**Is evoking fear effective? Exploratory findings from a randomized experiment on the impacts of health warning labels on sugar-sweetened beverages**

**Supplementary Materials**

**Contents**

**Stimuli Pretest**

**Supplemental Table 1.** Participant Characteristics

**Supplemental Table 2.** Questionnaire items

**References**

**Stimuli Pretest**

The images for the pictorial HWLs used in the study were selected based on a stimuli pretest (*n*=10) using three diseases related to excessive sugar consumption – weight gain, tooth decay, and diabetic foot ulcers. For each disease, pretest participants were shown three images depicting different levels of severity and asked to indicate how graphic each image was(1). Repeated measures analysis of variance (ANOVA) comparing within-subject ratings of the three severity levels revealed significant differences for tooth decay (*F*(2, 18) = 5.46, *p* < .05) and diabetic foot ulcer (*F*(2, 18) = 14.21, *p* < .001), but not weight gain. Thus, for tooth decay and diabetic foot ulcer, the two images with mean scores that fell in the range of 4-6.5 and 7-10 and were significantly different from each other were selected to represent the moderately and highly severe conditions, respectively.

**Supplemental** **Table 1.** Participant Characteristics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|   | Text-only HWL(*n* = 39) |   | Moderately severe HWL(*n* = 43) |   | Highly severe HWL(*n* = 45) |   | Total(*n* = 127) |
|   | *n* | % |   | *n* | % |   | *n* | % |   | *n* | % |
| Gender |  |  |  |  |  |  |  |  |  |  |  |
| Female | 30 | 76.9% |  | 36 | 83.7% |  | 32 | 71.1% |  | 98 | 77.2% |
| Male | 9 | 23.1% |  | 7 | 16.3% |  | 13 | 28.9% |  | 29 | 22.8% |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Race |  |  |  |  |  |  |  |  |  |  |  |
| Chinese | 37 | 94.9% |  | 40 | 93.0% |  | 42 | 93.3% |  | 119 | 93.7% |
| Malay | 0 | 0.0% |  | 1 | 2.3% |  | 2 | 4.4% |  | 3 | 2.4% |
| Indian | 2 | 5.1% |  | 2 | 4.7% |  | 0 | 0.0% |  | 4 | 3.1% |
| Others | 0 | 0.0% |  | 0 | 0.0% |  | 1 | 2.2% |  | 1 | 0.8% |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Family Diabetes History (Yes) | 14 | 35.9% |  | 19 | 44.2% |  | 24 | 53.3% |  | 57 | 44.9% |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Dieting Status (Yes) | 6 | 15.4% |  | 6 | 14.0% |  | 4 | 8.9% |  | 16 | 12.6% |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Age (Mean (SD)) | 22.51 (1.37) |   | 22.88 (1.16) |   | 23.07 (1.63) |   | 22.83 (1.41) |

**Supplemental Table 2.** Questionnaire items

| **Measures** | **Items** | **Response options** | **Reliability a** |
| --- | --- | --- | --- |
| Manipulation Check(1) | How graphic (i.e. showing gruesome and vivid physical effects of the disease caused by drinking beverages with added sugar) is this picture? | 1 = Not at all…10 = Extremely likely | NA |
|  |  |  |  |
| Fear(2) | How much did the health label make you feel frightened? | 1 = Not at all…7 = Very much | .876 |
| How much did the health label make you feel tense? |
| How much did the health label make you feel nervous |
| How much did the health label make you feel anxious? |
|  |  |  |  |
| Avoidance toward HWLs(3) | How likely is it that you would try to avoid looking at the health label on the can? | 1 = Not at all…5 = Extremely likely | .741 |
| How likely is it that you would keep the can out of sight to avoid looking at the health label? |
|  |  |  |  |
| Reactance toward HWLs(3) | This health label annoys me. | 1 = Strongly disagree…5 = Strongly agree | .722 |
| This health label is trying to manipulate me. |
| The health effect on this health label is overblown. |
|  |  |  |  |
| Attitude toward cutting down consumption of beverages with added sugar(s)(2) | In general, cutting down consumption of beverages with added sugar(s) is…  | (1) good …(5) bad | .864 |
| In general, cutting down consumption of beverages with added sugar(s) is…  | (1) undesirable…(5) desirable |
| In general, cutting down consumption of beverages with added sugar(s) is…  | (1) unfavorable…(5) favorable |
| Intention to cut down consumption of beverages with added sugar(s)(4)  | I intend to cut down consumption of beverages with added sugar(s) within the next 30 days. | 1 = Strongly disagree…7 = Strongly agree | .891 |
| The next time I buy a drink, I intend to choose a non-sugary drink. |
| I intend to cut down consumption of beverages with added sugar(s) to prevent the health problems described in the health label. |
|  |  |  |  |
| Motivation to consume less beverages with added sugar(s)(3) | To what extent would this health label motivate you to drink less beverages with added sugar(s)? | 1 = Not at all…5 = A lot | NA |
|  |  |  |  |
| Acceptability of introducing HWL on SSBs(5) | Would you favour or oppose a government policy requiring the above health label to be placed on drinks? | 1 = Strongly disagree…7 = Strongly agree | NA |

a Cronbach’s α for measures with three or more items, Pearson’s *r* for two-item measures, and NA for single-item measures.

**References**

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