

Falling off the academic bandwagon

Women are more likely to quit at the postdoc to PI transition

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Survey design: The NIH post-doctoral survey consisted of 48 questions and it was administered via the world-wide web. Most questions had multiple choice answers or asked the respondents to rank factors by priority or relevance. The survey was divided into three main sections: I) Demographics, II) The quality of the postdoctoral training experience (which is not presented in full in this report), and III) Issues related to career decisions as postdoctoral fellows look into their short term and long term professional future.

Methods: All statistical analyses were performed by Chi-Square test. The population corresponding to postdoctoral fellows of both genders who were single and had children was dropped from all reported analyses because of inadequate sample size. The survey received IRB exempt status from the Office of Human Subjects at the NIH. Dr. Joan Schwartz, Chair of the Second Task Force on the Status of NIH Intramural Women Scientists, kindly processed the IRB application on behalf of the Postdoctoral Fellows Subcommittee.

Demographics and data set description: The data set consisted of the responses of 1,322 postdoctoral fellows who constituted over 50% of the NIH population of fellows at the time the survey was

administered. Given the large number and diverse background of the post-doctoral fellows at the NIH, gender differences found in this population have the potential to be highly significant and broadly applicable. 87.4 % of respondents held a Ph.D. degree, 9.4% of respondents held an M.D., and 3.2% had a combined M.D./Ph.D. degree¹. The gender breakdown was 42.6% women and 57.4% men², resembling the nationwide gender distribution of postdoctoral fellows in the biological sciences. Of the respondents, 34.05% were US citizens or permanent residents (referred to henceforth as US) and 65.95% were non-US citizens/residents (referred to as non-US). Overall, the gender and nationality breakdown was 17.5% US women, 25.1% non-US women, 16.5% US men and 40.8% non-US men.

The median age range of the respondents was between 30-34 years of age, and there was only a slight significant difference in age between men and women (Supporting Figure 1, the p value for gender differences in age distribution is close to the limit of significance, 0.0455). There was no significant difference across genders in the number of years of postdoctoral experience ($p > 0.6$, data not shown) with 87.3% of men and 89.4% of women being postdoctoral fellows for less than five years. On the other hand, a clear significant difference³ was found when comparing men and women in terms of marital status and having children (Supporting Table 1): there were significantly more married men with children than married women with children (44% and 33.6%, respectively), while the percent of married persons without children was slightly higher for female vs. male respondents (33.1% and 28.5%

¹ Total respondents for whom we have degree information=1292. Ph.D.'s 1129; M.D.'s 122; M.D./Ph.D.'s 41.

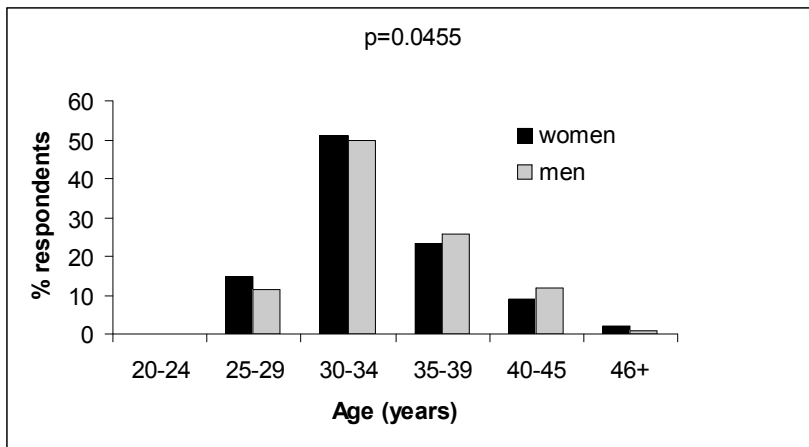
² Total respondents for whom we have gender information=1295. Females=552; males=743

³ Note: Whenever the phrase 'significant' is used in this report it corresponds to statistical significance with $p < 0.05$ by Chi Square analysis across groups. Exact p values are given in figures or in the text.

respectively). From these data alone it appears that women with children are selectively underrepresented in the post-doctoral fellow work force. (Data on age, marital status and number of children for the total NIH fellows population is not available at the NIH for a strict comparison of survey responders vs. total population of NIH fellows, yet more than 50% of fellows are represented in this study).

Supporting Figures

Supporting Figure 1: Age distribution of respondents. The ages of the survey respondents are shown by ranges encompassing 4-5 years each.

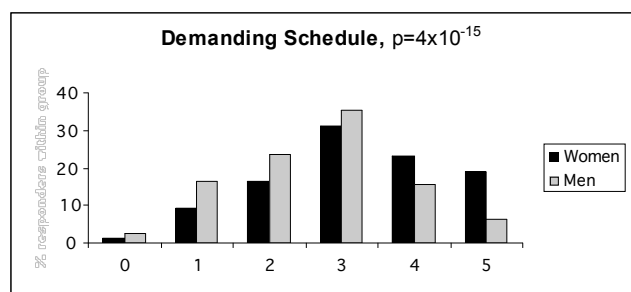


Supporting Figure 2: The importance of various personal and job-related considerations in the decision to become a PI. For all panels, the numbers on the x-axis represent the rating given to the factor in question (indicated in the title of each panel): 0=not applicable, 1=not important, 2=somewhat important, 3=important, 4=very important and 5=extremely important. The results in all panels showed a significant difference in gender distribution except for panels G, K and N. P values are indicated in each panel.

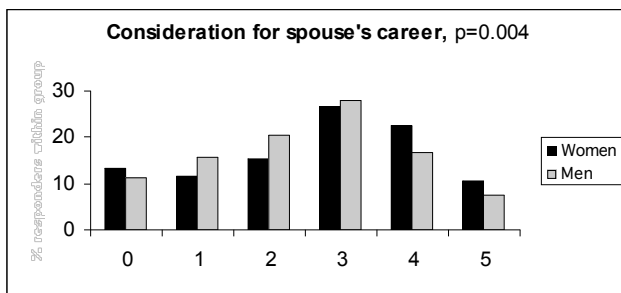
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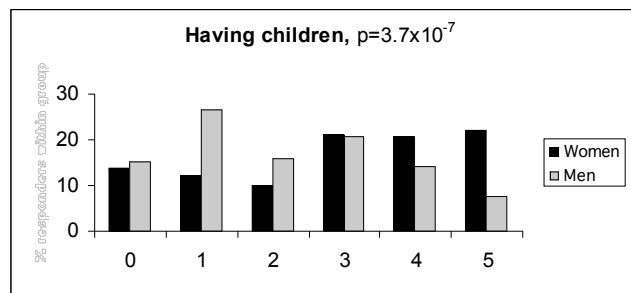
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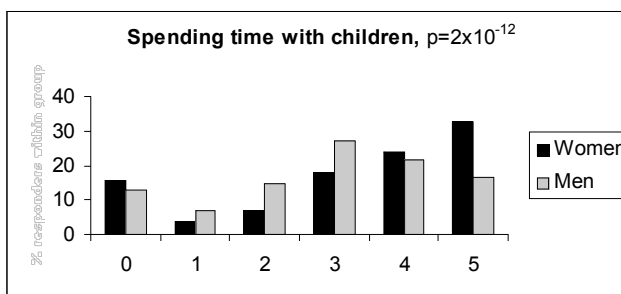
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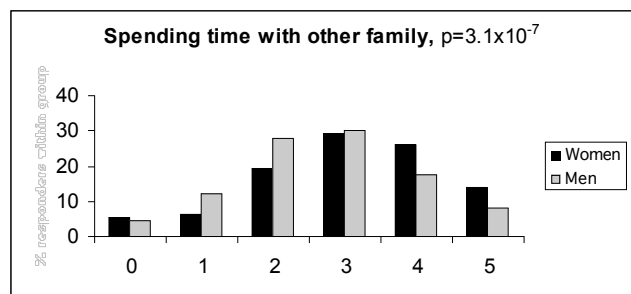
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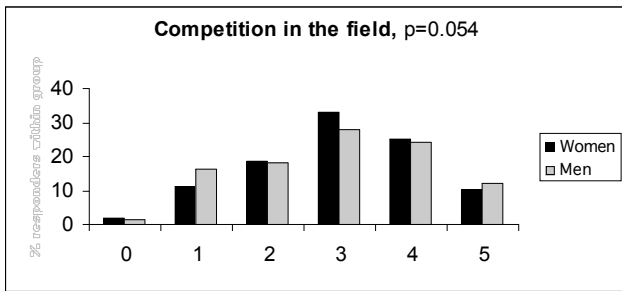
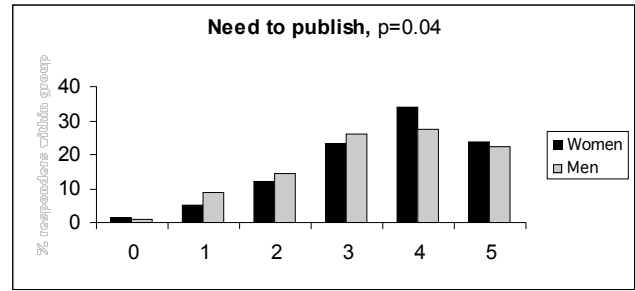
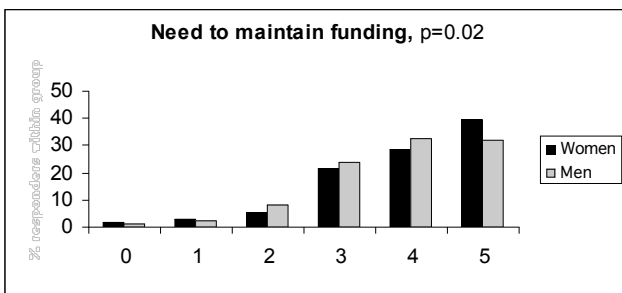
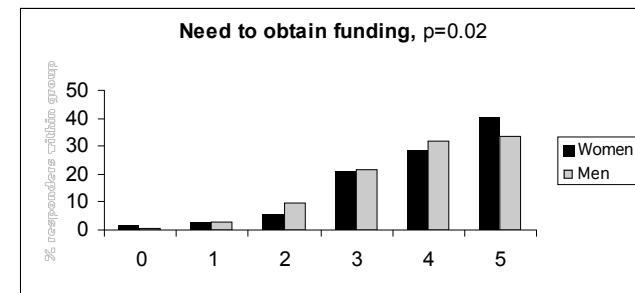
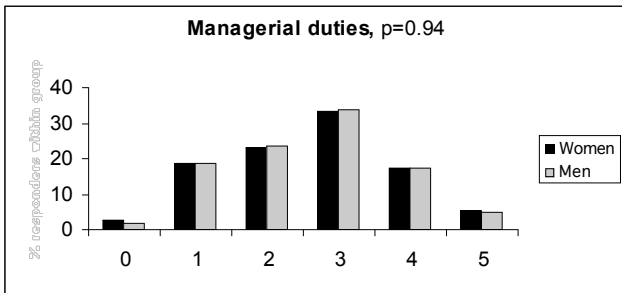
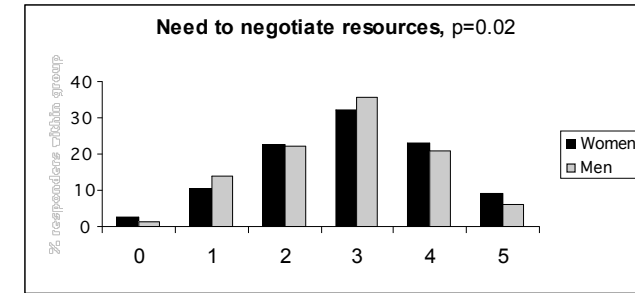
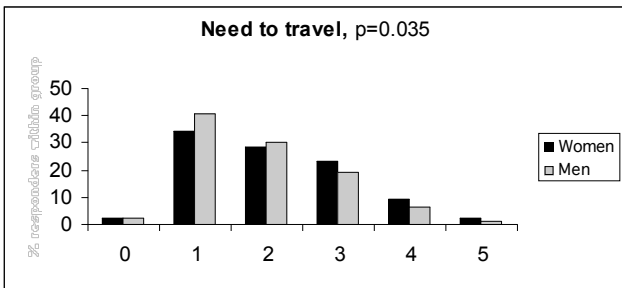
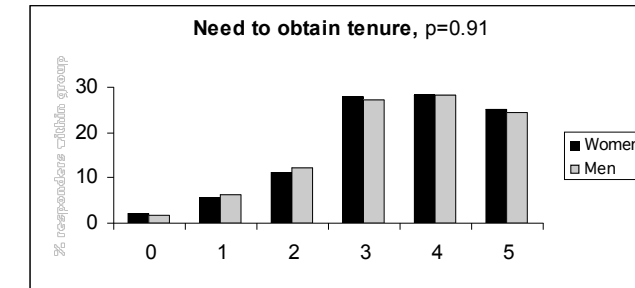


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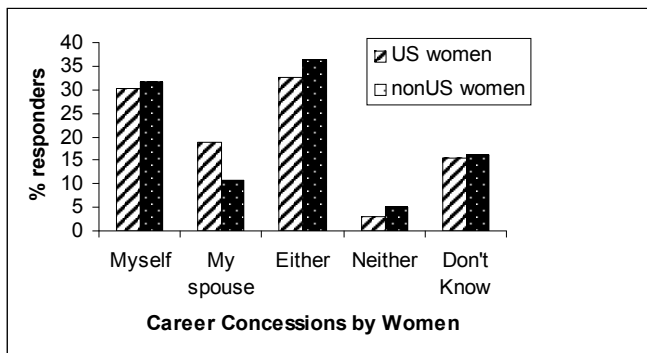
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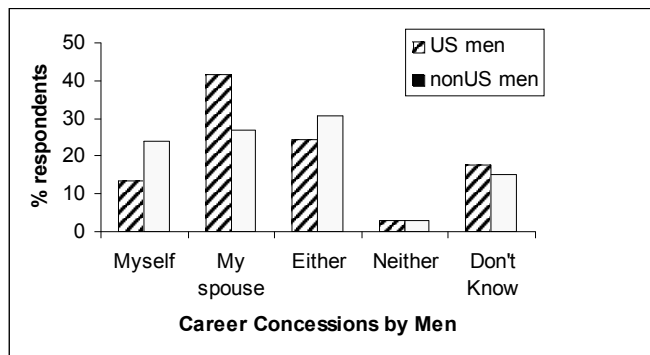
G.**H.****I.****J.****K.****L.****M.****N.**

Supporting Figure 3: Career concessions- responses by gender and nationality. Responses of married fellows to who is more likely to make career concessions. The answers are shown, broken down by gender and nationality. A., Women’s answers by nationality. B., Men’s answers by nationality.

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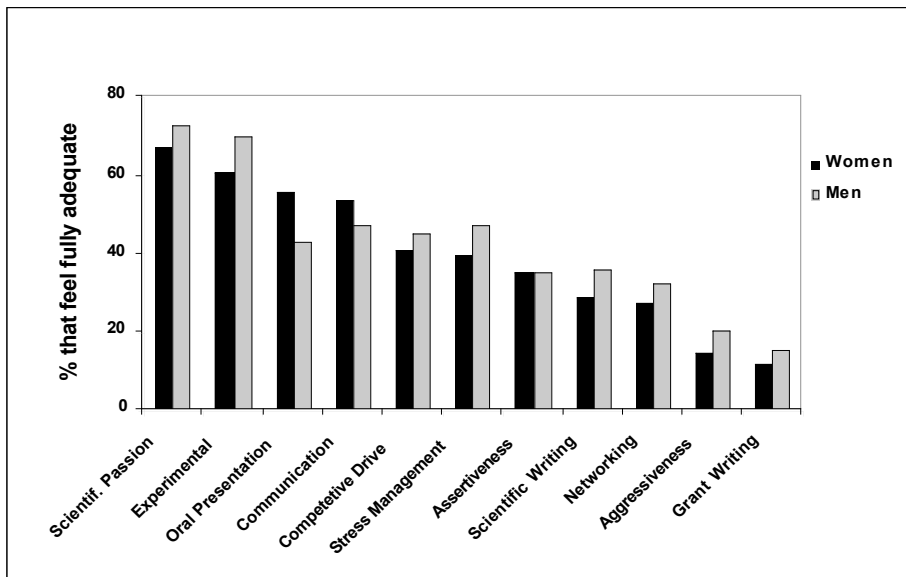


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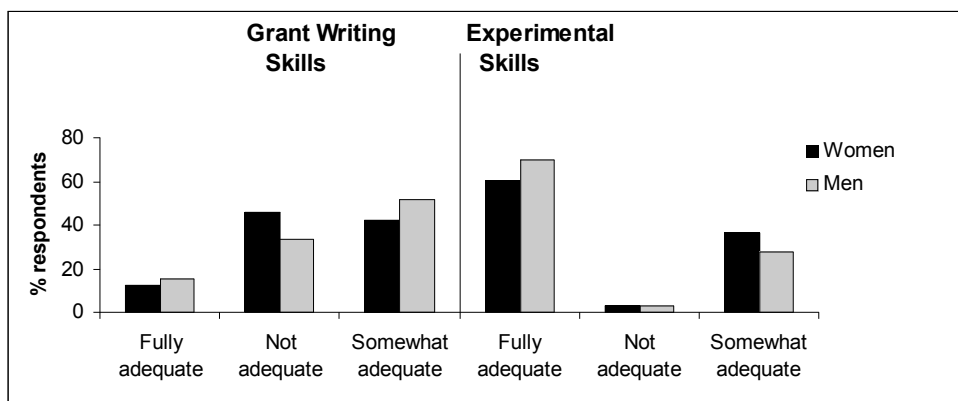


Supporting Figure 4: Self-assessment of professional skills. Fellows were asked to rate the adequacy of their professional expertise in various areas. A, Rating given to several training areas. The percent of those who reported “full adequacy” is shown (other possible answers were “somewhat adequate” and “not adequate”) B, Full breakdown of responses by gender in an area that shows poor overall training (grant writing) and by contrast, an area that shows good overall training (experimental skills).

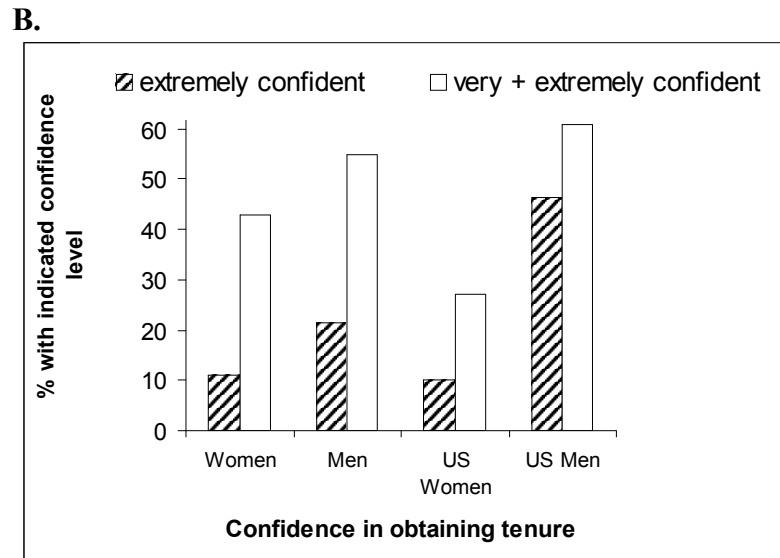
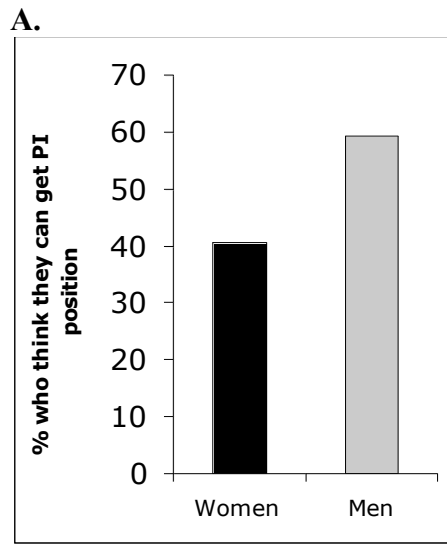
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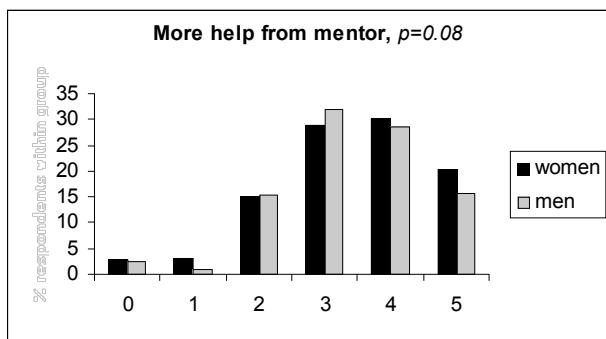


Supporting Figure 5: Confidence in obtaining a PI position and tenure. A, The percent of respondents who reported they were confident they could obtain a PI position despite the small number of available spots is shown, by gender B, The percent of all fellows who had high confidence in attaining tenure assuming they obtained a PI position is shown, by gender. The US fellow population is also shown separately, by gender.

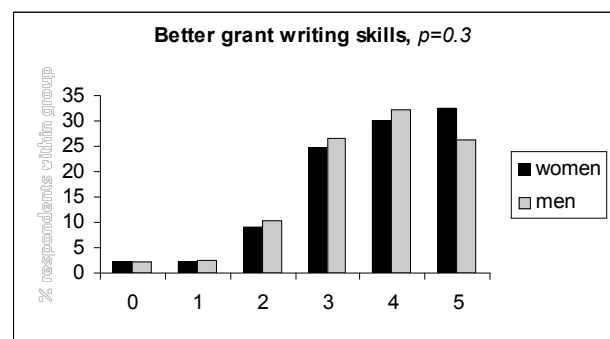


Supporting Figure 6: Rating of factors influencing fellow’s decision to pursue the PI track. For all panels, the numbers on the x-axis represent the rating given to the factor shown on the graph. 0=not applicable, 1=not important, 2=somewhat important, 3=important, 4=very important and 5=extremely important. The gender breakdown with its corresponding p value is given for each factor. The gender differences in all panels, except panels A and B, are statistically significant.

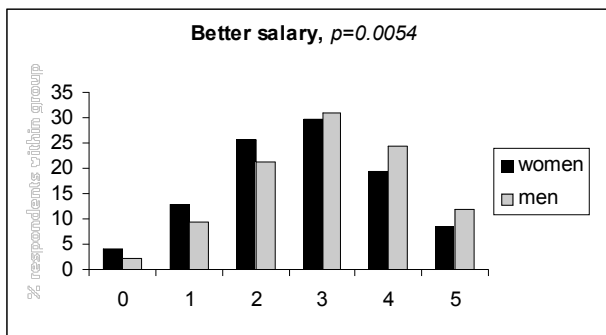
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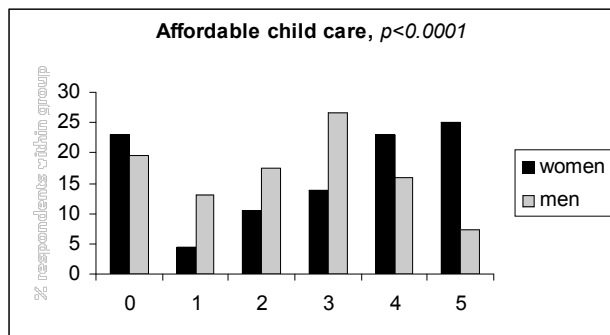
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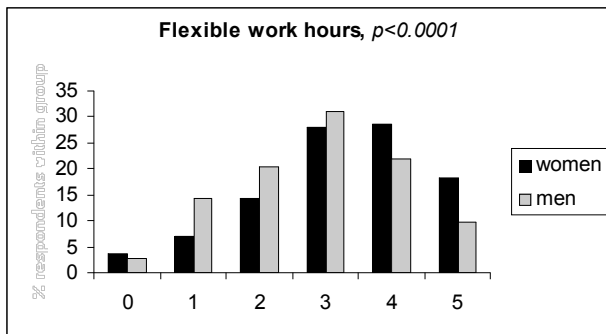
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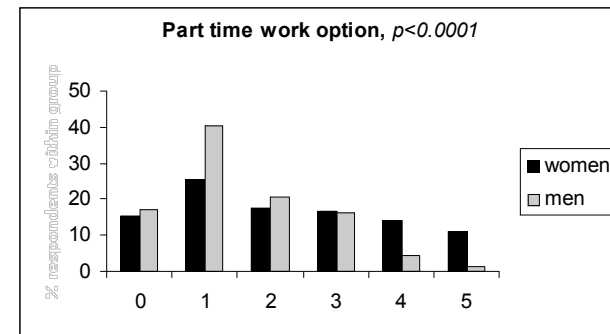
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