# Method

## *Participants*

Our participants were 412 students enrolled in Psychology 1000 at the University of Missouri – Columbia. Our participants were primarily white (76%), female (66%), and freshmen (74%); further demographic information can be found in [Table here]. Participants received course credit for participation in the study.

## *Procedure*

Participants were randomly assigned to one of two conditions representing different exposure to health benefits information. Our two conditions were an intervention (n=217) and control condition (n=195). Study 2 used a 2 (pre-post) x 2(condition) mixed-subjects design, where condition was a between-subjects factor and participants were assigned to one of the two conditions. Time was a within-subjects factor with the primary outcome, support for UHC, measured before and after participants completed the exercise.

The intervention condition consisted of a web-application adapted from the Choosing Healthplans All Together (CHAT) paradigm used in our ‘active’ paradigm for Study 1. Participants allocated limited resources to levels and categories of coverage to build an explicit health benefit plan. Due to limited resources not all categories can be fully covered, leading to forced trade-offs. The content of the exercise in Study 2 remains the same, but it is delivered by using a web-application instead of pencil and paper; See Appendix [LETTER HERE] for Study 2 experimental materials.

The control condition consisted of informational brochures and pamphlets obtained from the World Health Organization and World Bank containing accurate information on the benefits of UHC. Study 2 used a 2 (pre-post) x 2(condition) mixed-subjects design, where each participant was only assigned to a single condition but were all asked to provide their support for UHC both before and after the experimental condition.

## *Measures*

The primary outcome was the support for UHC scale, adapted from Shen & Labouff (2013), measured both pre and post-test. The items included in the scale were the same as in Study 1. For Study 2, each item was measured on a 100-point sliding scale from 0 (strongly disagree) to 100 (strongly agree), instead of the 7 point Likert scale used in Study 1.

Our secondary outcomes were our proposed mediating factors, perceived equality, and comprehensibility, measured both pre and post-test. Perceived equality was a single item measure adapted from Netemeyer, Boles, and McMurrian (1996) (‘Universal Health Care provides fair and equitable care to all US citizens, regardless of employment status’). Our measure of comprehensibility was adapted from the perceived complexity measure developed by Mulken, Pair, and Forceville (2010). This scale comprised of two items measuring comprehensibility, which are averaged together (‘Universal Health Care is straightforward, ‘Universal Health Care is easy to understand’).

Our tertiary outcomes were our potential moderating factors, subjective and objective numeracy. Objective numeracy was measured using the Rasch Numeracy Scale, created by Weller et al. (2013). This measure consists of 8 items, all math problems of varying complexity, requiring some amount of algebra, percentiles, and table reading skill. This measure was scored from 0 to 8, with the sum of all correct answers to the individual items as the subject’s objective numeracy score. The Cronbach’s alpha for these items is 0.71. An example item is “If it takes five machines 5 minutes to make five widgets, how long would it take 100 machines to make 100 widgets?”. Subjective numeracy was measured using the Subjective Numeracy Scale created by Fagerlin et al. (2007). This measure is a simple average consisting of eight items, with the seventh item reverse scored. Each item was selected using a likert scale that went from 1 (generally poor with numbers) to 7 (generally prefer numbers). The Cronbach’s alpha for these items is 0.84. An example item is “How good are you at calculating a 15% tip?”. Additionally, we did not initially collect data on subjective and objective numeracy until part-way through the data collection. Thus, the first 68 subjects do not have this data recorded.

Participants were then asked whether they paid for their own health insurance and if they have been uninsured, and the active intervention condition was asked if they would be happy having the plan they built as their own health insurance. Each of these three items was measured as a ‘yes’ or ‘no’ response. Additionally, there was a free-response question asking about the subjects’ thoughts about the exercise they just completed. Finally, we also measured demographic information, including gender identity, age, race/ethnicity, and year in school.

## *Power and Statistical Analyses*

We planned to recruit 176 participants. Sample size was determined a-priori using G-power with the following parameters: greater than 90% power to determine a significant large-sized effect (Cohen’s *f* =0.10) at an alpha level of .05, for a linear multiple regression. Our support for UHC outcome was treated as a continuous variable. We examined the effects of experimental condition (CHAT exercise and ‘standard messaging’ control), time of intervention (pre vs. post), subjective numeracy, and objective numeracy on our outcome variable by conducting a series of analysis of variance tests. We examined the main effect and the 2-way interactions of condition x time, time x numeracy, and condition x numeracy of our four predictors. Additionally, we also tested models with random and fixed intercepts, with participants being treated as the random effect. Fixed effects comprised of the effect of the experimental condition, and time of intervention (pre vs post). All tests were conducted in R and were considered statistically significant when *P* < .05. How to write about mediational tests?

## Study 2 Hypothesis:

Hypothesis 1 – The experimental groups will differ in support for UHC.

H1a: Participants in the intervention condition will have greater increases in support for UHC compared to those in the control condition.

Hypothesis 2 – Differences in support for UHC due to experimental group assignment are partially mediated through other factors.

H2a: Differences in support for UHC due to our intervention are partially mediated through perceived equity.

H2b: Differences in support for UHC due to our intervention are partially mediated through comprehensibility.

Hypothesis 3 – Differences in support for UHC due to experimental group assignment are moderated by participant numeracy.

H3a: Differences in support for UHC due to experimental group assignment are moderated by subjective numeracy.

H3b: Differences in support for UHC due to experimental group assignment are moderated by objective numeracy.