Study 1

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## Methods

Like the pilot study, participants were recruited on Amazon Mechanical Turk for a study on decision-making and performance, with an initial sample of 1296 before excluding participants who did not meet inclusion criteria. The inclusion criteria were nearly identical to those in the pilot study, with the exception that participants were not excluded if they failed the comprehension check questions. Thus, a total of 284 participants were excluded before analyses: 25 were excluded because they did not indicate they were American or lived in the United States, 3 were excluded for indicating “Other” for their gender, 192 were excluded for using a phone or tablet to complete the survey, and 64 were excluded for an incomplete survey. The final sample consisted of 1012 participants (53.66% women), with an average age of 37.66 (*SD* = 13.16) years.

Participants who met the inclusion criteria were told they would be completing a two-minute multiplication task where they would be able to choose how they would be paid for their performance. The multiplication task consisted of multiplying two numbers with digits ranging from 1-12 (e.g., 1 X 5, 12 X 11) as quickly as possible. Then, they were provided examples and had to complete three comprehension check questions, which they had to pass to proceed. After completing the comprehension check questions, participants were assigned to either a knowledge of preparation condition or a control condition based on their gender. Participants in the knowledge of preparation condition were presented the following text:

“There is an option to practice/study before completing the multiplication task that is available to all participants. If you take this opportunity to practice/study, we will provide you with materials that may help boost your performance in the multiplication task. You will have unlimited time to practice/study before completing the task. You can stop practicing/studying at any point.”

Participants assigned to the control condition simply proceeded without seeing this text. Then, all participants learned about the payment schemes (either piece-rate or tournament) for the multiplication task and had to pass several comprehension check questions about the payment schemes before being given the opportunity to choose a payment scheme. The payment schemes followed the same structure as the payment schemes in the pilot study, with the exception that the payment was doubled for each scheme (i.e., $.20 per problem in the tournament scheme, $.10 per problem in the piece-rate scheme). In the preparation condition, participants were reminded that they had the option to prepare before completing the task, while participants in the control condition did not have this reminder. Then, participants made a payment scheme choice, where the order of the presentation of the tournament and piece-rate payment options were randomized for each condition, so the tournament payment scheme was listed first for some participants, while the piece-rate payment scheme was listed first for others. After choosing a payment scheme, participants in both conditions were given the chance to prepare before the multiplication task. If they agreed to practice (described as the choice/decision to practice in subsequent analyses), participants were asked, for each times table, if they wanted to practice problems from that specific times table. If they chose to practice a specific times table, they had the chance to practice all twelve combinations of numbers for that times table. They could only proceed if they answered all practice questions correctly. Then, they were asked if they would like to continue practicing or move onto the next times table, while a review table was displayed. This process was repeated for each times table. The practice and review table for each times table was presented in sequential order (i.e., starting at the one times table up to the twelve times table). We measured the number of rounds of preparation each participant completed for analyses (i.e., total practice count), which was calculated as the total number of times a participant agreed to complete a round of preparation (including the choice to repeat a table and the choice to prepare in the first place). Once finished practicing, participants completed as many problems as possible from the paid multiplication task for two minutes and received feedback about their absolute (but not relative) performance.

Before finishing the survey, participants completed a series of incentivized follow-up questions, including confidence and perceptions of gender differences. For these measures, participants were told one of these measures would be selected for a possible bonus payment, and if they answered the selected question correctly, they would earn a bonus of $.10. For the measure of confidence, participants guessed their relative performance compared to all other participants that completed the task by indicating the decile of their score. Participants were also asked to indicate their perceptions of gender differences in performance (i.e., “Do you think men or women in this study correctly solved more multiplication problems on average?”), willingness to prepare on the task (i.e., “Do you think men or women in this study spent more time practicing/studying before completing the multiplication task?”), willingness to prepare in general (i.e., “On most tasks, do you think men or women generally prepare (i.e., practice and/or study) more?”) and willingness to compete (i.e., “Do you think men or women in this study chose the tournament payment option more often?”). They also completed the same measure of risk aversion used in the pilot study. To determine whether cheating was a factor that participants relied on while completing the task, we also asked participants about their use of calculators and perceptions of calculator use on the multiplication task.

## Results

### Summary

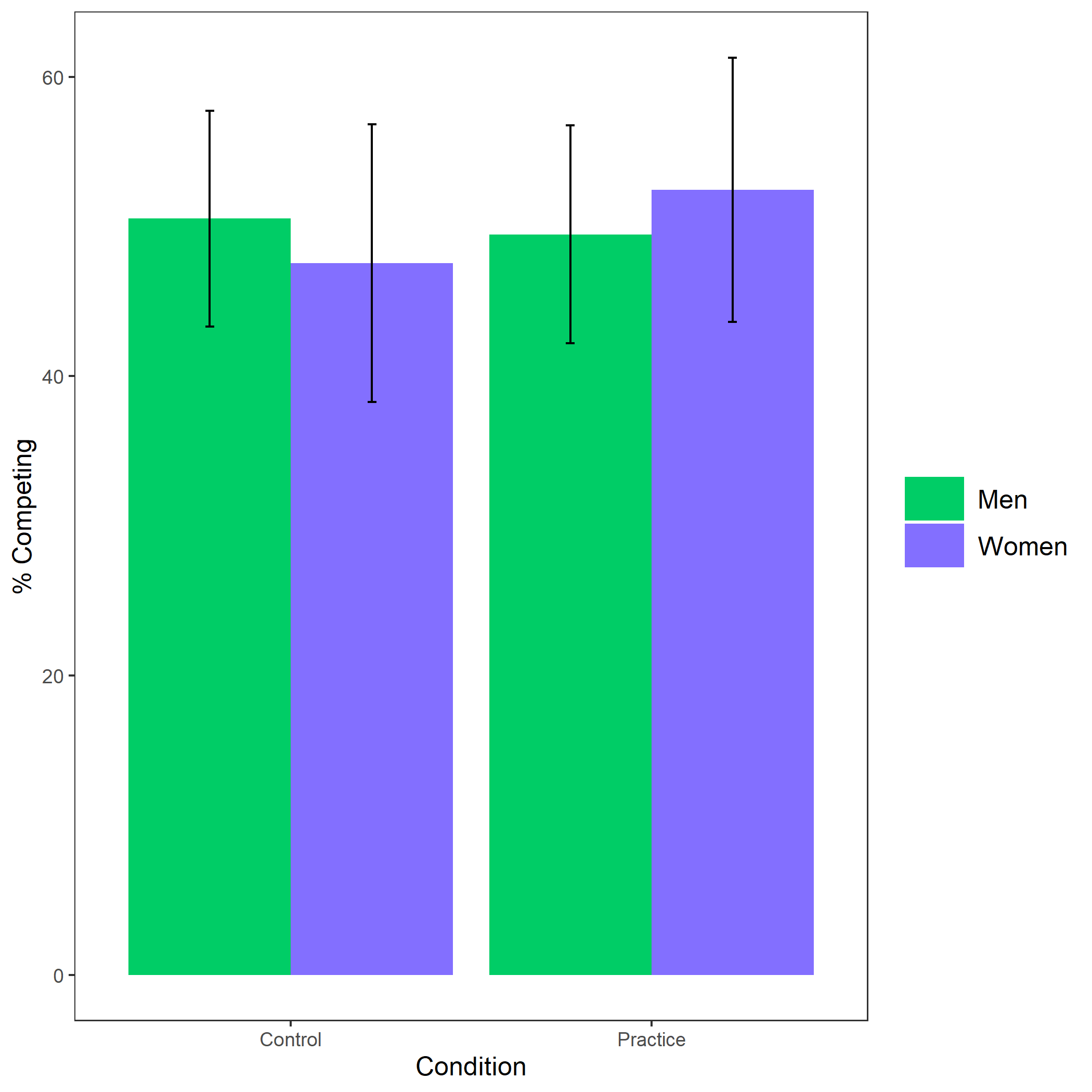
All hypotheses were [pre-registered](https://osf.io/q39a5/) unless otherwise stated and all analyses were conducted in R. We first examined whether gender was balanced across conditions. 49.68% of men and 49.36% of women were assigned to the control condition, while 50.32% of men and 50.64% of women were assigned to the practice condition, for a total of 49.51% of participants assigned to the control condition and 50.49% of participants assigned to the practice condition.

Unlike the pilot study, we found that men were significantly more likely to choose to compete, where 20.26% of men chose to compete compared to 11.23% of women. However, our primary hypothesis that there would be an interaction between gender and condition on the choice to compete was not supported, nor did we find support for a main effect of condition on the choice to compete (see Figure @ref(fig:s100)).

Although we did not find support for the hypothesized interaction, we found evidence for the hypothesized effect of gender on the choice to prepare (see Figure @ref(fig:s101)). Despite choosing to compete less frequently than men, women chose to prepare more for the multiplication task, which, as predicted, aligned with participants’ perceptions of gender differences in preparation (see Figure @ref(fig:s103)) and competition (see Figure @ref(fig:s105)), even though participants did not expect any gender differences in performance (see Figure @ref(fig:s104)).

### Pre-registered analyses

Primary hypothesis 1: We do not find evidence of a significant interaction between gender and condition on the decision to compete , 95% CI , , , (see Figure @ref(fig:s100)). However, there was a main effect of gender on the decision to compete, , 95% CI , , , .



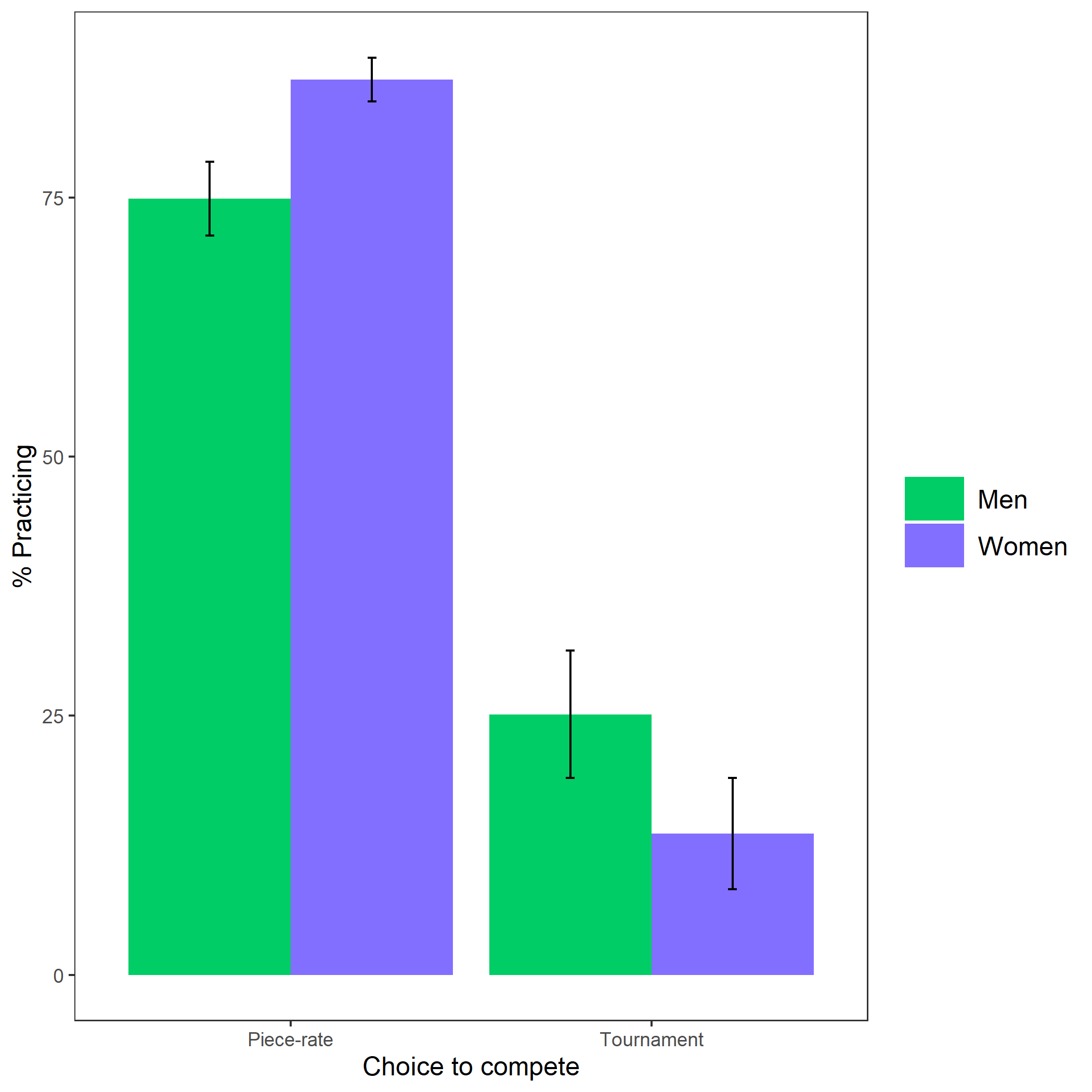
Proportion of participants who chose to compete based on participant gender and condition. Error bars represent standard error.

Cross-Tabulation, Row Proportions  
1L \* 1L

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 1L | control | pract | Total |
| 1L |  |  |  |  |
| Man |  | 185 (49.5%) | 189 (50.5%) | 374 (100.0%) |
| Woman |  | 239 (49.6%) | 243 (50.4%) | 482 (100.0%) |
| Total |  | 424 (49.5%) | 432 (50.5%) | 856 (100.0%) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 1L | control | pract | Total |
| 2L |  |  |  |  |
| Man |  | 48 (50.5%) | 47 (49.5%) | 95 (100.0%) |
| Woman |  | 29 (47.5%) | 32 (52.5%) | 61 (100.0%) |
| Total |  | 77 (49.4%) | 79 (50.6%) | 156 (100.0%) |

Primary hypothesis 2: As, hypothesized, women were 77.93% more likely to take advantage of the opportunity to practice relative to men, , 95% CI , , , , while controlling for the decision to compete (see Figure @ref(fig:s101)). As an exploratory analysis, we tested whether gender and the choice to compete interact to predict the choice to prepare, but did not find evidence for an interaction, , 95% CI , , , .



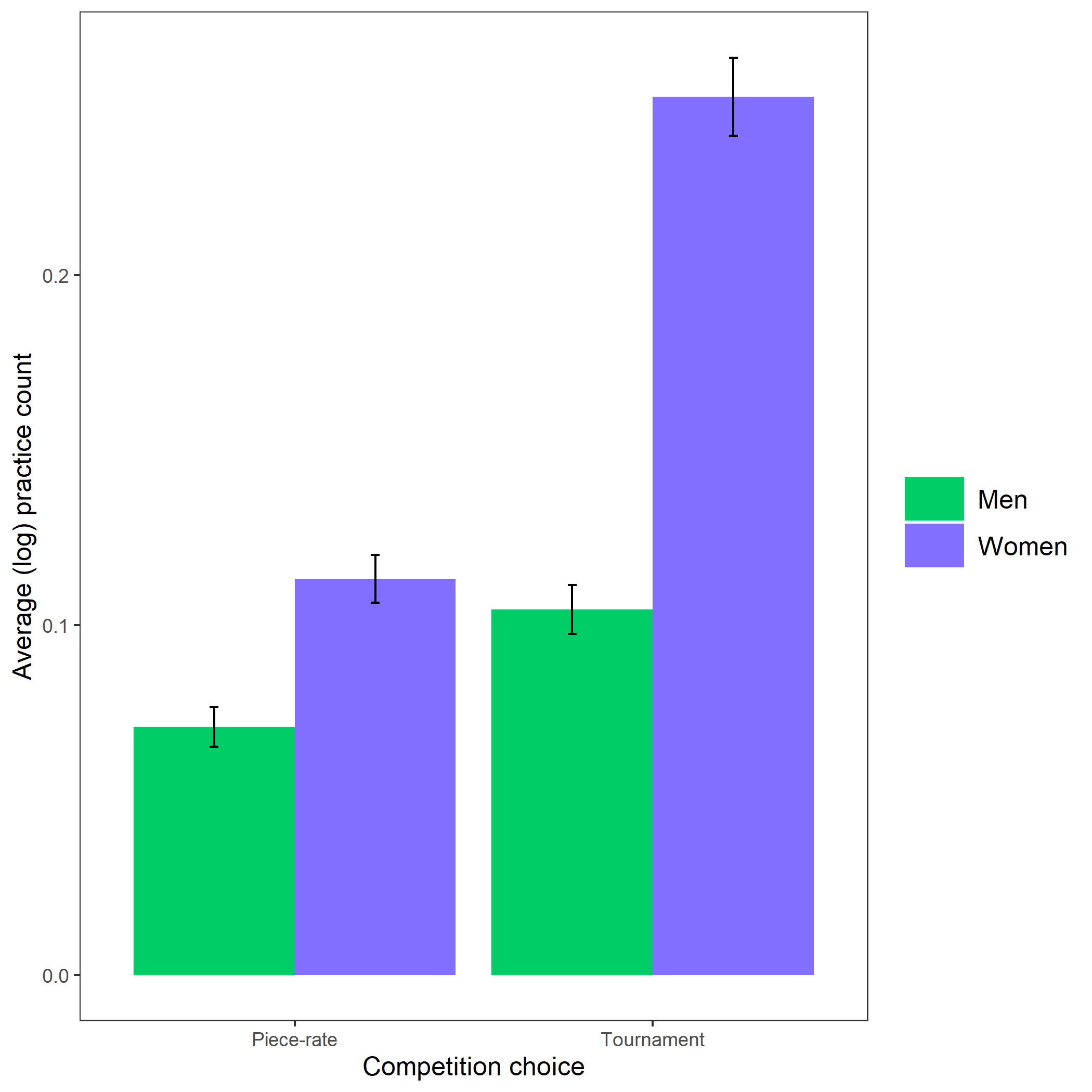
Proportion of participants who chose to prepare based on participant gender and choice to compete. Error bars represent standard error.

Cross-Tabulation, Row Proportions  
1L \* 1L

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 1L | piecerate | tournament | Total |
| 1L |  |  |  |  |
| Man |  | 225 (83.3%) | 45 (16.7%) | 270 (100.0%) |
| Woman |  | 222 (91.7%) | 20 ( 8.3%) | 242 (100.0%) |
| Total |  | 447 (87.3%) | 65 (12.7%) | 512 (100.0%) |

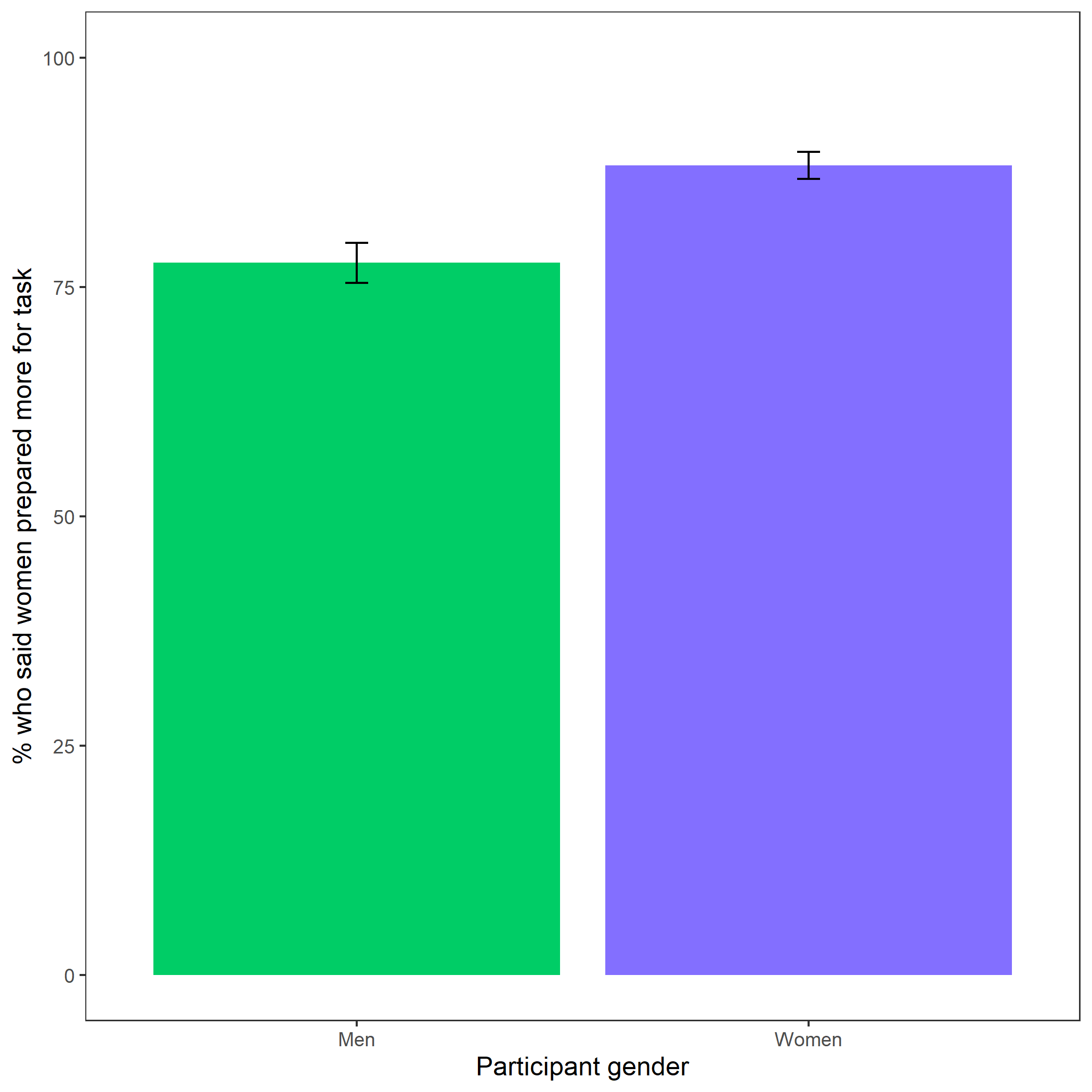
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 2L | piecerate | tournament | Total |
| 1L |  |  |  |  |
| Man |  | 149 (74.9%) | 50 (25.1%) | 199 (100.0%) |
| Woman |  | 260 (86.4%) | 41 (13.6%) | 301 (100.0%) |
| Total |  | 409 (81.8%) | 91 (18.2%) | 500 (100.0%) |

Primary hypothesis 3: Women completed 81.93% more rounds of preparation relative to men, , 95% CI , , , (see Figure @ref(fig:s102)).



Average (log-transformed) practice count based on participant gender and competition choice. Error bars represent standard error.

Primary hypothesis 4: Participants expected women to spend more time preparing for the multiplication task relative to men, , (see Figure @ref(fig:s103)).

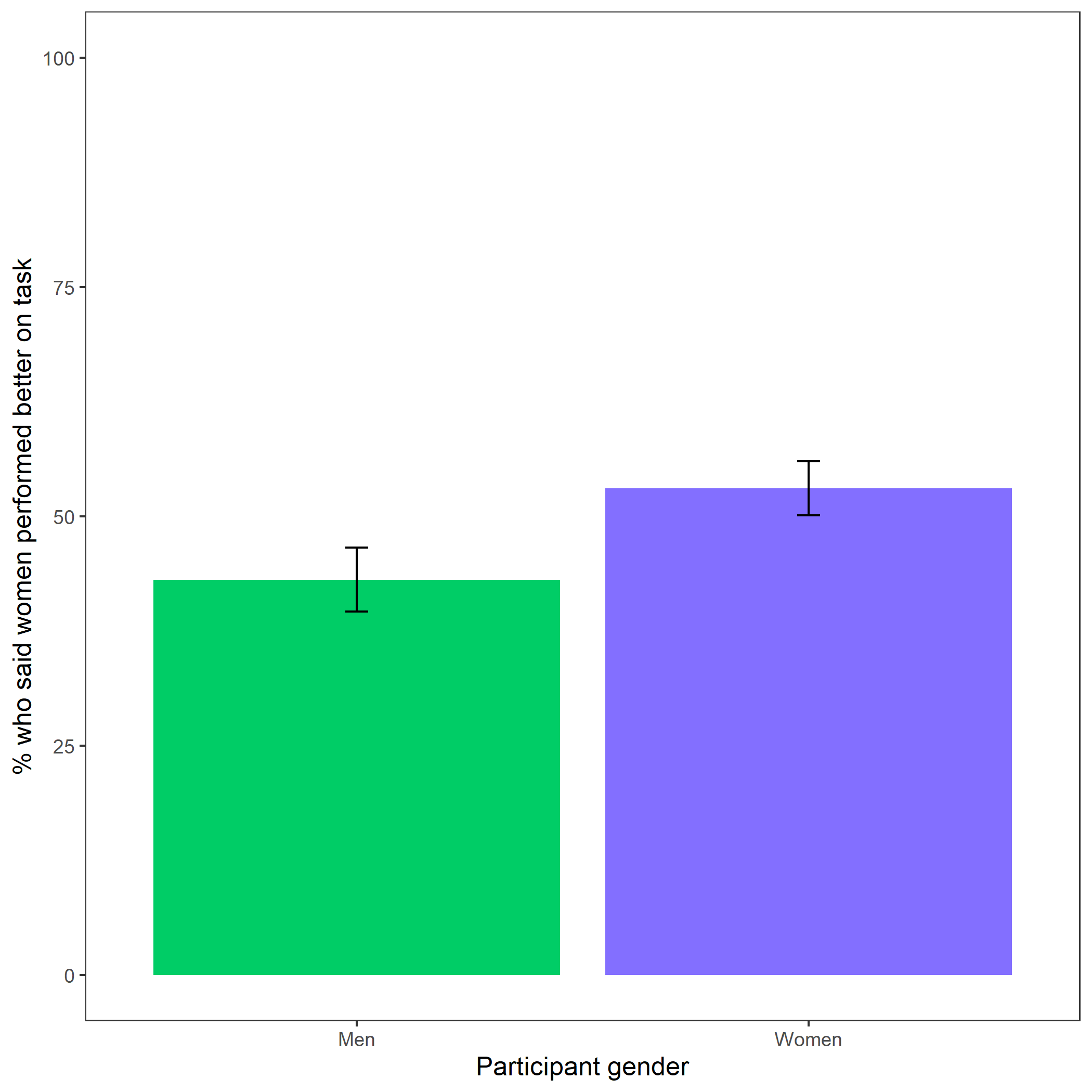


Participants’ perceptions of gender differences in the choice to practice on the task. Error bars represent standard error.

Cross-Tabulation, Row Proportions  
cleanperc\_task\_gender\_pract

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | clean$perc\_task\_gender\_pract | Men | Women | Total |
| clean$gender |  |  |  |  |
| Man |  | 105 (22.4%) | 364 (77.6%) | 469 (100.0%) |
| Woman |  | 64 (11.8%) | 479 (88.2%) | 543 (100.0%) |
| Total |  | 169 (16.7%) | 843 (83.3%) | 1012 (100.0%) |

Exploratory analysis 7a: Participants did not expect any gender differences in performance on the task, , (see Figure @ref(fig:s104)).

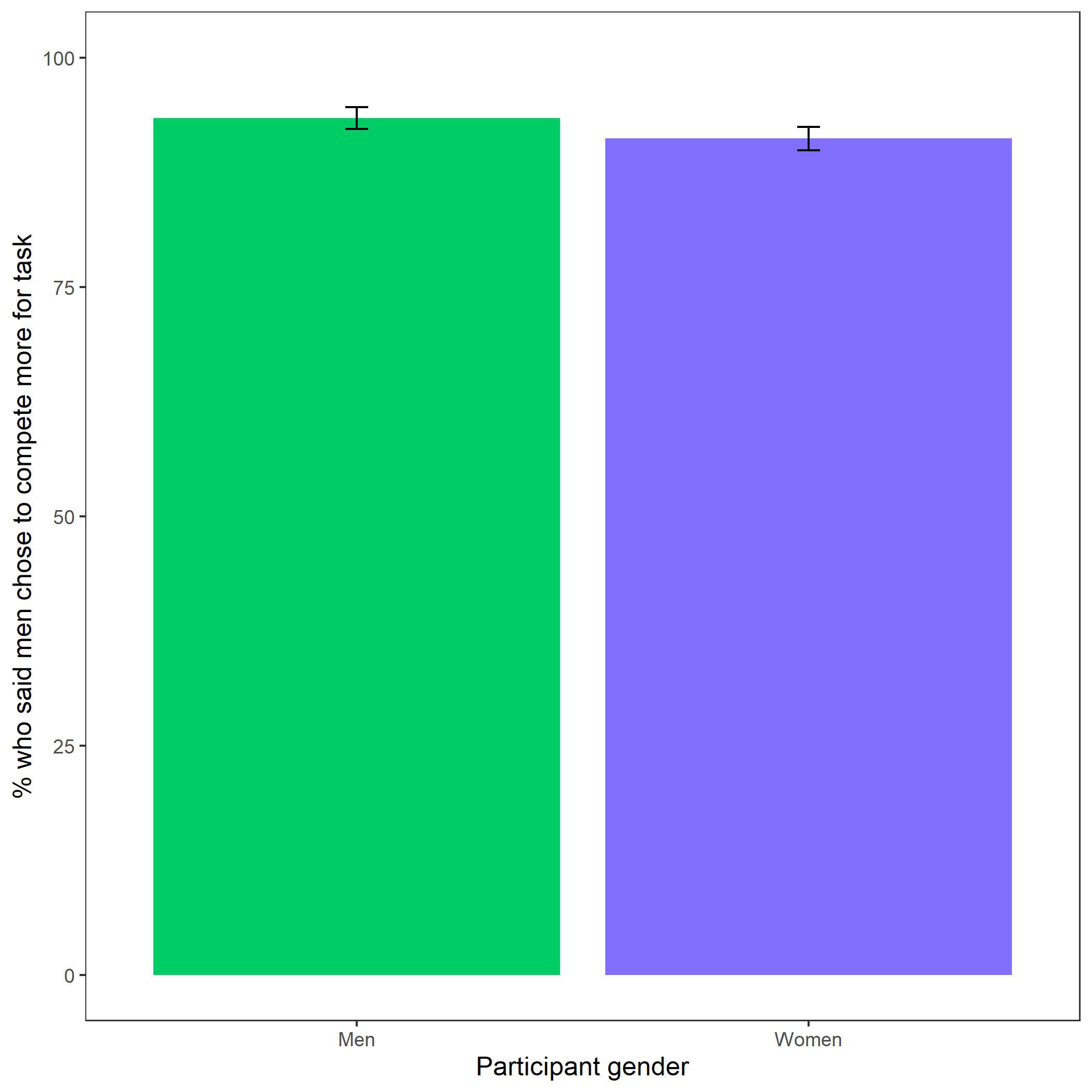


Participants’ perceptions of gender differences in performance on the task. Error bars represent standard error.

Cross-Tabulation, Row Proportions  
cleanbetter\_gender\_guess

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | clean$better\_gender\_guess | Men | Women | Total |
| clean$gender |  |  |  |  |
| Man |  | 267 (56.9%) | 202 (43.1%) | 469 (100.0%) |
| Woman |  | 255 (47.0%) | 288 (53.0%) | 543 (100.0%) |
| Total |  | 522 (51.6%) | 490 (48.4%) | 1012 (100.0%) |

Exploratory analysis 7b: Participants were significantly more likely to expect men to choose to compete more often, , (see Figure @ref(fig:s105)).

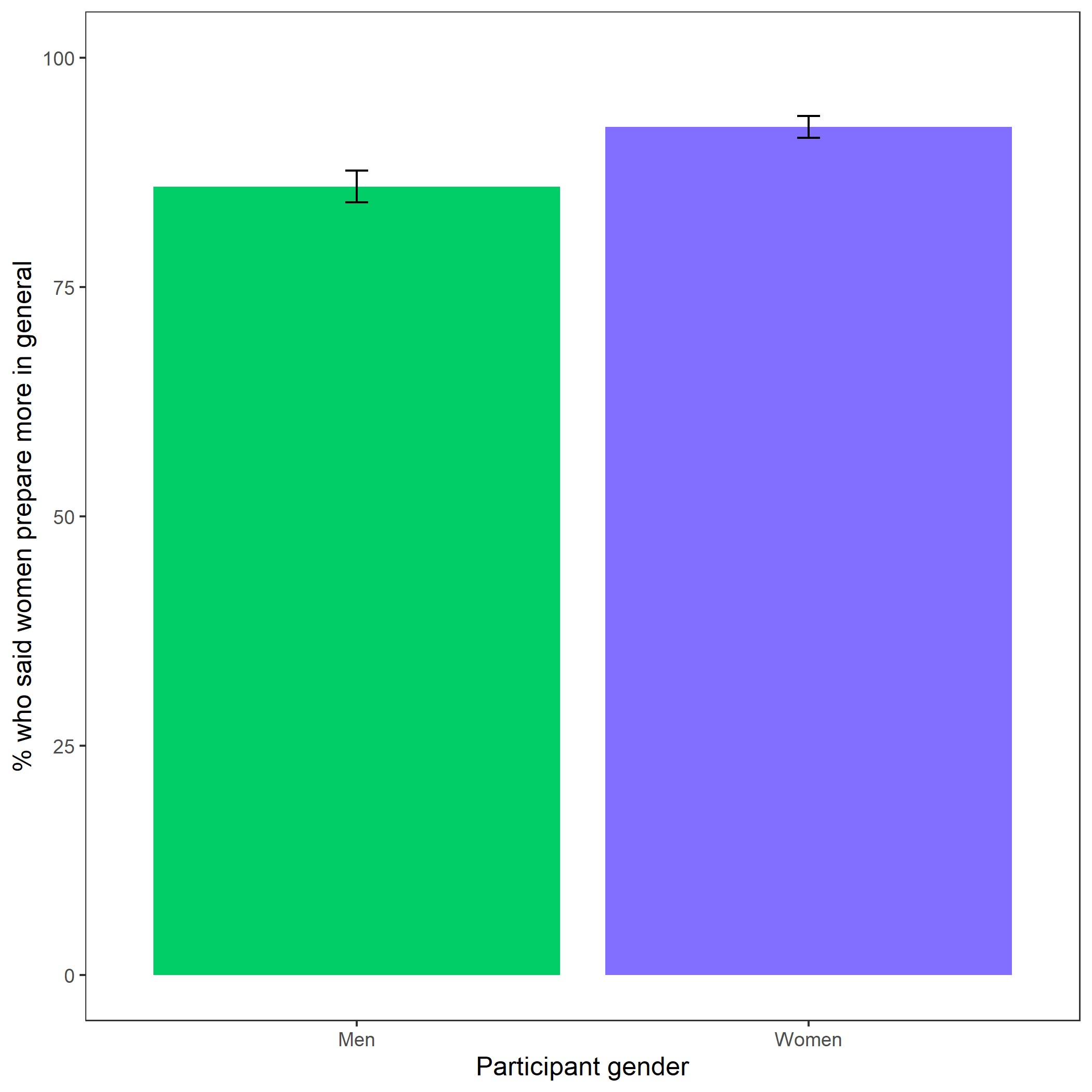


Participants’ perceptions of gender differences in choice to compete. Error bars represent standard error.

Cross-Tabulation, Row Proportions  
cleanperc\_gender\_comp

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | clean$perc\_gender\_comp | Men | Women | Total |
| clean$gender |  |  |  |  |
| Man |  | 438 (93.4%) | 31 (6.6%) | 469 (100.0%) |
| Woman |  | 495 (91.2%) | 48 (8.8%) | 543 (100.0%) |
| Total |  | 933 (92.2%) | 79 (7.8%) | 1012 (100.0%) |

Exploratory analysis 7c: Participants were significantly more likely to expect women to choose to prepare in general, , (see Figure @ref(fig:s106)).



Participants’ perceptions of general gender differences in choice to practice. Error bars represent standard error.

Cross-Tabulation, Row Proportions  
cleanperc\_gen\_gender\_pract

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | clean$perc\_gen\_gender\_pract | Men | Women |  | Total |
| clean$gender |  |  |  |  |  |
| Man |  | 66 (14.1%) | 403 (85.9%) | 0 (0.0%) | 469 (100.0%) |
| Woman |  | 41 ( 7.6%) | 500 (92.1%) | 2 (0.4%) | 543 (100.0%) |
| Total |  | 107 (10.6%) | 903 (89.2%) | 2 (0.2%) | 1012 (100.0%) |