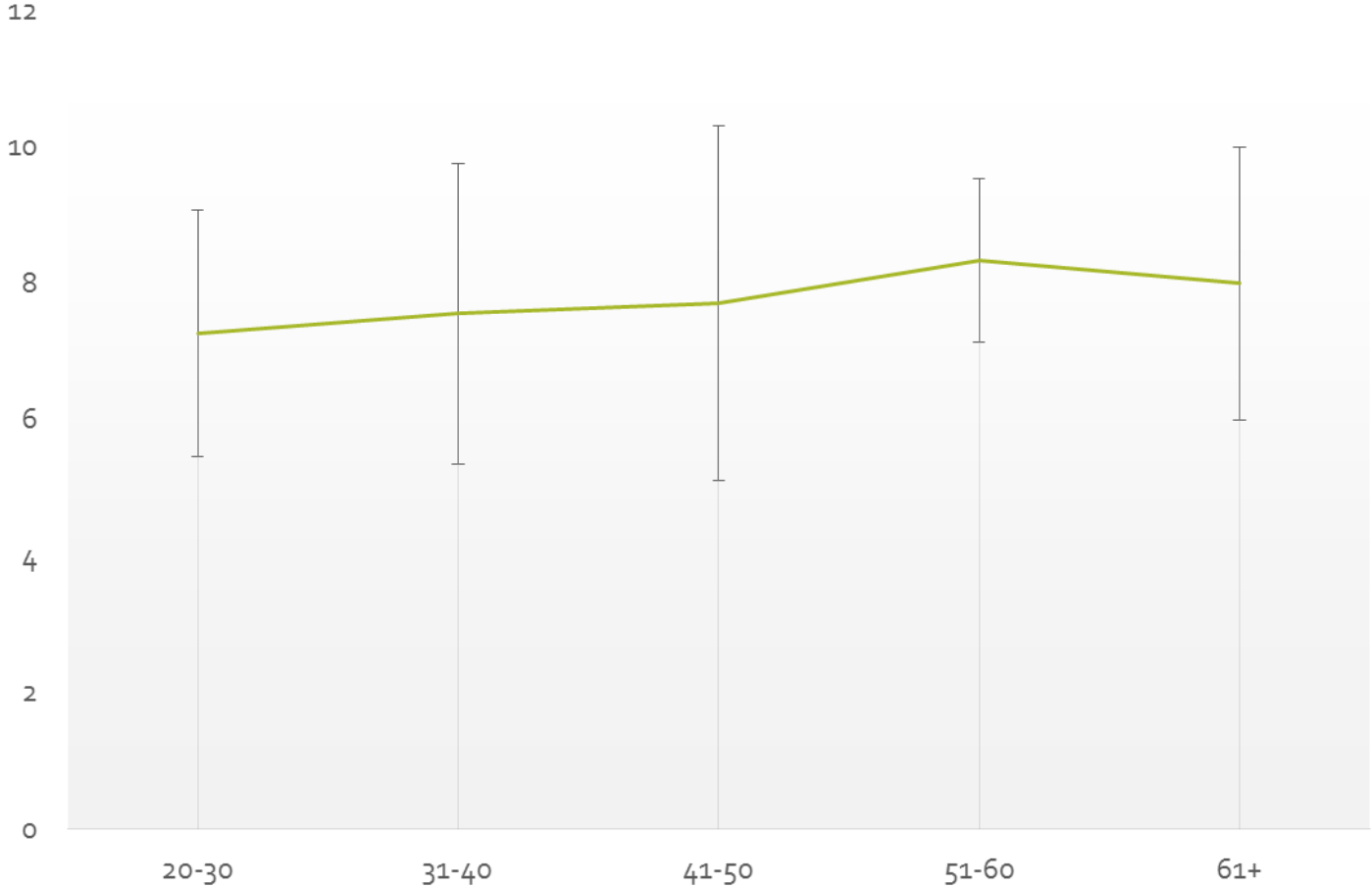


# Results

Hypothesis	Participants	Score (out of 14)
Years in the Field	Less than 5: 12	7.0
	More than 5: 21	8.0
Age - Overall	20-30: 11	7.2
	31-40: 9	7.6
	41-50: 7	7.7
	51-60: 3	8.3
	61+: 3	8.0
Age - Grouped	20-40: 20	7.4
	41+: 13	7.9
Geographic Location	Urban: 16	8.0
	Semi-urban: 8	7.4
	Rural: 8	7.0

# Results

Knowledge Scores by All Age Categories



# Results

Comparison	Test	p-value
Number of years worked	t-test	0.1879
Condensed Ages	t-test	0.4284
All Ages	ANOVA	0.9416
Geographic Location	ANOVA	0.5071



# Discussion of Results

- All three null hypotheses were not rejected ( $p\text{-value} > 0.05$ )
- Overall weak knowledge in EHOs across groups
  - Average score was 54%
- Small sample size



# Recommendations

- More time
  - Develop a more comprehensive survey
  - Response collection
  - Pilot test survey longer
- Have access to EHOs e-mail
- Larger survey

# Limitations

- E-mailed surveys had to go through another person
  - Unable to send reminder e-mails
- Insufficient time



# Future Research

- Sensory deprivation tank water analysis
  - Microorganism growth
  - Disinfection effectiveness
- Replication of this study
  - More comprehensive survey
  - Reflective of new guidelines
- Opinion survey between EHOs and float spa owners/operators

# Conclusion

- Overall weak knowledge regarding health and safety of sensory deprivation tanks
- Weak statistical significance
  - Small sample size
- Several avenues for future research



# ACKNOWLEDGMENTS

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Helen Heacock, Vanessa Karakilic, Jessica Ahn

**QUESTIONS?**

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# Image References

- <https://media-cdn.tripadvisor.com/media/photo-s/06/a7/62/98/float-nashville.jpg>
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