

Supplementary information for

Uncertainty about the risks associated with microplastics among lay and topic-experienced respondents

Thiele, Christina J.* and Hudson, Malcolm D.

Centre for Environmental Science, Faculty of Environment and Life Sciences, University of Southampton, University Road, Southampton SO17 1BJ, UK

*Email address corresponding author: c.j.thiele@soton.ac.uk and mdh@soton.ac.uk

S.1 Questions from the entire survey that were used for this publication

2. Rate your level of concern for the following environmental issues:

(Please rate every option given)

	Not concerned	Slightly concerned	Moderately concerned	Very concerned	Don't know
Air Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contamination of food sources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plastics in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Microplastics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase in global population	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drought	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Toxic chemicals such as pesticides or heavy metals in the oceans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. How concerned are you about microplastics in the environment?

(Please select only one answer)

- Very concerned Not concerned
- Moderately concerned Don't know
- Slightly concerned

5. Why are you concerned about microplastics in the environment?

(Please select at least one answer)

- Pollution of the marine ecosystem Might be inhaled if suspended in the air
- Pollution of land Other (please specify)
- Might enter drinking water sources Don't know
- Might contaminate food sources

Other (please specify)

6. Are you more concerned now than you were 1 year ago about microplastics in the environment?

(Please select only one answer)

- More concerned No change
- Less concerned Don't know

10. Which of the following health problems in humans have been linked to microplastics?

(Please select only one answer per statement)

	True	False	Don't know
Cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kidney disease	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lung irritation/ breathing problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stomach upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poisoning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Headaches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upsetting of the hormonal system (which is regulating bodily functions such as growth, sexual development and metabolism)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Answer true, false or don't know to the following statements:

(Please only select one response for each statement)

	True	False	Don't know
Marine organisms have been shown to consume microplastics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Microplastics have been found in human food sources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Microplastics have been proven to cause some types of cancer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. How often do you eat seafood (shellfish and fish)?

(Please select only one answer)

- | | |
|---|--|
| <input type="radio"/> Once a month | <input type="radio"/> 11 or more times a month |
| <input type="radio"/> 2 to 4 times a month (e.g. once a week or less) | <input type="radio"/> I do not eat seafood even though I do eat meat, chicken, etc. (e.g. I do not like seafood, I am allergic to seafood, etc) |
| <input type="radio"/> 5 to 8 times a month (e.g. once to twice a week) | <input type="radio"/> I am vegan/vegetarian and therefore do not eat seafood |
| <input type="radio"/> 9 to 10 times a month (.g. twice a week, occasionally three times a week) | <input type="radio"/> I do not eat seafood for environmental reasons even though I do eat other animal products (i.e I am NOT a vegan or vegetarian) |

18. In what country do you live?

19. How long have you lived in that country?

(Please select only one answer)

- (Almost) all my life Less than 2 years
 2 years or longer

20. What is your gender?

(Please select only one answer)

- Female Prefer not to say
 Male

21. What is your highest level of education?

(Please select only one answer)

- No qualifications Master degree
 Secondary school or equivalent Doctorate degree
 College (16-18 years) or equivalent Prefer not to say
 Trade/technical/vocational training Other (please specify)
 Undergraduate degree or equivalent

Other (please specify)

22. How old are you?

(Please select only one answer)

- 18-24 years 65 years or above
 25-44 years Prefer not to say
 45-64 years

23. Do you currently work or have you ever worked on the topic of plastics as an environmental contaminant (e.g. microplastics, plastic pollution, marine debris, effects of microplastics on organisms, etc.)?

Or/and

Are you or have you been involved in a research project on this topic (e.g. BSc or MSc final year project, PhD project etc.)?

- Yes No

S.2 Percentage distribution of results by the demographics of sex, education and age

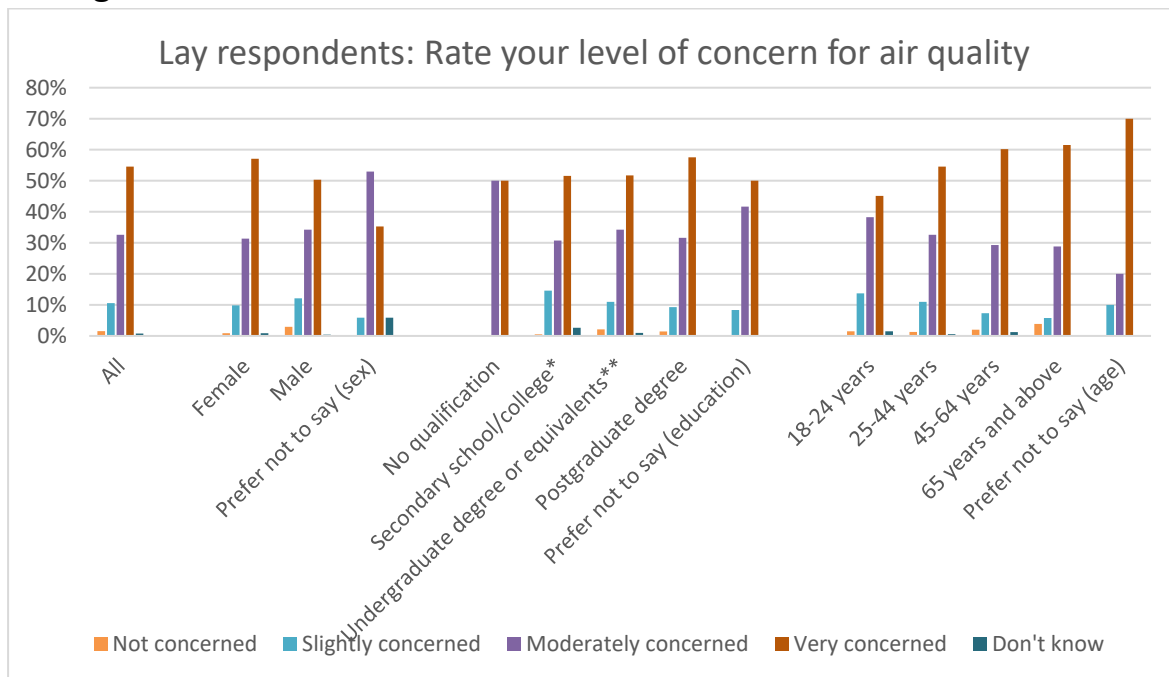


Figure S1 – Percentage distribution of responses of lay respondents by demographics (sex, education and age) for air quality, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

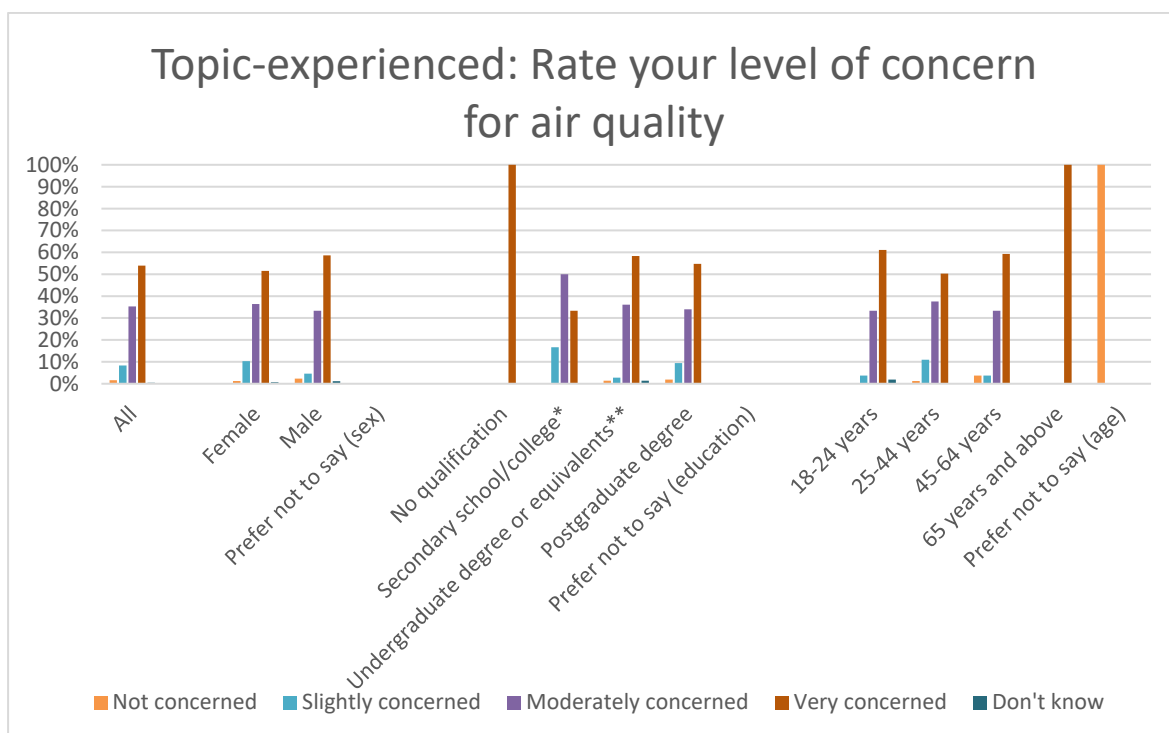


Figure S2 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for air quality, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

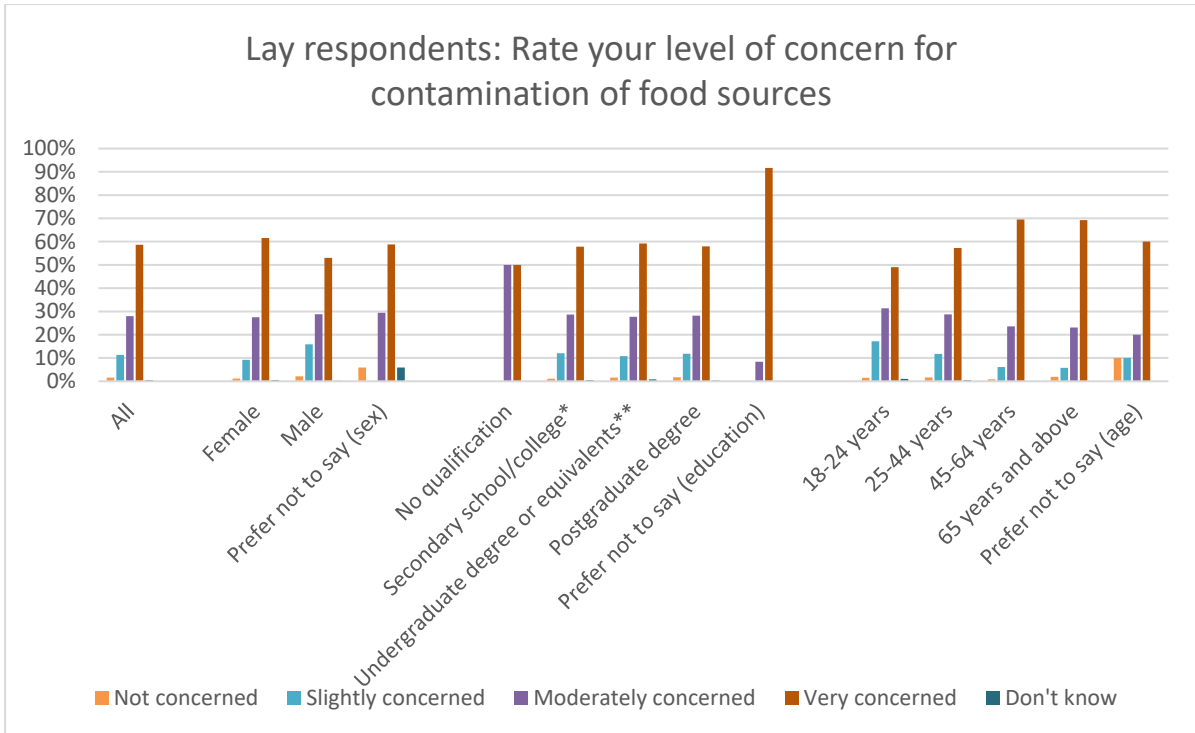


Figure S3 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for contamination of food sources, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

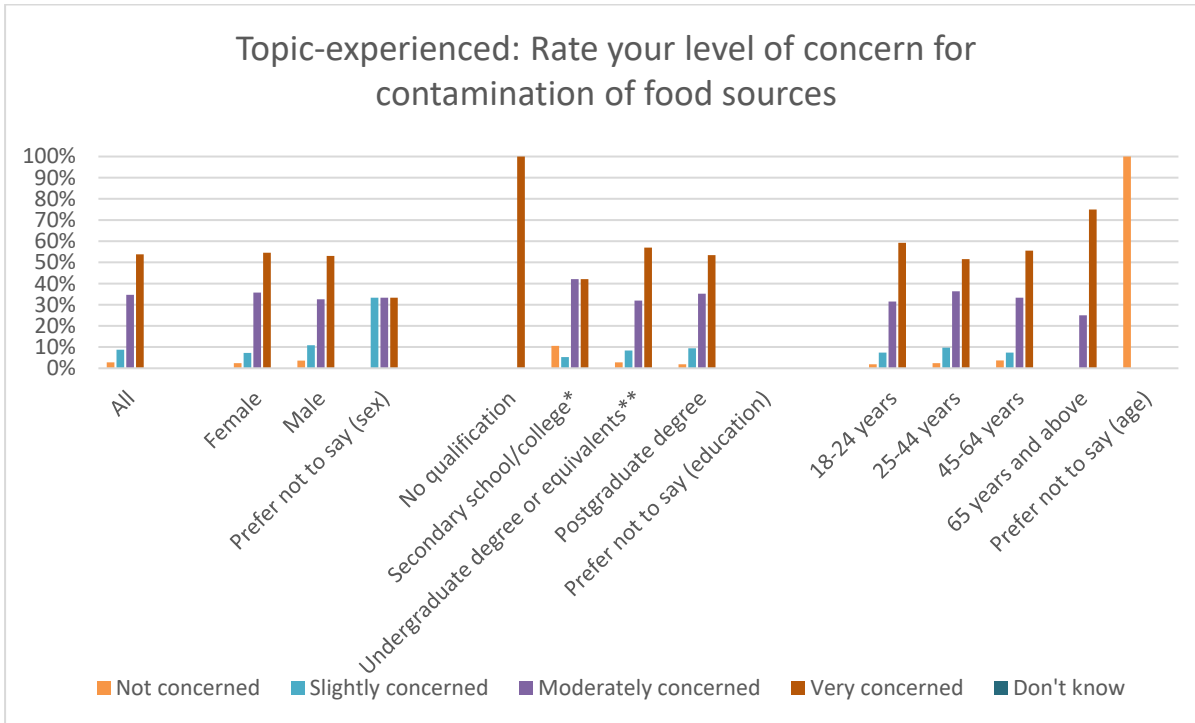


Figure S4 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for contamination of food sources, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

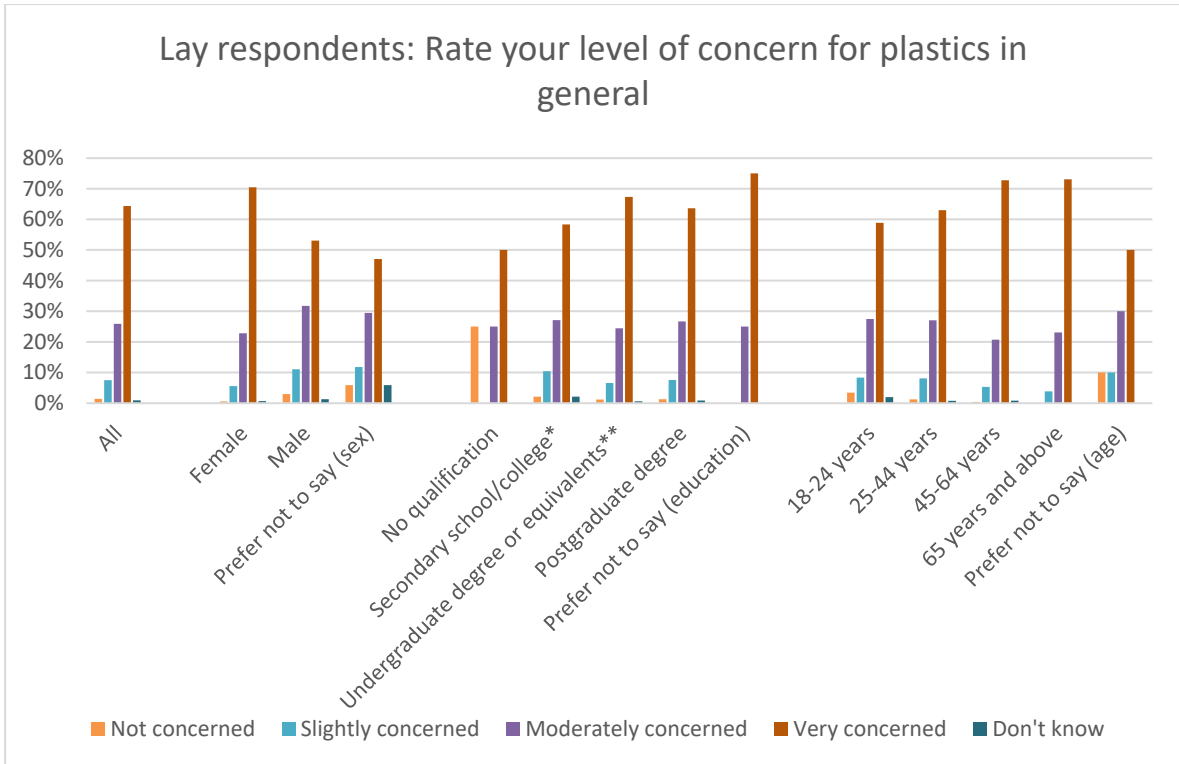


Figure S5 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for plastics in general, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

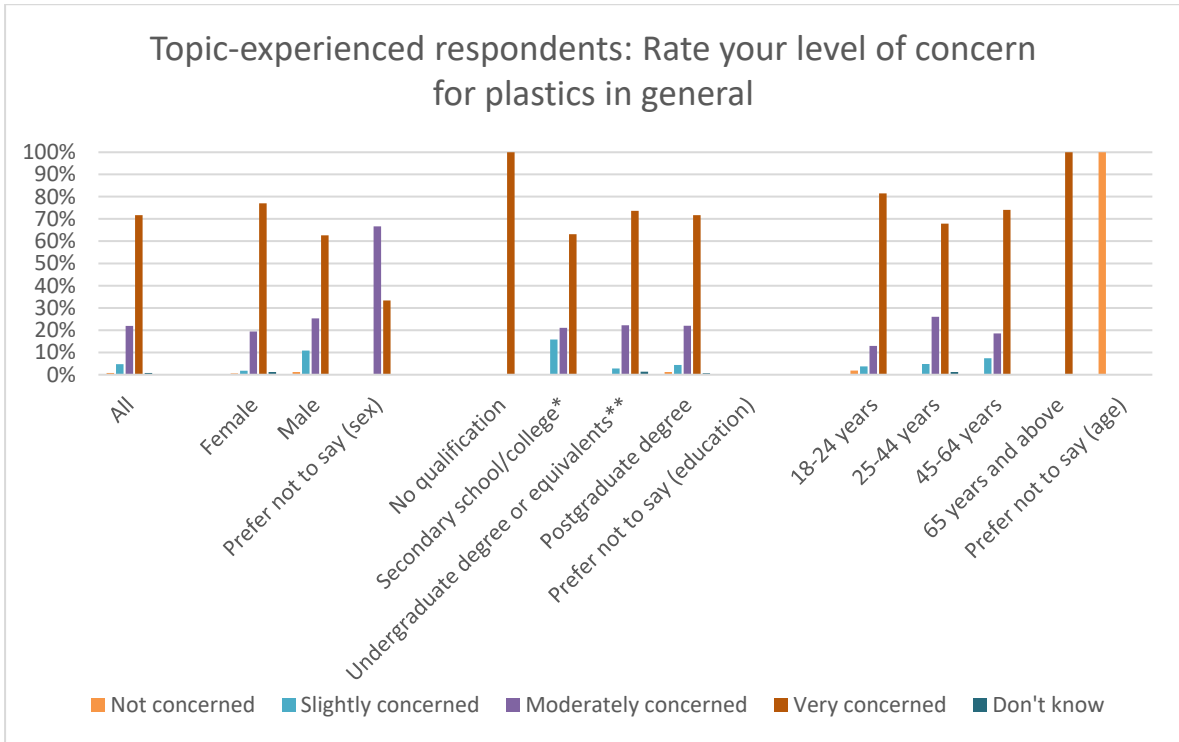


Figure S6 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for plastics in general, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

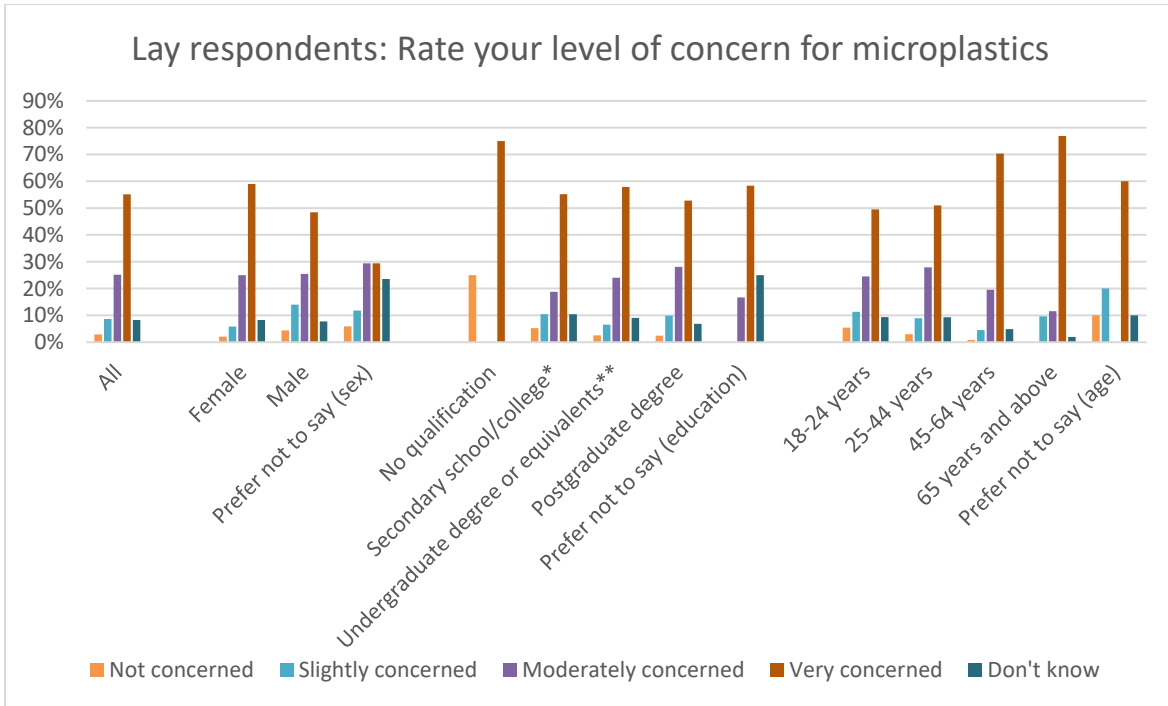


Figure S7 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for microplastics ,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

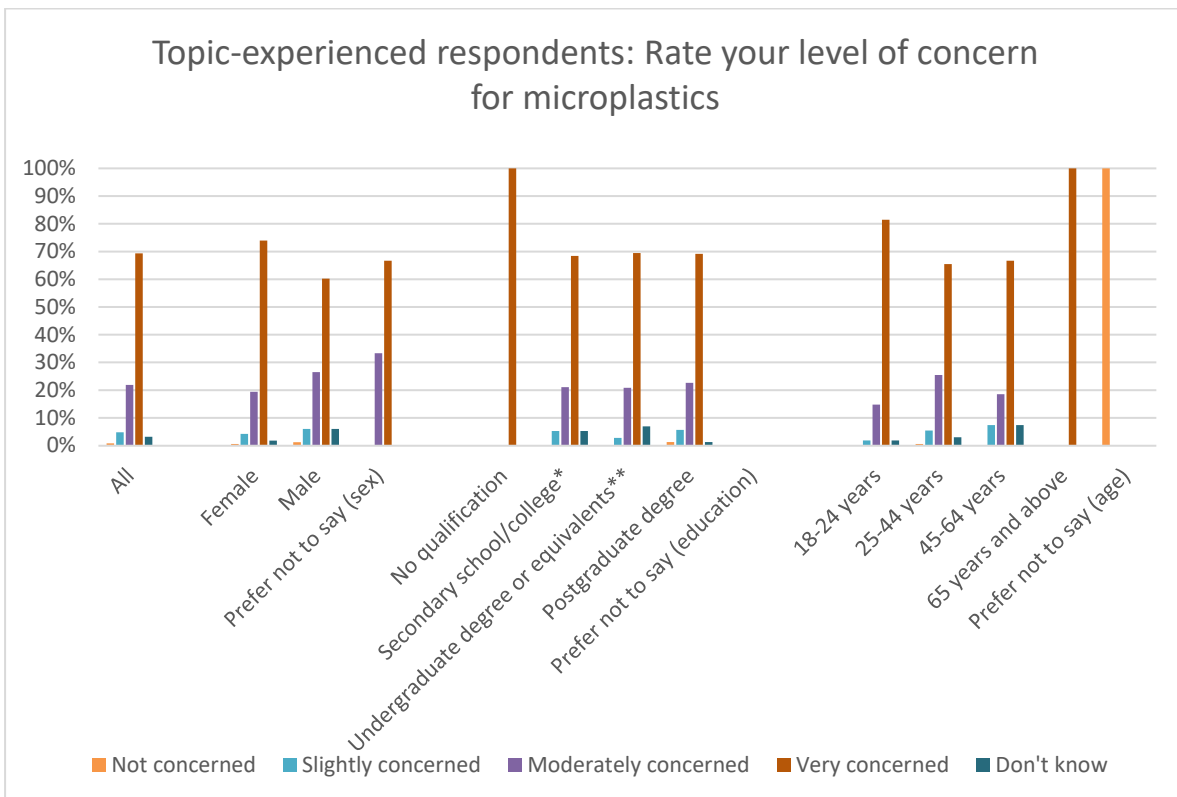


Figure S8 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for microplastics,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

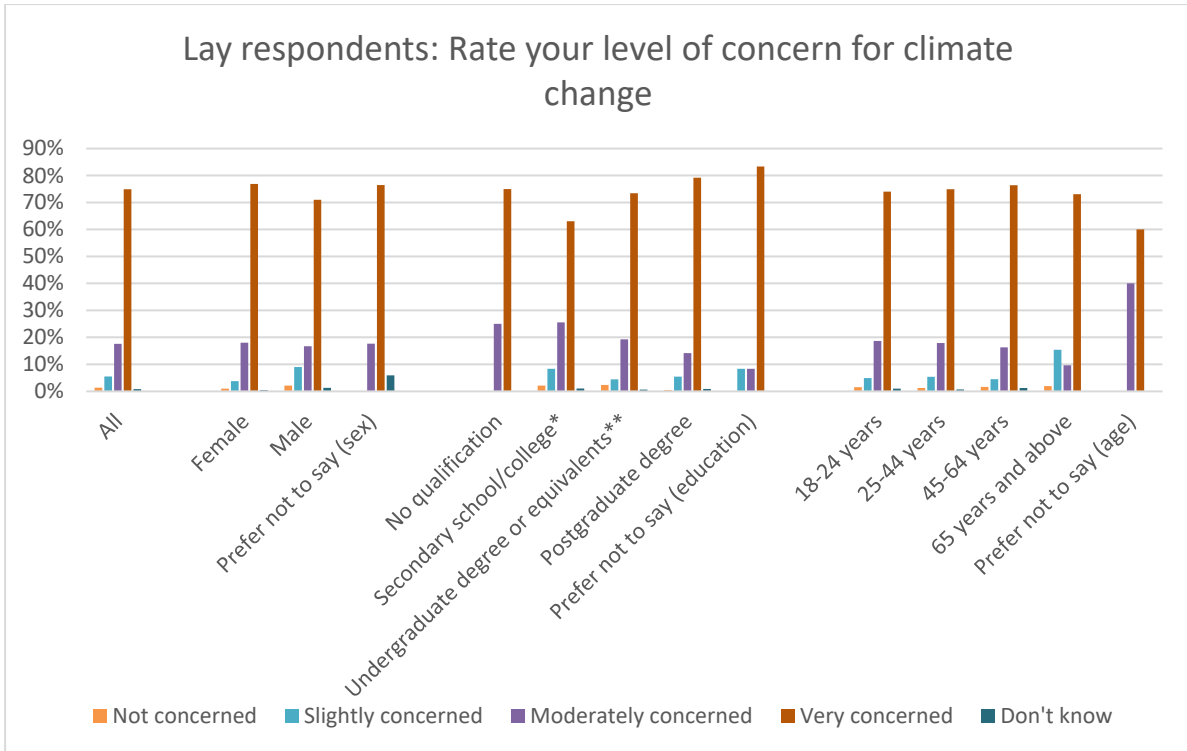


Figure S9 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for climate change, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

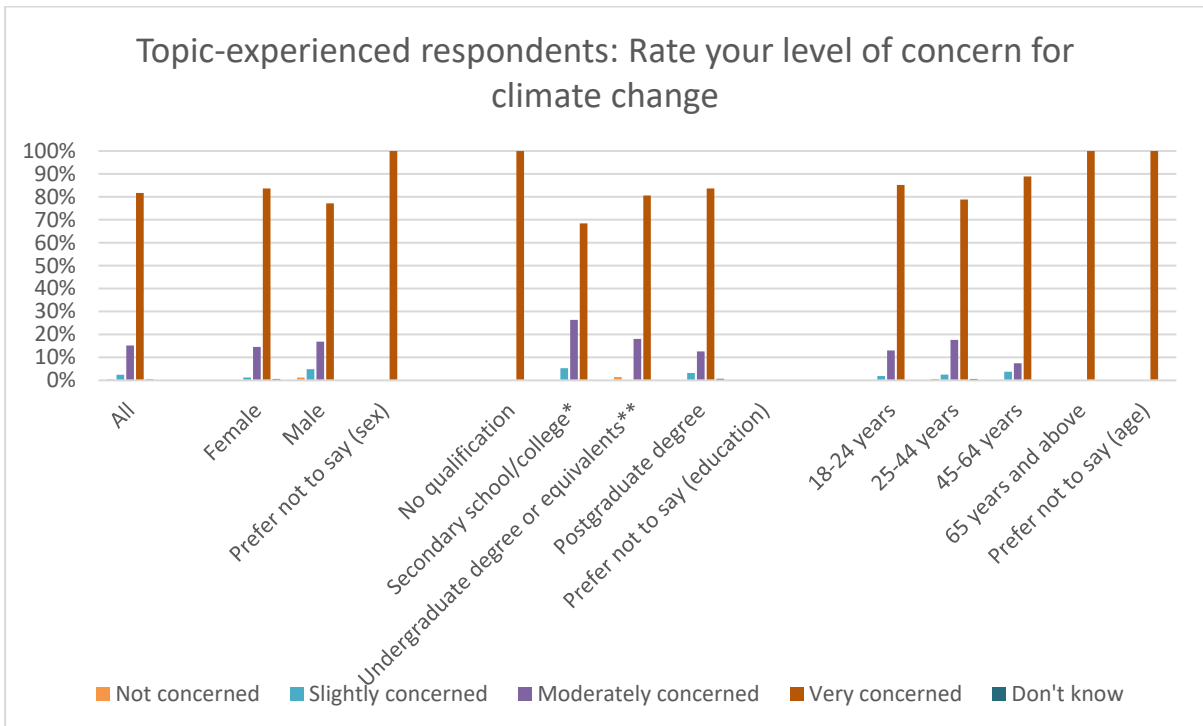


Figure S10 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for climate change, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

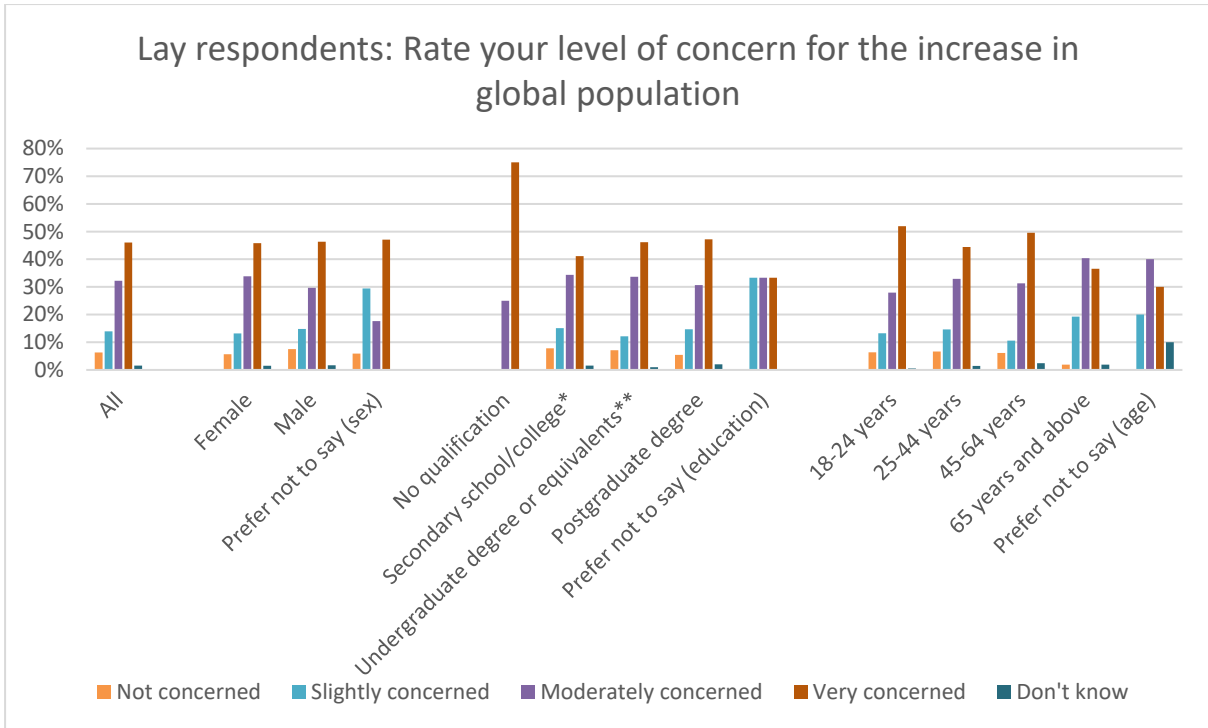


Figure S11 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for increase in global population, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

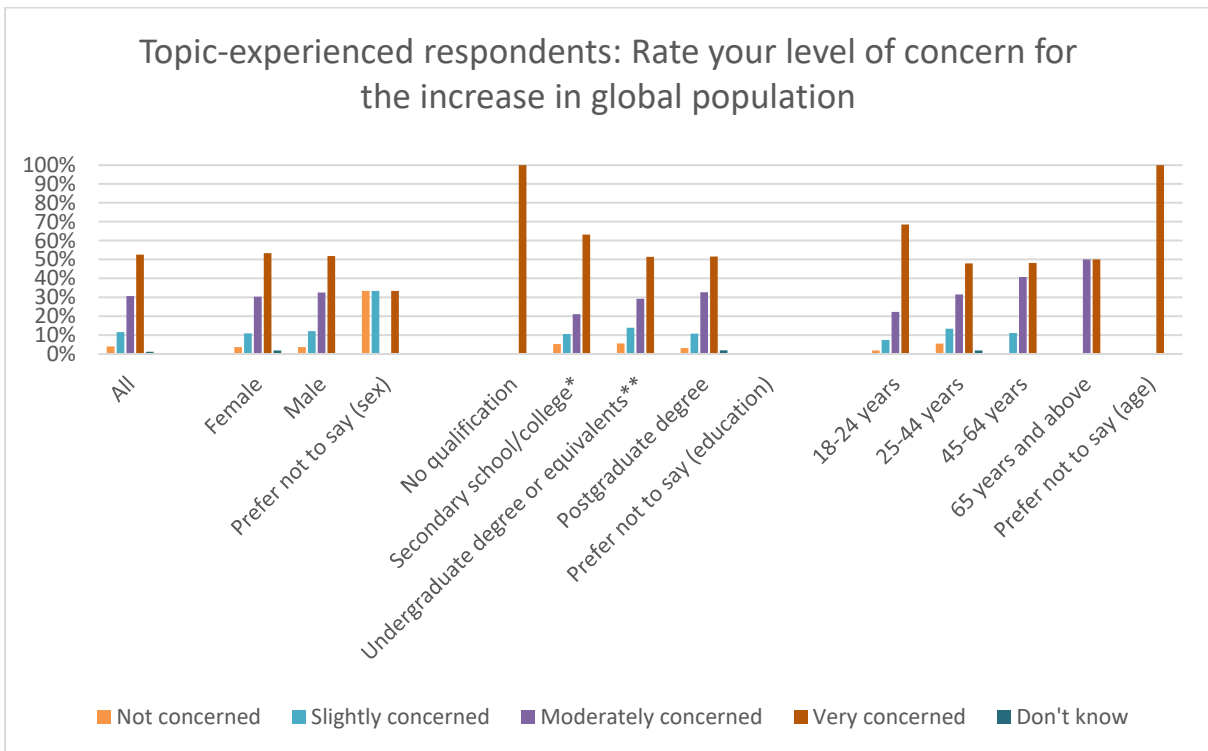


Figure S12 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for increase in global population, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

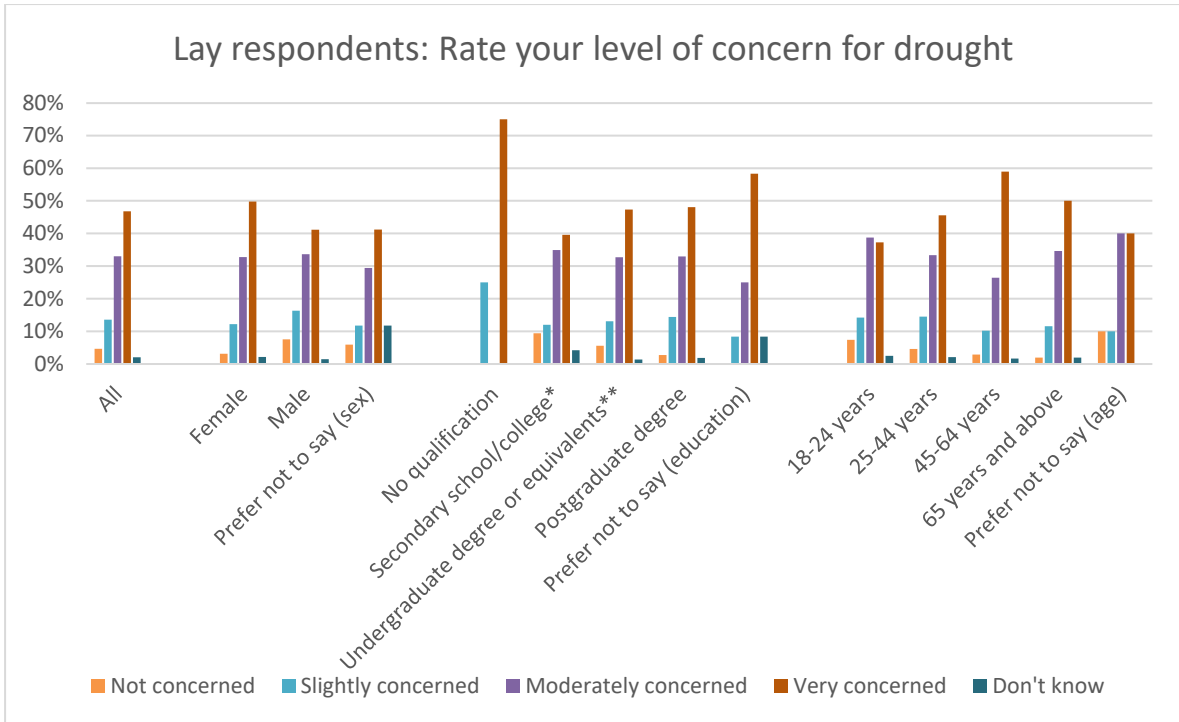


Figure S13 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for drought, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

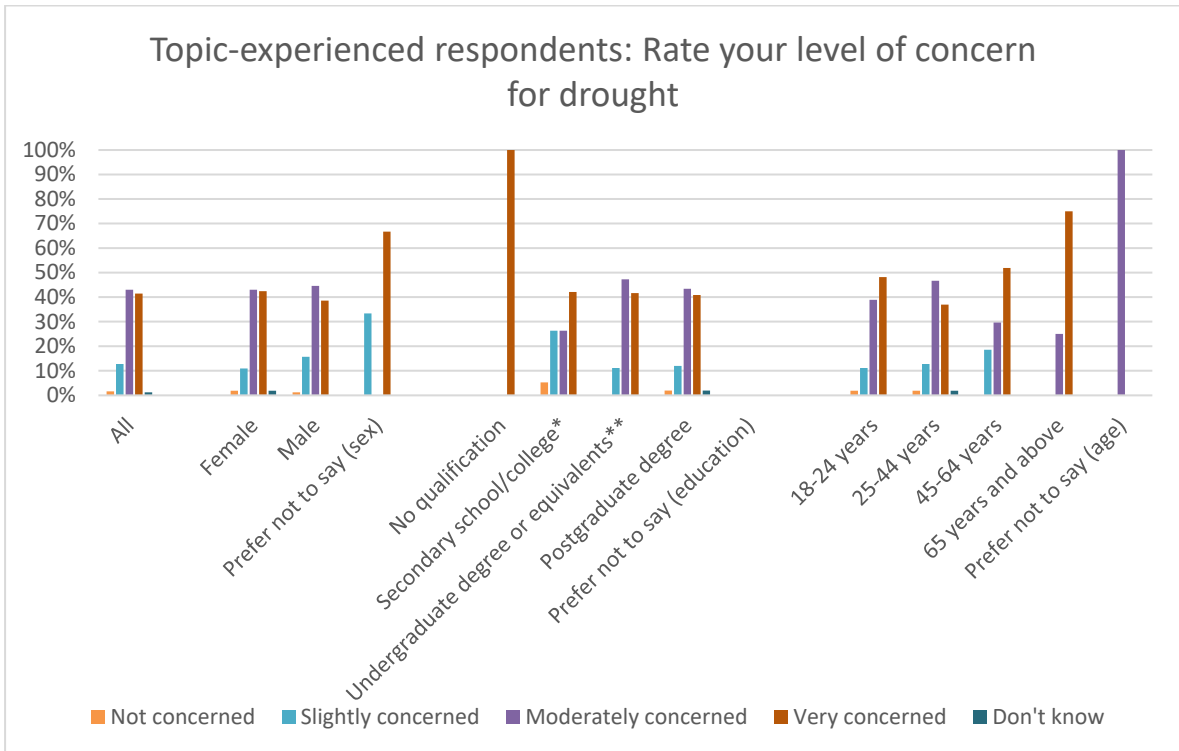


Figure S14 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for drought, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

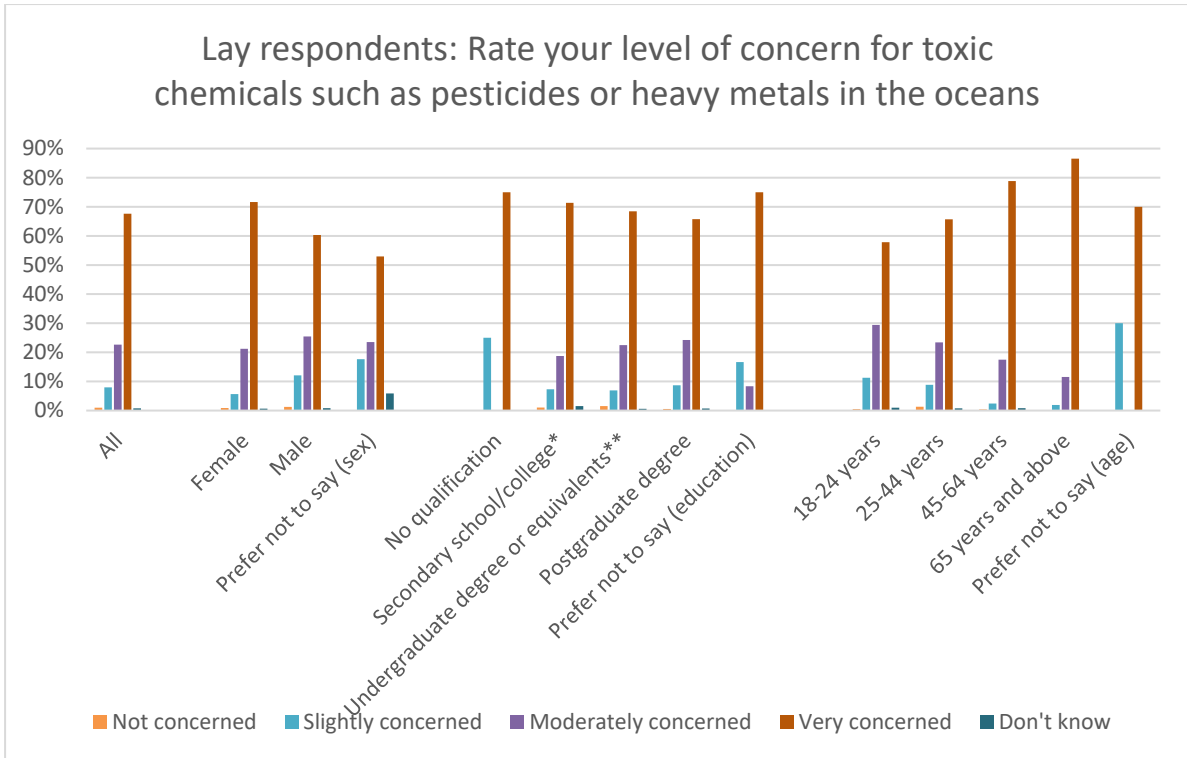


Figure S15 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for toxic chemicals,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

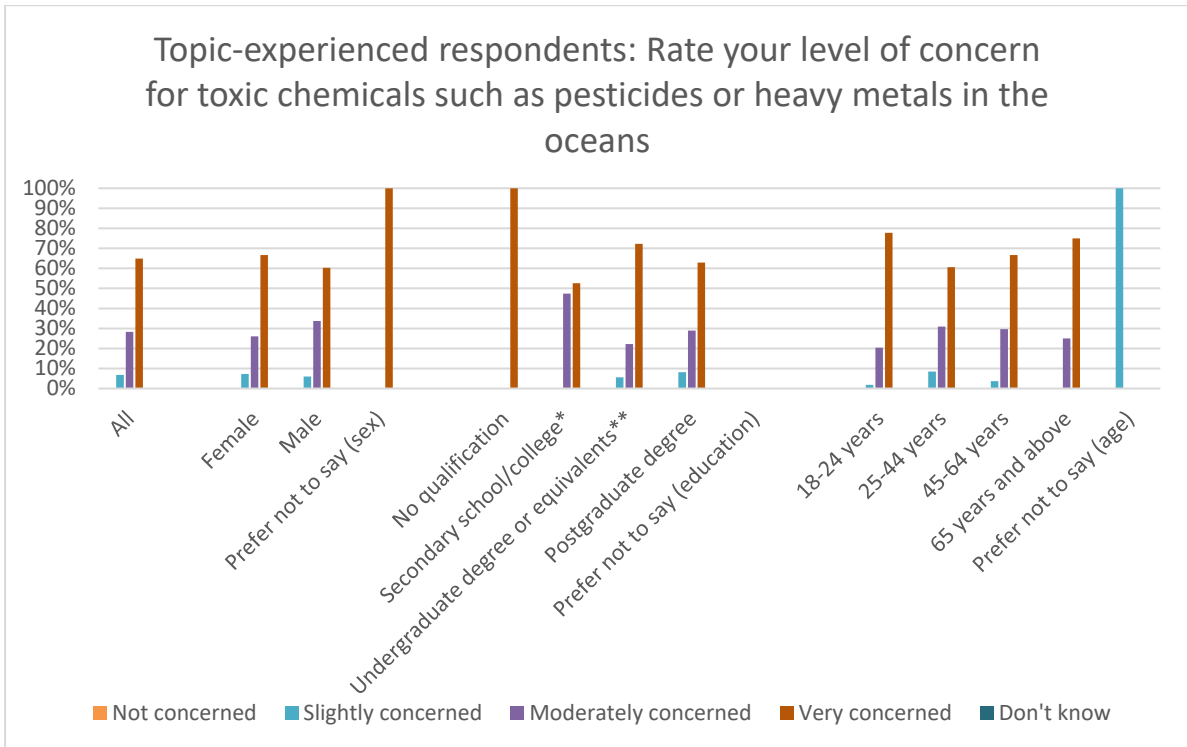


Figure S16 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for toxic chemicals,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

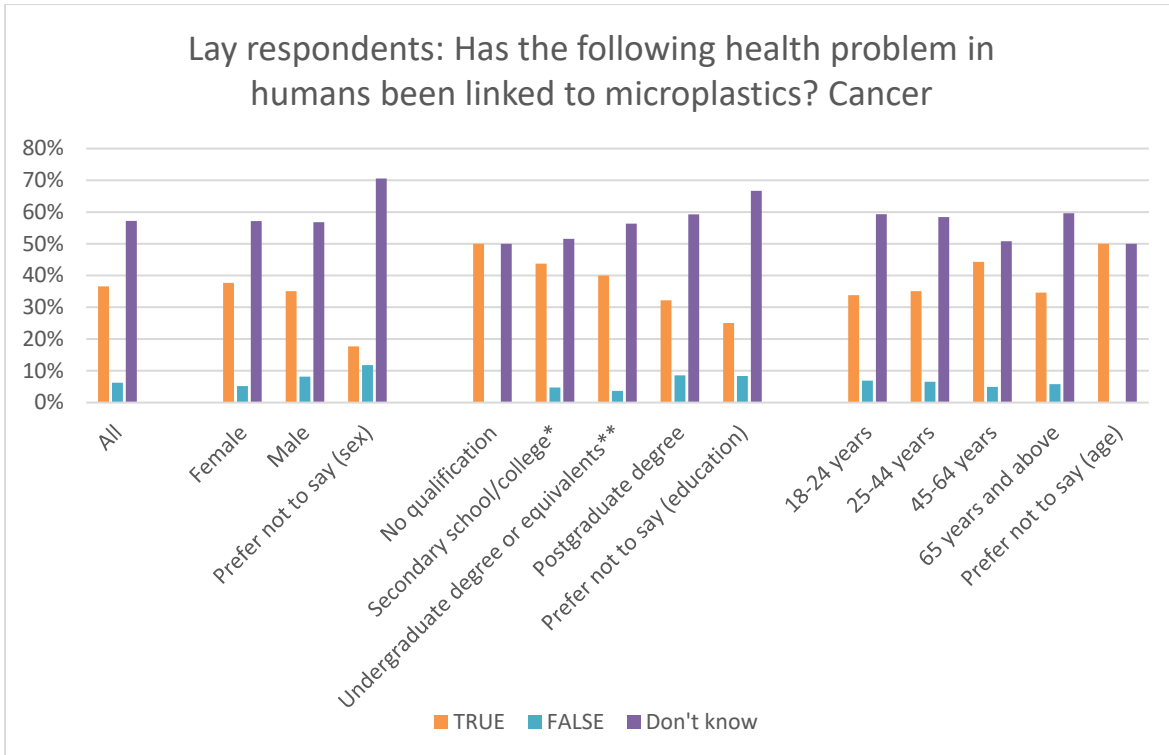


Figure S17 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for microplastics-cancer link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

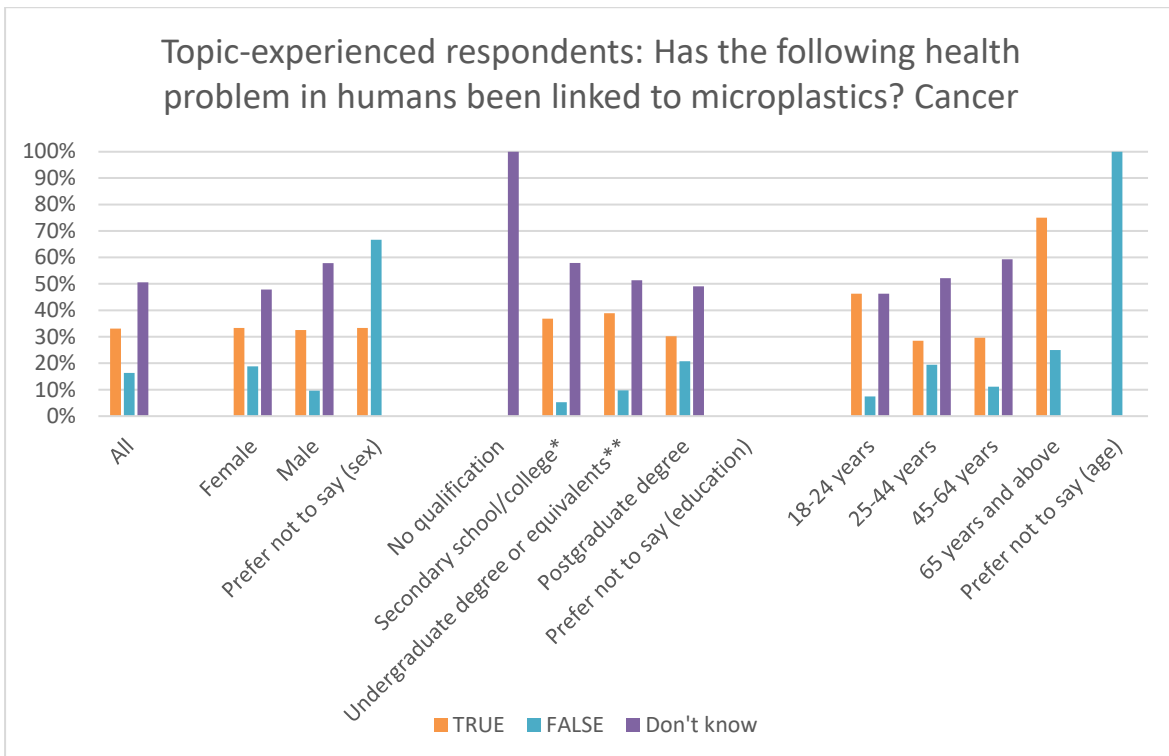


Figure S18 -- Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for microplastics-cancer link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

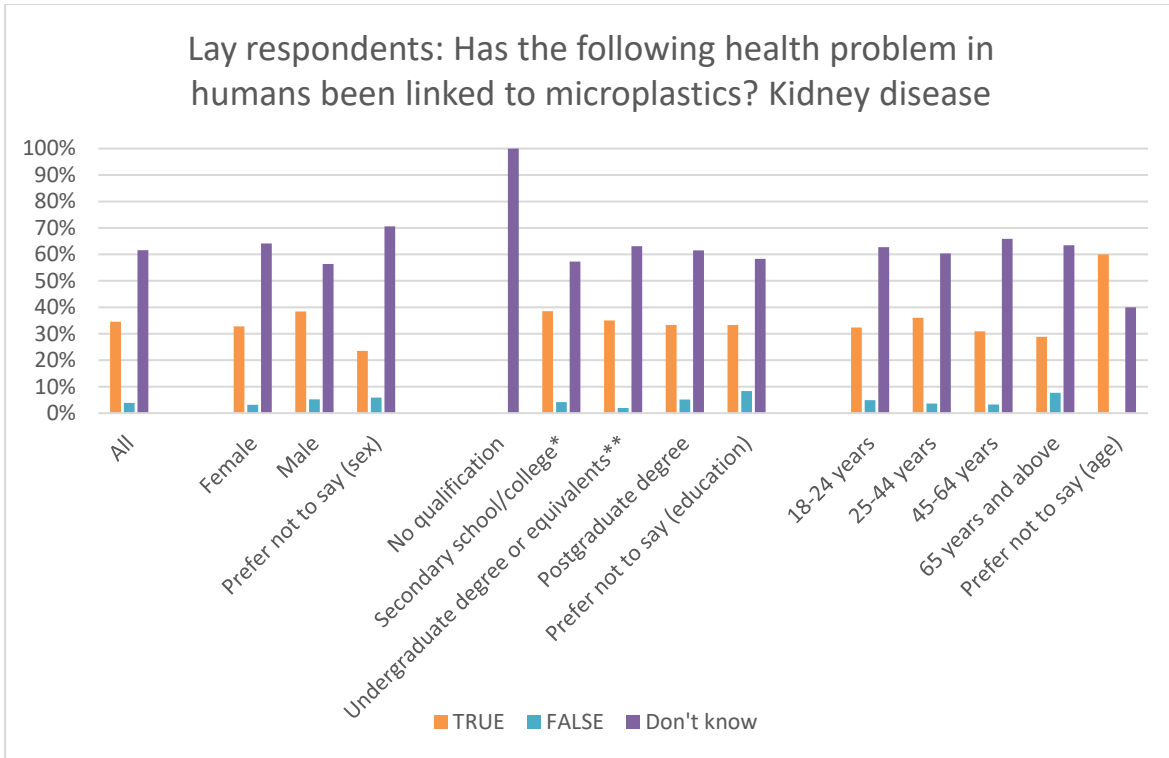


Figure S19 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for microplastics-kidney disease link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

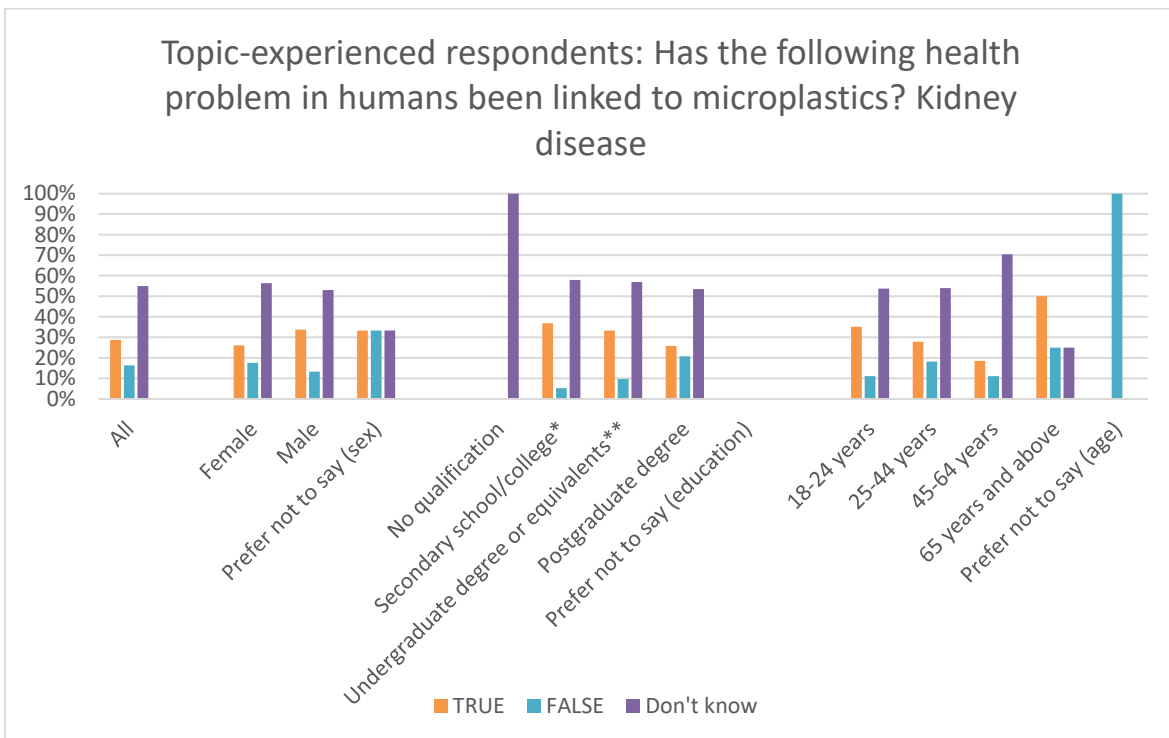


Figure S20 - - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for microplastics-kidney disease link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

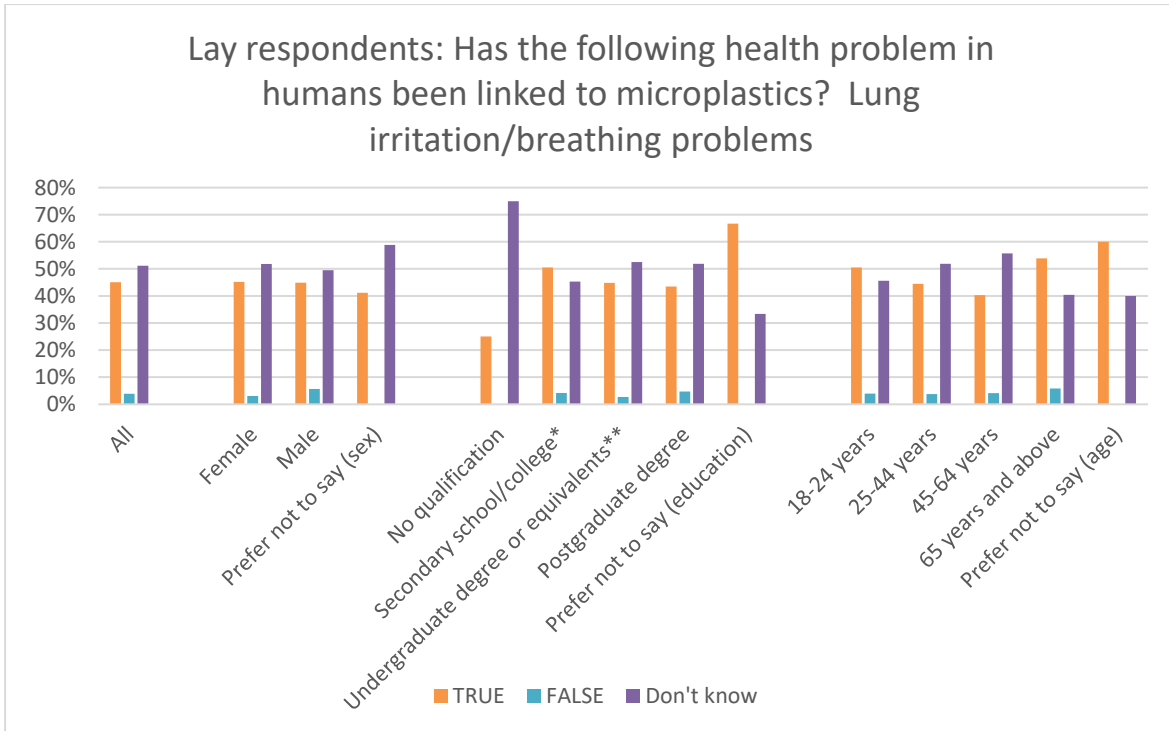


Figure S21 -- Percentage distribution of responses of lay respondents by demographics (sex, education and age) for microplastics-lung irritation/breathing problems link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

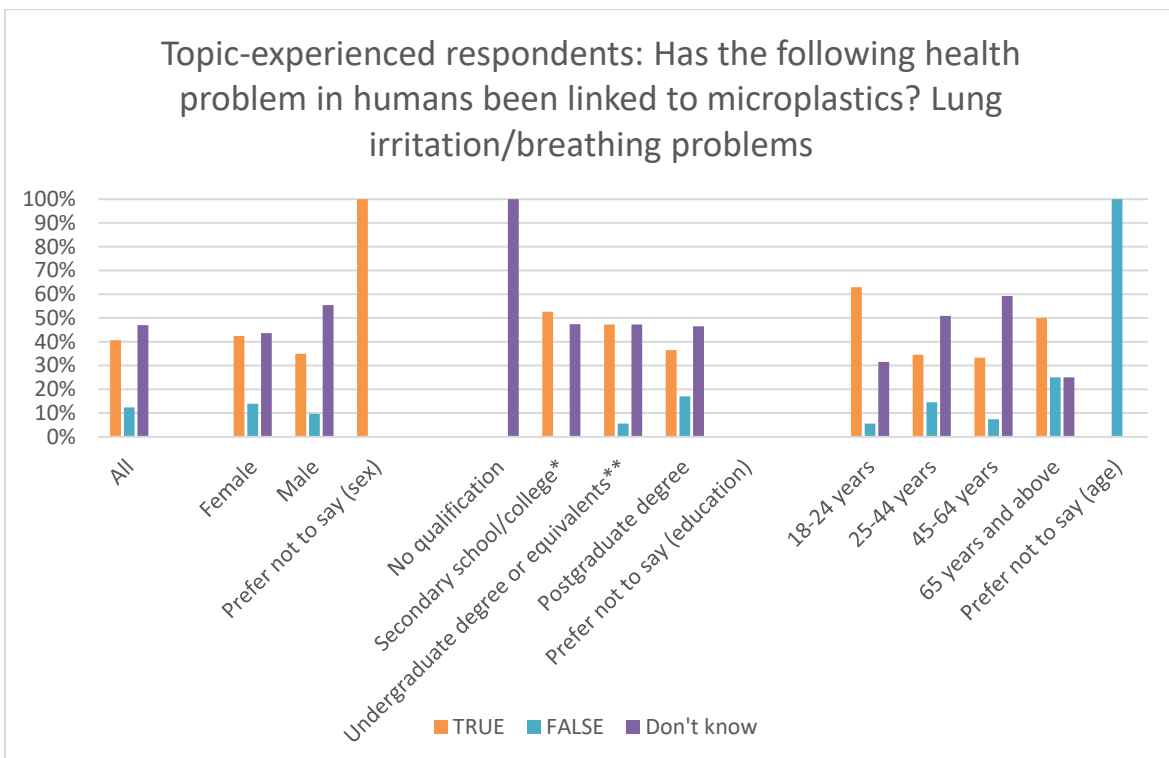


Figure S22 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for microplastics-lung irritation/breathing problems link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

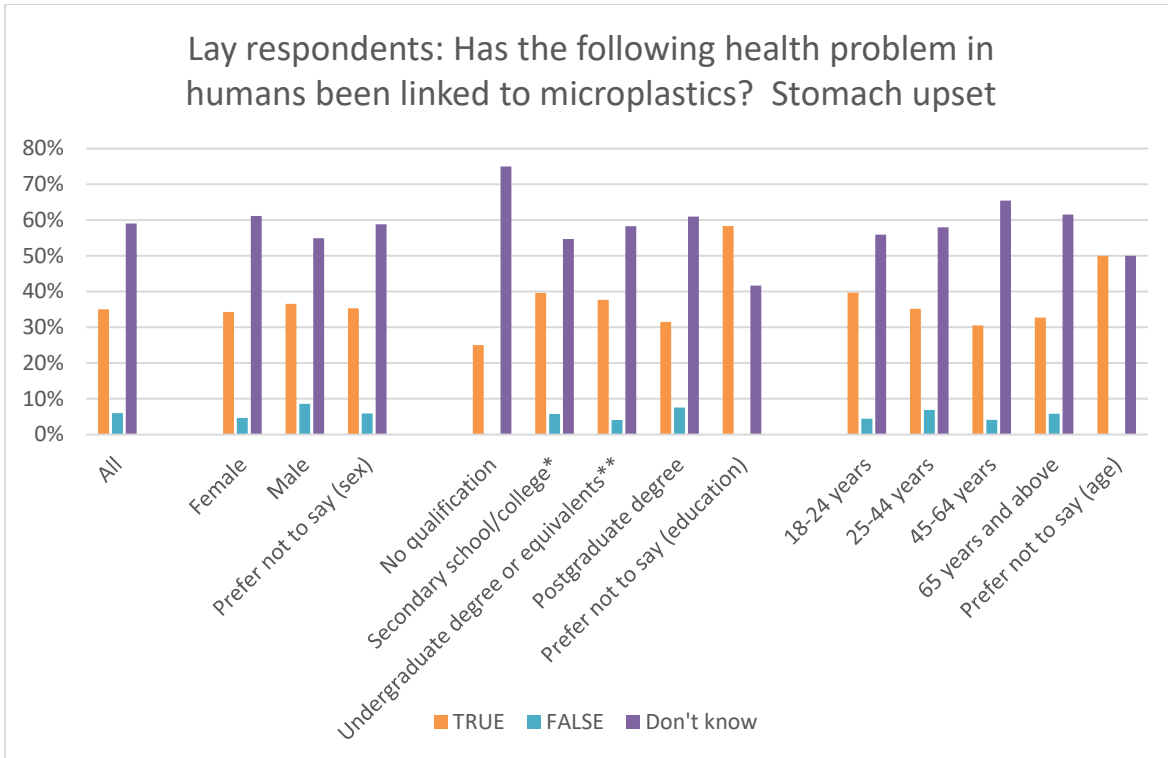


Figure S23 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for microplastics-stomach upset link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

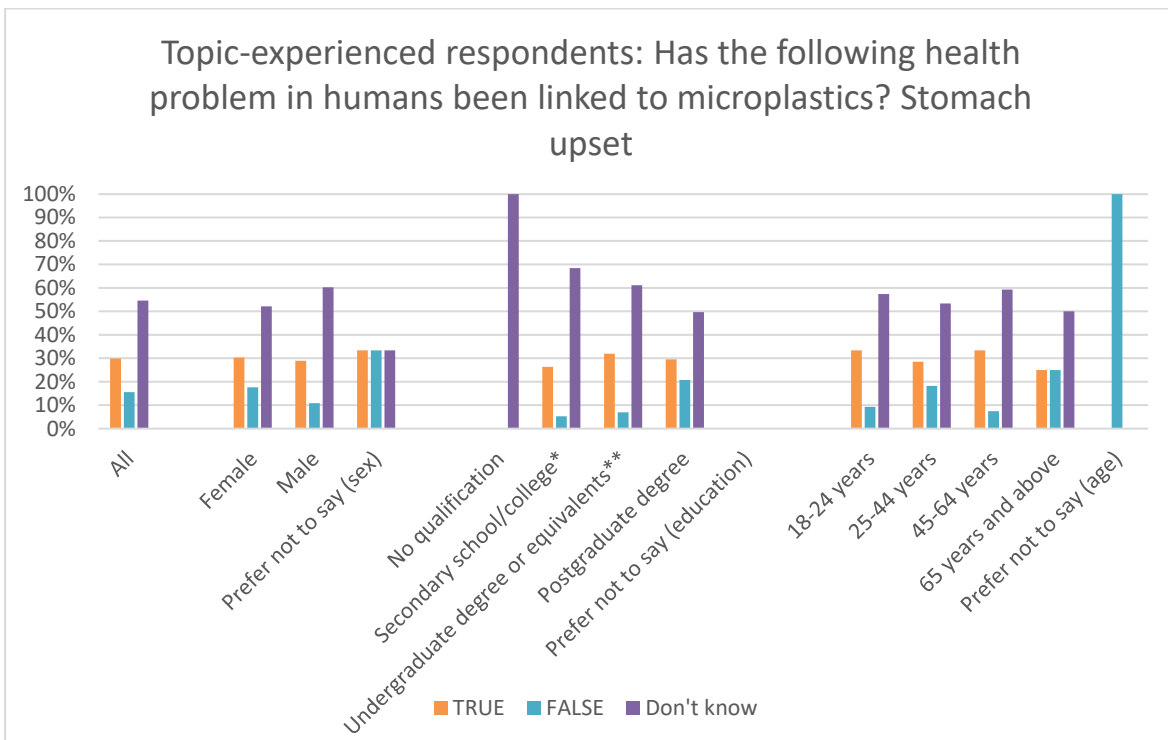


Figure S24 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for microplastics-stomach upset link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

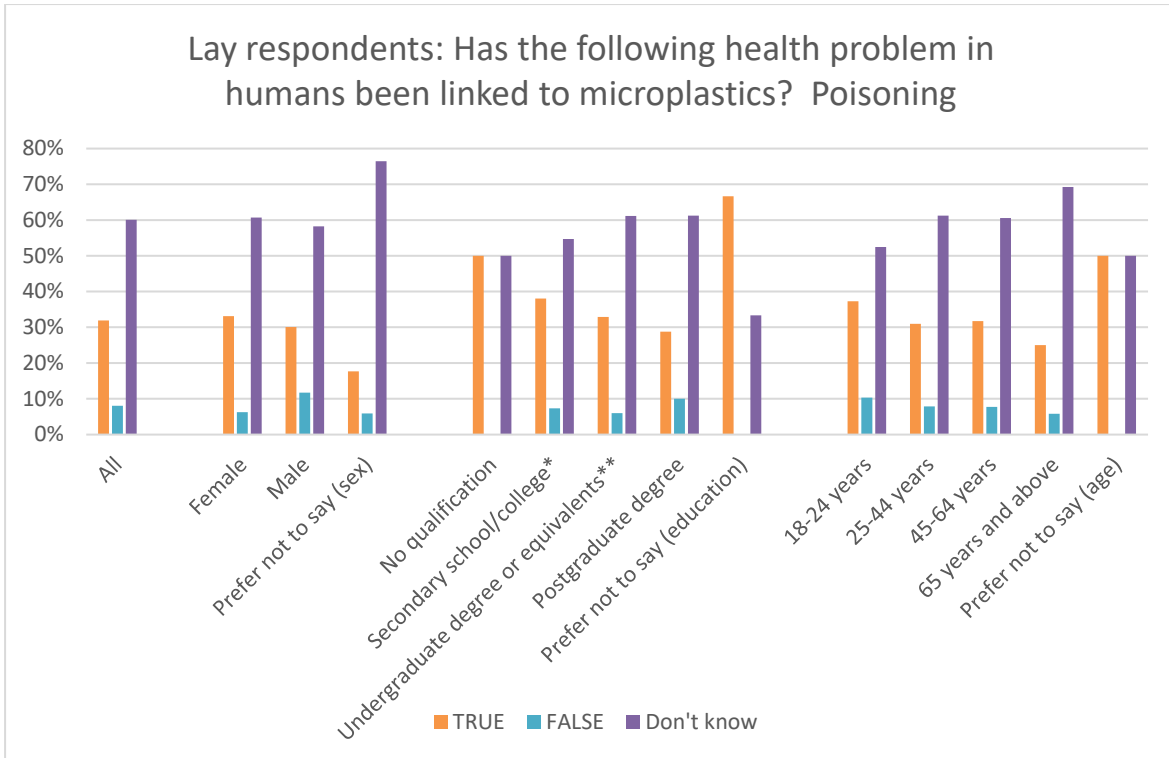


Figure S25 -- Percentage distribution of responses of lay respondents by demographics (sex, education and age) for microplastics-poisoning link, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

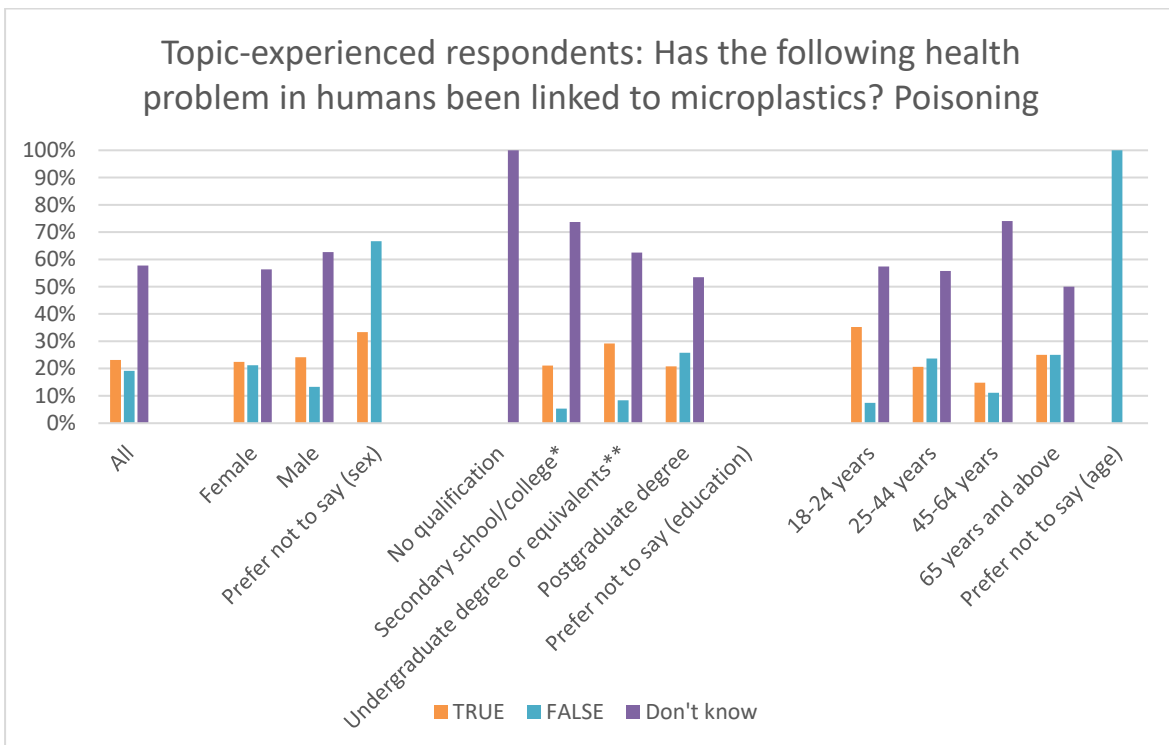


Figure S26 --- Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for microplastics-poisoning link, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

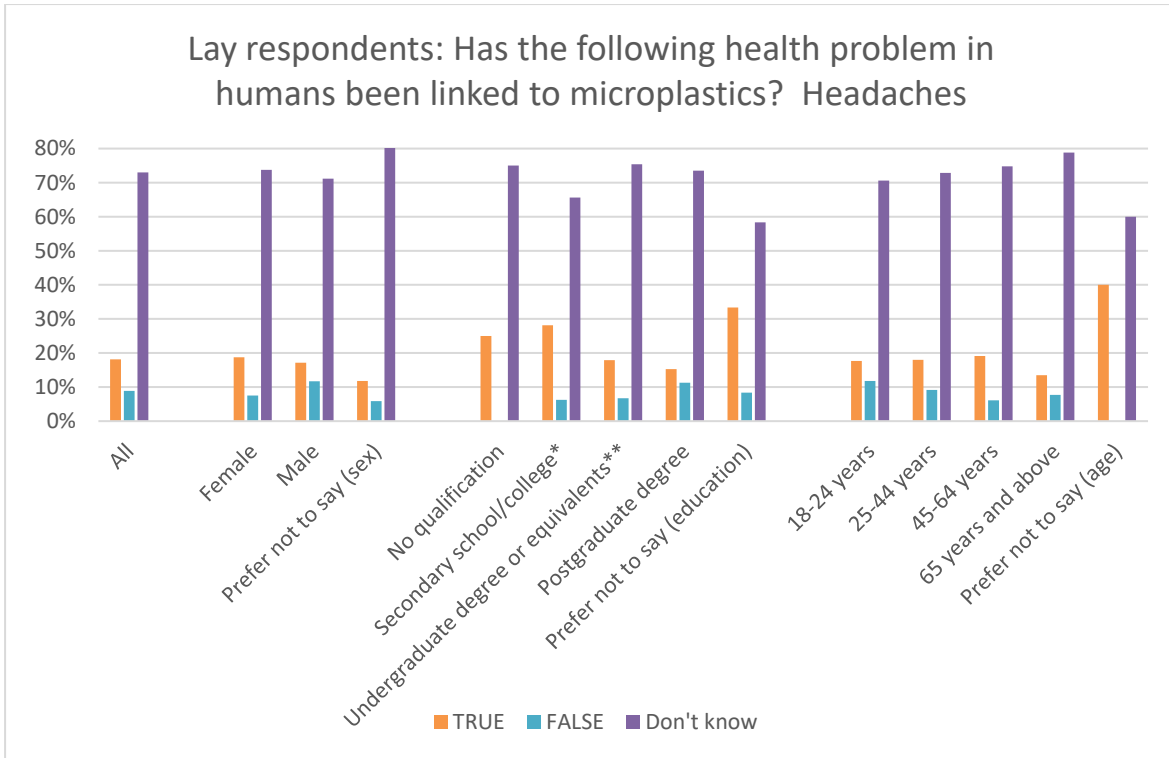


Figure S27 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for microplastics-headaches link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

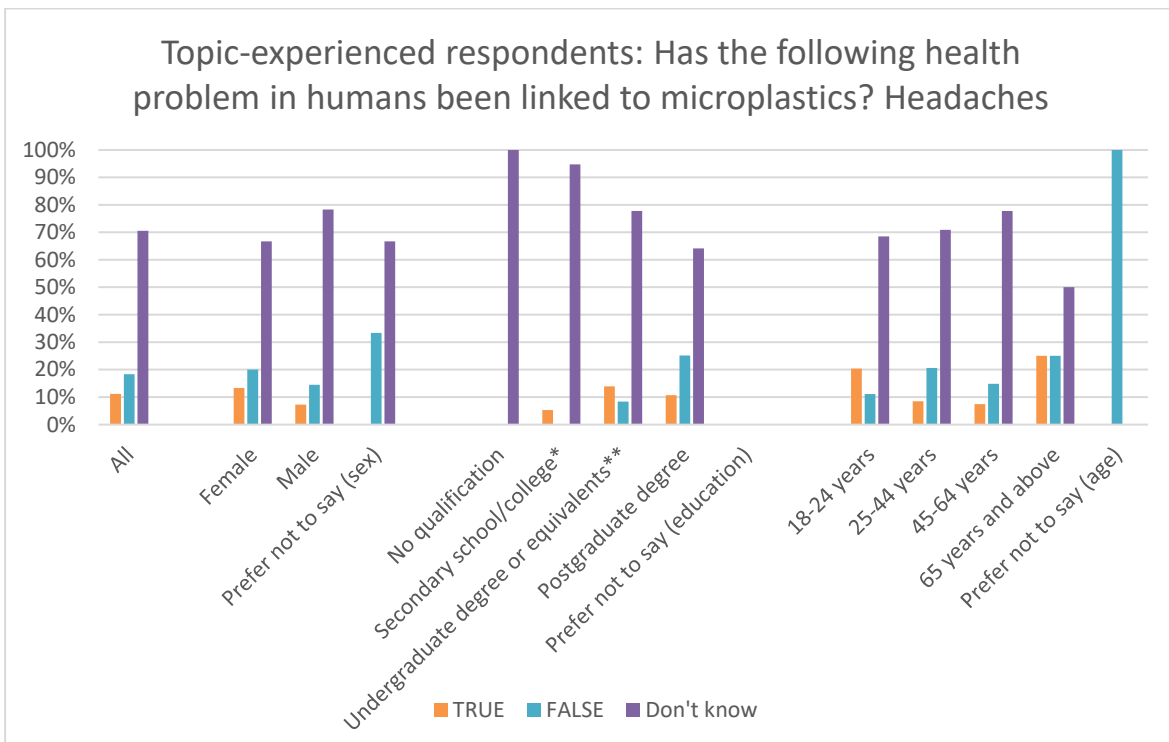


Figure S28 - Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for microplastics-headaches link,* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

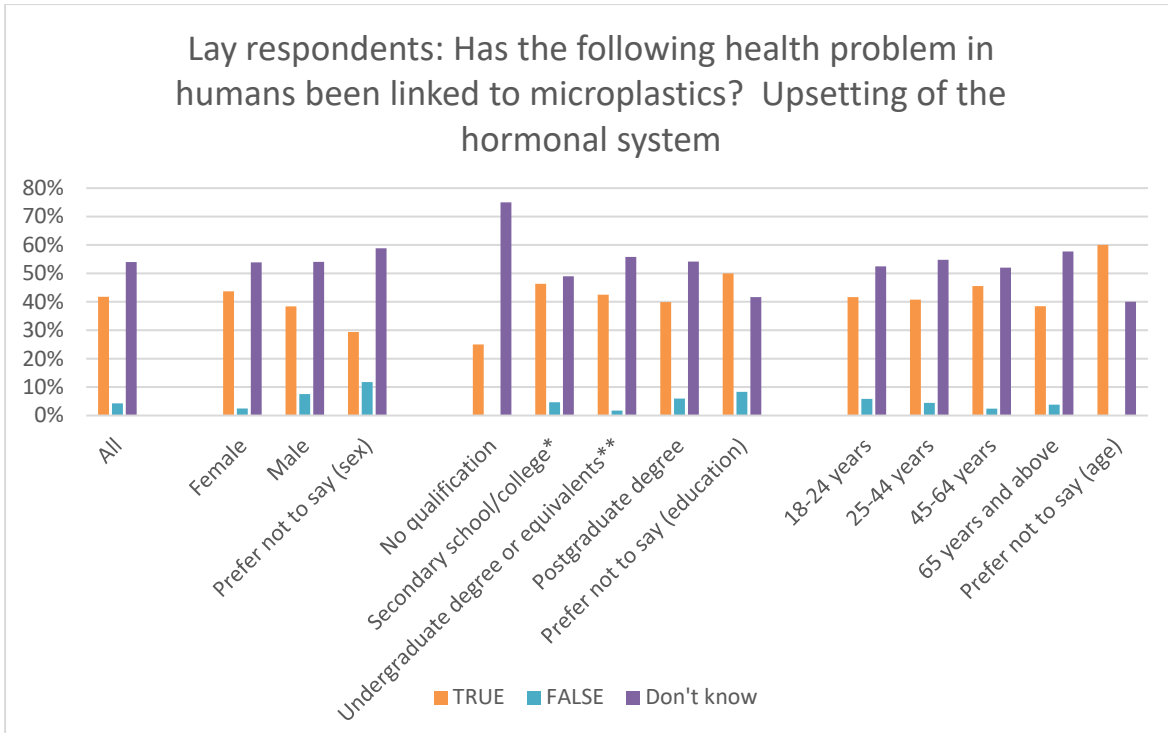


Figure S29 - Percentage distribution of responses of lay respondents by demographics (sex, education and age) for microplastics-upsetting of the hormonal system link, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

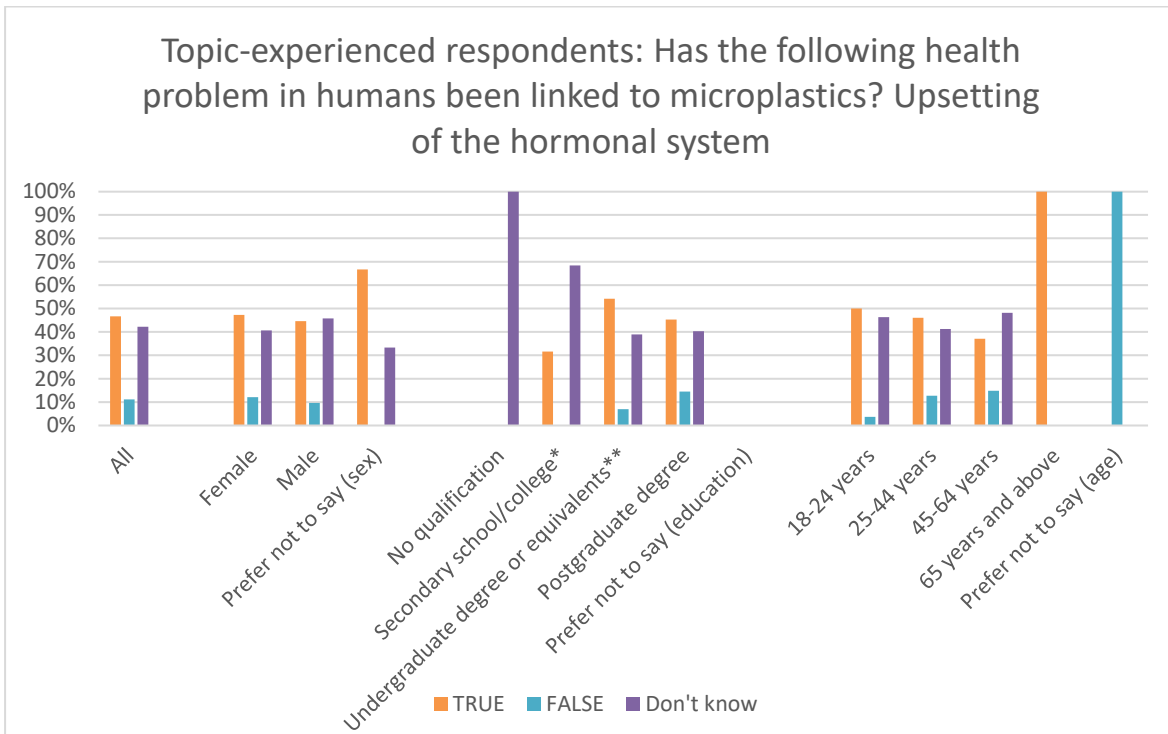


Figure S30 -- Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for microplastics-upsetting of the hormonal system link, * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

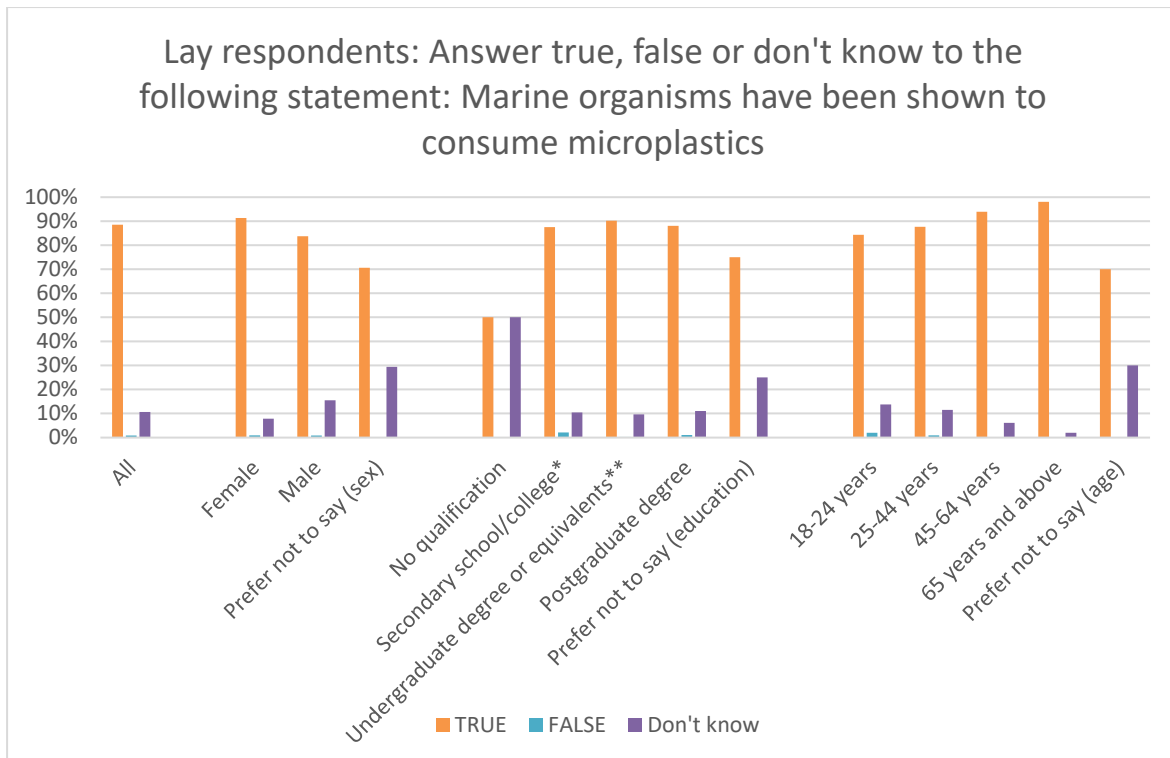


Figure S31 -- Percentage distribution of responses of lay respondents by demographics (sex, education and age) for 'marine organisms have been shown to consume microplastics',* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

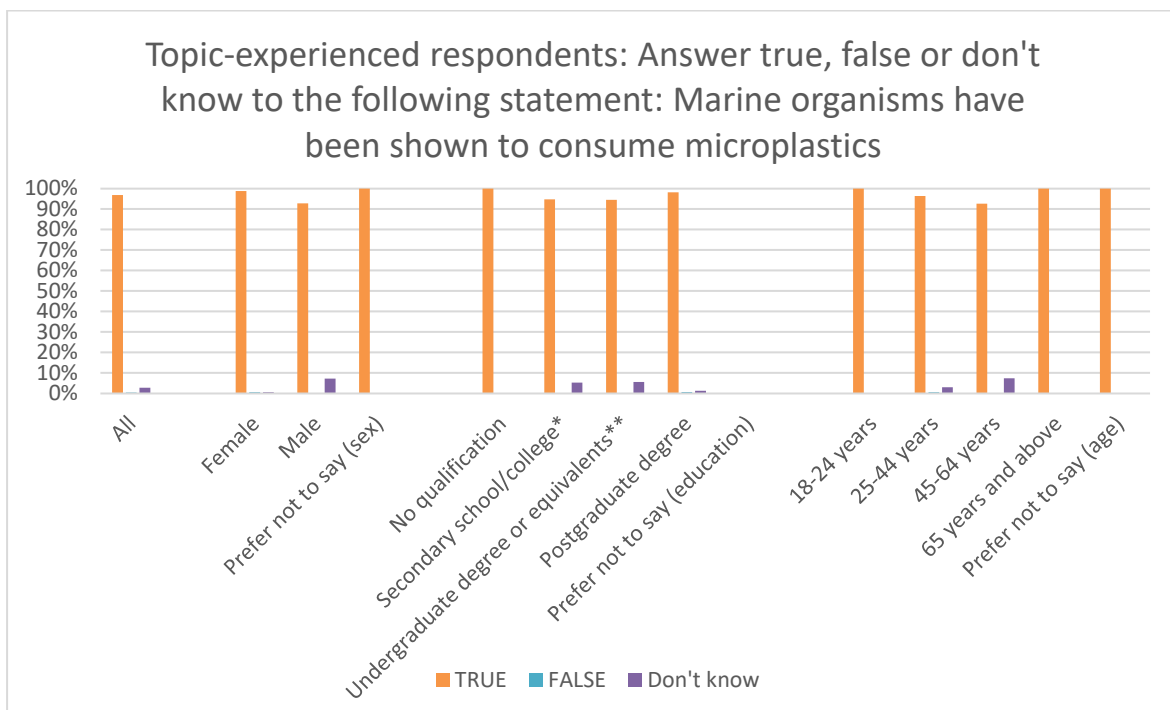


Figure S32 -- Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for 'marine organisms have been shown to consume microplastics',* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

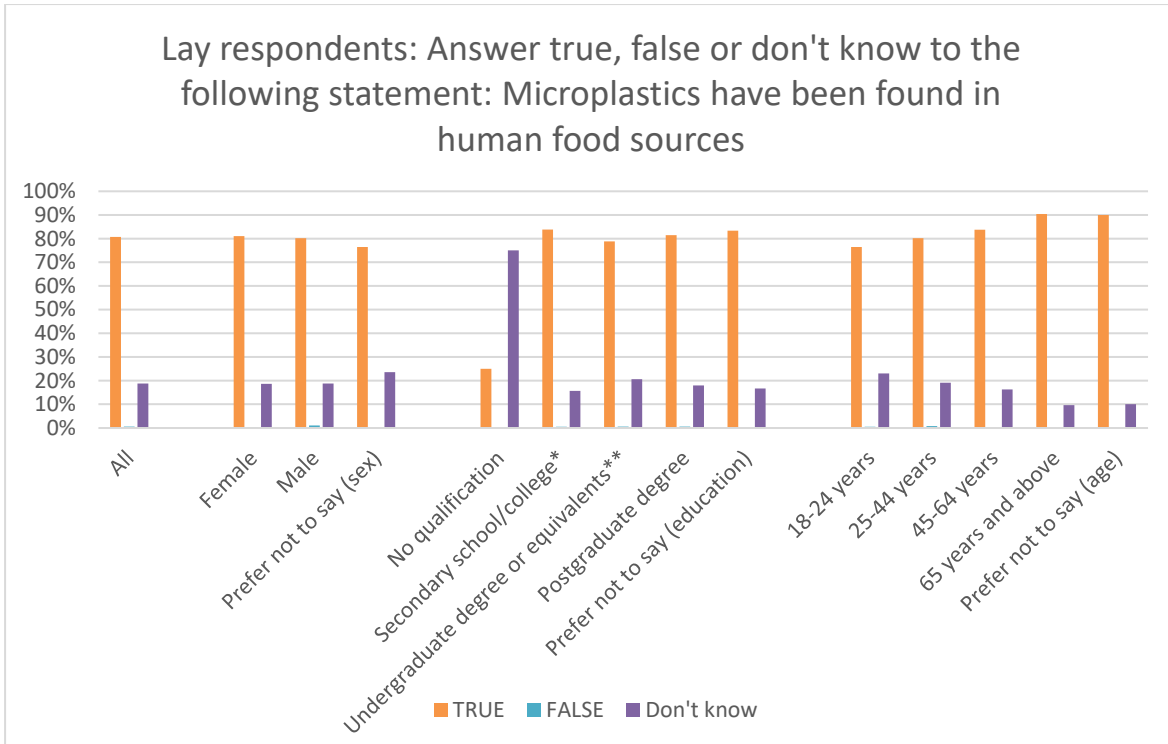


Figure S33 -- Percentage distribution of responses of lay respondents by demographics (sex, education and age) for 'microplastics have been found in human food sources',* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

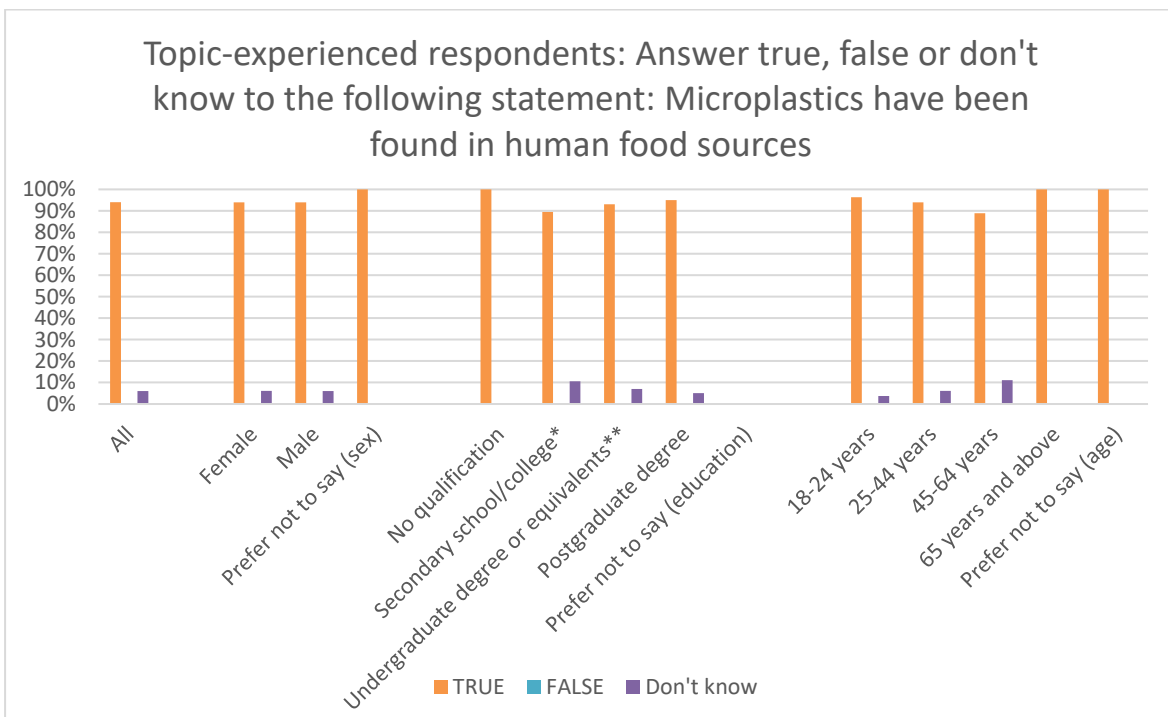


Figure S34 -- Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for 'microplastics have been found in human food sources',* (16-18 years) and equivalents, ** Including trade/technical/vocational training.

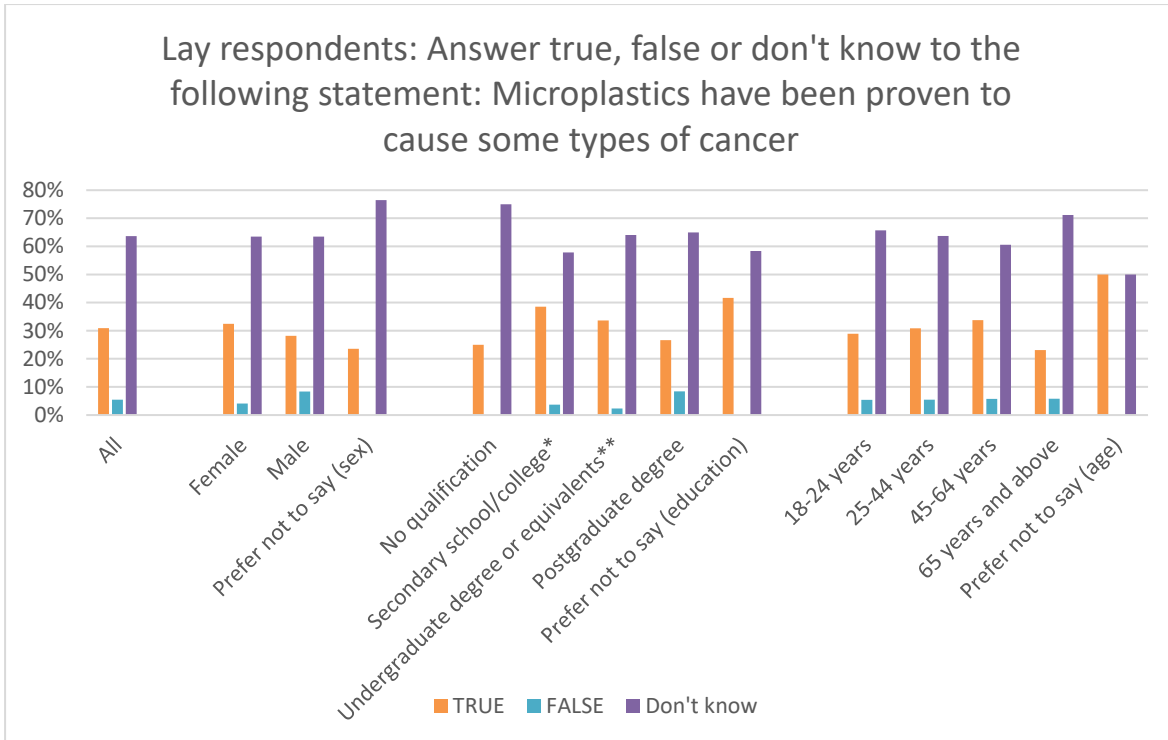


Figure S35 -- Percentage distribution of responses of lay respondents by demographics (sex, education and age) for 'microplastics have been proven to cause some types of cancer', * (16-18 years) and equivalents, ** Including trade/technical/vocational training.

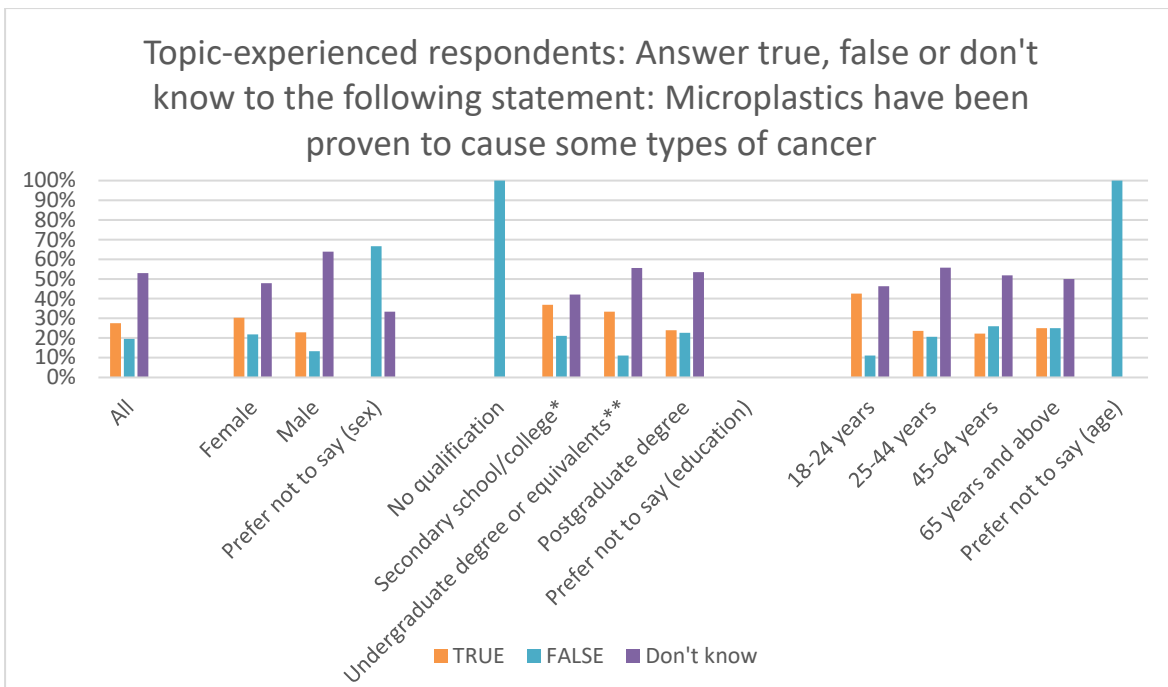


Figure S36 -- Percentage distribution of responses of topic-experienced respondents by demographics (sex, education and age) for 'microplastics have been proven to cause some types of cancer', * (16-18 years) and equivalents, ** Including trade/technical/vocational training.