

Marital Relationship and its Correlation with Education and Income Level

Mingjia Chen

Department of Psychology, University of Toronto

PSY305: The Treatment of Psychological Data

Dr. Amanda Sharples

March 28, 2022

Abstract

The purpose of the study is to determine correlations between marital relationships with education level and income level. Education levels and income levels were hypothesized to be correlated with marital satisfaction (or marital relationship ratings). Furthermore, age and sex were hypothesized to have relationships with marital satisfaction as well. In this study, two sets of data are used for analysis. A questionnaire was created and used for the research question; a General Social Survey in 2012 was employed as a supplementary dataset for possible factors of age and sex. After correlational and independent sample t-tests were conducted for analysis, the result showed a lack of evidence of the relationships between listed factors with marital satisfaction. As many limitations occur in the analysis, further studies and analysis should be conducted for the purpose of the research in the future.

Introduction

Nowadays, marriage is no longer being considered a requirement for social acceptance and advancement in American societies. Even though the practical importance of marriage has declined, the symbolic significance of marriage is yet unchanged or even higher (Cherlin, 2004). Despite this fact, the population of unmarried people is increasing in recent years (United States Census Bureau, 2017). In general, spouses with better marital relationships were reported healthier (Robles et al, 2014) and happier (Be et al, 2013). Marital satisfaction is also found to be related to personality traits (Sayehmiri et al, 2020). However, maintaining a good marital relationship for people seems to become a challenge as nearly 50% of the first marriage are reported to end in divorce in 2009 (Kreider & Ellis, 2011). Age (An et al, 2020), education levels (Kim et al, 2015) and income levels (Quispe-Torreblanca et al, 2020) are reported to be incremental predictors of life satisfaction. This study hypothesizes that these factors might also be predictors of marital satisfaction as well. No current studies were found to investigate these factors influencing marital satisfaction. The purpose of this paper is to investigate possible factors such as education level, income level, gender and age that would be correlated to marital satisfaction.

Method

Hypothesis

In the study, marital relationships are hypothesized to have relations with the level of education and income. A higher level of education is expected to be positively correlated to marital relationships; on the other hand, the income of participants is hypothesized to be negatively correlated to marital relationships. Other possible correlations with marital relationships (such as with sex or age) will also be analyzed during the study as possible

independent variables (IV) that might relate to marital satisfaction. Sex and age are hypothesized to have no critical effects on marital relationships.

Materials

A specific questionnaire “How is Your Relationship?” is made for the research question. The questionnaire contains six questions regarding participants’ age, gender, income level, marital status, education level, and ratings of their marital relationships. Participants were asked to rate their marital satisfaction using a Likert scale from 1 to 7, with 1 being “very unsatisfied” and 7 being “very satisfied.” The questionnaire is done in the format of an online survey. General Social Survey (GSS), a nationally representative survey for adults in the United States by the National Opinion Research Center (University of Chicago) in 2012, is included as part of the dataset for the study for finding whether age or sex has a relationship with marital relationship rating (or satisfaction). The study included the GSS data collected between March and September of 2012 through in-person interviews. Only certain items from the dataset are used for the purpose of the study.

Participants

The samples were collected from Asian Canadians through an online survey. After the sample was collected, participants who did not consent to give their information or never engaged in a relationship before in the study were automatically excluded from the analysis. A total of 53 participants (38 females, 15 males) were collected for the study with 1 participant not consenting and 13 participants reporting no previous relationship; a final number of 39 responses (28 females, 11 males) with an average age of approximately 23 (23.96) years old were used for analysis. GSS dataset contains a total number of 9581 responses where 2295 participants

responded to the marital satisfaction question. Those 2295 responses (1211 females, 1084 males) with an average age of 51 (50.78) years old were used for the purpose of the analysis.

All independent variables are treated as between-participants since the survey was only to be conducted once on each participant.

Power Analysis

Monte Carlo simulation was used to establish that a sample size of 1156 (578 for each sex) will give 80% power accounting 6% attrition.

Results

A total of six analyses were conducted for the study. By calculations, participants in general were happy with their marriage ($M = 4.90$ for marital relationship ratings and $M = 1.44$ for marital satisfaction). For correlation analysis (Freedman et al, 2007), independent variables used from the survey dataset are age, marital status, marital relationship self-ratings, education levels, and income of each participant (Table 1). Correlation analyses between age and marital satisfaction from dataset GSS were as well conducted (Table 2). For finding possible differences in marital satisfaction between different gender groups, t-test analyses were conducted with independent variable sex and dependent variables (DV) of marital relationship ratings (Table 3) and marital satisfaction (Table 4).

Overall, there are no significant results through both correlational analysis and t-test analysis. Correlations between marital relationship ratings with education level ($r(36) = -.11$, $p\text{-value} = .12$) and income ($r(25) = -.09$, $p = .66$) were reported to have almost no relations. The correlation between age and marital relationship ratings was reported insignificantly small ($r(37) = -.25$, $p = .12$). It is as well hard to conclude a correlation existed between marital satisfaction and age ($r(2270) = -.01$, $p = .72$). T-test conducted between sex (IV) and marital relationship

rating (DV) shows no significant difference between gender groups (female vs. male), $t(49) = -1.39$, $p = .17$, with a small effect size (Cohen's $d = 0.45$). Differences on marital satisfaction between gender groups were found to be statistically insignificant, $t(2293) = -1.35$, $p = .18$ with a very small effect size (Cohen's $d = 0.06$).

Discussion

Results for the correlation and differences of the gender groups are found to be statistically insignificant, which means most of the correlations seem not to exist between the variables. The study design has many limitations. The dataset and questionnaire were different from the one described in pre-registration (Chen, 2022) because of technical limitations such as not enough participants from the University of Toronto willing to join and the challenging technical requirements for a completely randomized questionnaire. Another problem with the sample is that most participants were relatively young ($M = 23.96$) where they might not experience long periods of marriage which might result in different marital satisfaction from the rest of the population. The gender distribution is also uneven since more female participants reported the responses which might cause a low representative validity. Due to the small sample size, furthermore, the questionnaire data fails to be representative of a population and lacks cultural representation; it thus fails to have an 80% power. As power fails to reach 80%, the possibility of having Type II error is higher for the analysis. In this case, a significant correlation or difference might exist in real life but the analysis failed to correctly report them: the analyses might fail to detect an existing relationship due to these limitations. On the other hand, the GSS dataset is quite outdated and hence may fail to represent the population in recent years. The survey was specifically done in the United States thus the result may fail to represent populations from other cultures and developing countries. The questionnaire dataset, which is created and

used for Asian Canadians, might also be different from the population of the United States (GSS); the sample size from GSS is also relatively large compared to the questionnaire sample size. These differences between the two samples might fail to support the conclusions of the study. Further studies and data collected should be conducted on the research question in the future to have a clearer picture of the relationships.

Tables

Table 1

Descriptive Statistics and Correlations for Study Variables (Questionnaire)

Variable	n	M	SD	1	2	3	4
1. Marital Relationship Rating	39	4.90	1.83	-			
2. Age	52	23.96	7.03	-.25	-		
3. Education Level	51	3.86	0.49	-.11	-	-	
4. Income	37	2.14	1.08	-.09	-	-	-

*p < .05. **p < .01.

Table 2

Descriptive Statistics and Correlations for Study Variables (GSS)

Variable	n	M	SD	1	2	3	4
1. Marital Satisfaction	2295	1.44	0.56	-			
2. Age	4857	50.78	15.09	-.01	-		

*p < .05. **p < .01.

Table 3*Results of T-test Analysis Examining the Difference in Marital Rating between Sex group**(Questionnaire)*

Logistic parameter	Female		Male		t(49)	p	Cohen's d
	M	SD	M	SD			
Marital Relationship Rating	3.447	2.648	4.615	2.501	-1.391	.170	0.447

*p < .05. **p < .01.

Table 4*Results of T-test Analysis Examining the Difference on Marital Satisfaction between Sex group**(GSS)*

Logistic parameter	Female		Male		t(2293)	p	Cohen's d
	M	SD	M	SD			
Marital Satisfaction	1.457	0.562	1.425	0.553	-1.345	.179	0.056

*p < .05. **p < .01.

Figures

Figure 1

Correlation Scatter Plot Between Education Level and Marital Rating

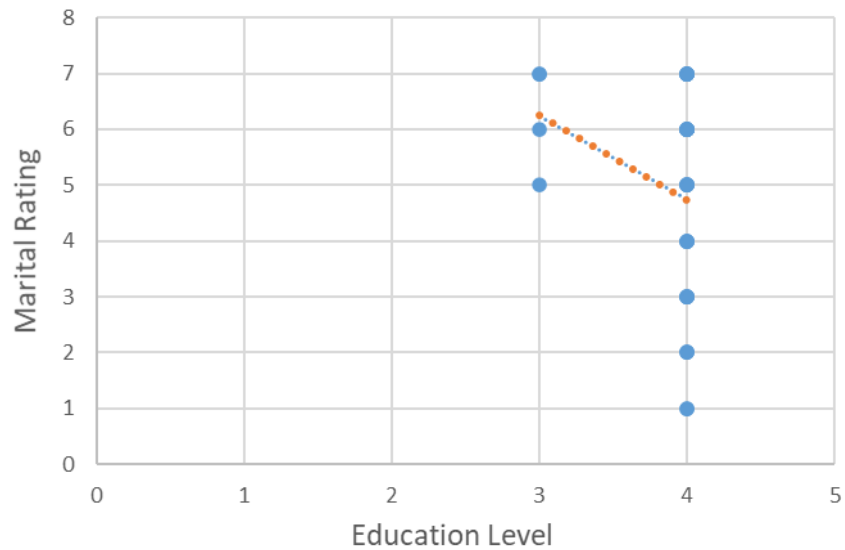


Figure 2

Correlation Scatter Plot Between Income level and Marital Rating

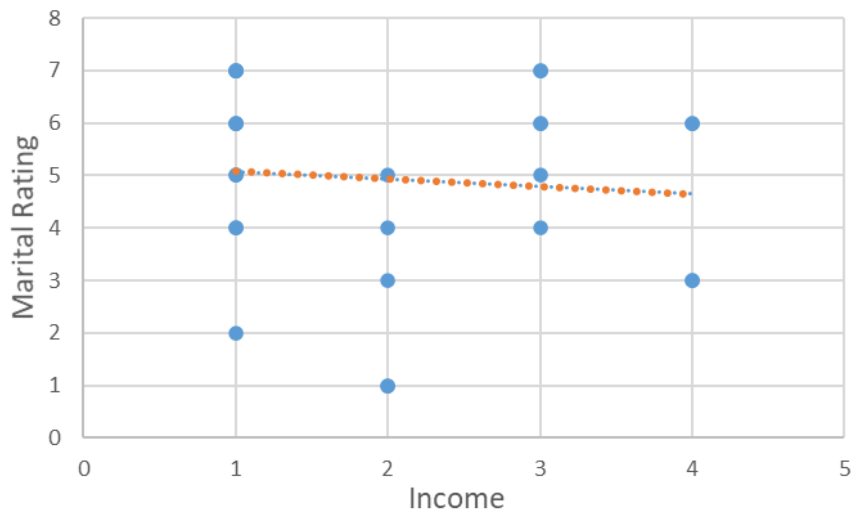
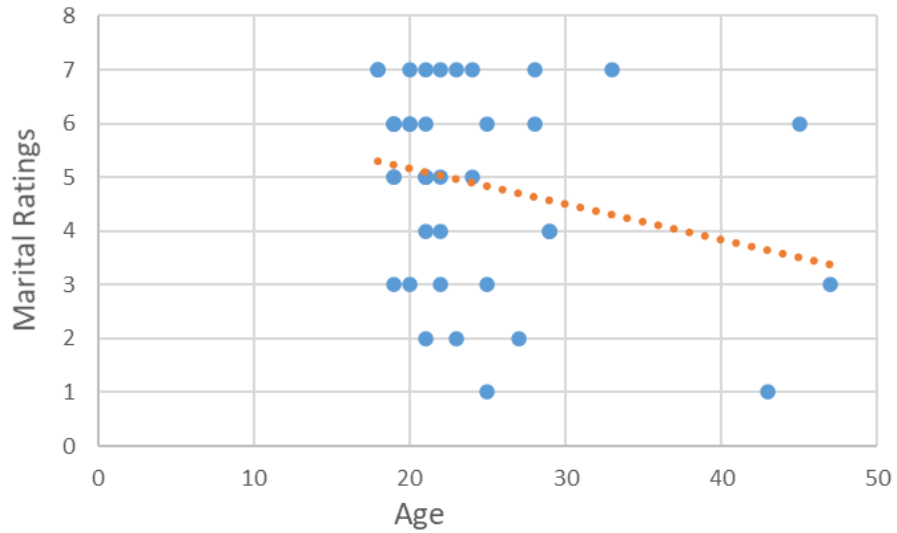
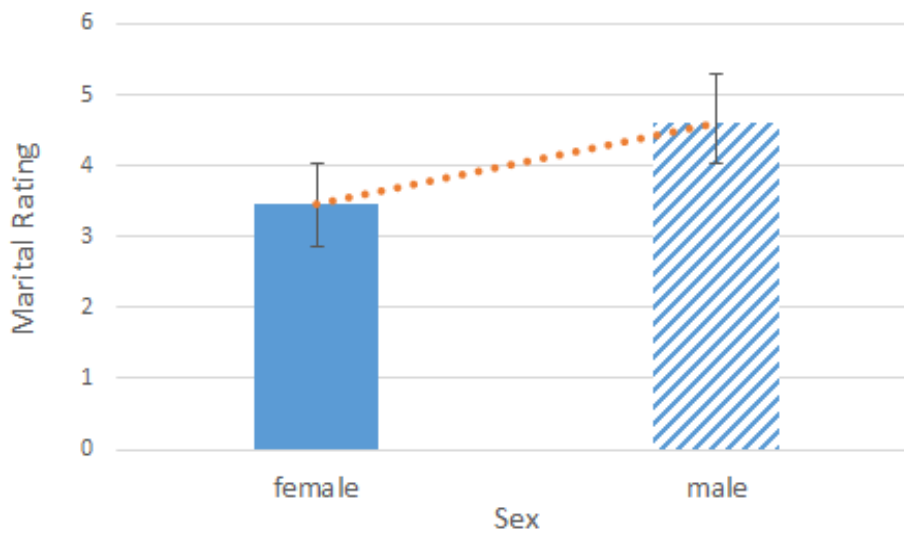


Figure 3

Correlation Scatter Plot Between Age and Marital Rating

**Figure 4**

Group comparison Bar Chart on Difference of Marital Ratings between Sex groups



References

- An, H.-Y., Chen, W., Wang, C.-W., Yang, H.-F., Huang, W.-T., & Fan, S.-Y. (2020). The relationships between physical activity and life satisfaction and happiness among young, middle-aged, and older adults. *International Journal of Environmental Research and Public Health*, 17(13), 4817. <https://doi.org/10.3390/ijerph17134817>
- BE, D. A. N. I. E. L., WHISMAN, M. A. R. K. A., & UEBELACKER, L. I. S. A. A. (2013). Prospective associations between Marital Adjustment and Life Satisfaction. *Personal Relationships*, 20(4), 728–739. <https://doi.org/10.1111/pere.12011>
- Chen, M. (n.d.). Preregistration: Correlations related to Marital Relationships. OSF. Retrieved March 30, 2022, from <https://osf.io/3wxed>
- Cherlin, A. J. (2004). The deinstitutionalization of American marriage. *Journal of Marriage and Family*, 66(4), 848–861. <https://doi.org/10.1111/j.0022-2445.2004.00058.x>
- Erdfelder, E., Faul, F., & Buchner, A. (1996). GPOWER: A General Power Analysis Program. *Behavior Research Methods, Instruments, & Computers*, 28(1), 1–11. <https://doi.org/10.3758/bf03203630>
- FFF unmarried and single americans Week 2017 - Census. (n.d.). Retrieved March 30, 2022, from <https://www.census.gov/content/dam/Census/newsroom/facts-for-features/2017/cb17-ffl.pdf>
- Freedman, D., Pisani, R., & Purves, R. (2007). *Statistics (international student edition)*. Pisani, R. Purves, 4th Edn. WW Norton & Company, New York.
- Kim, J.-H., Yoo, K.-B., Park, E.-C., Lee, S. G., & Kim, T. H. (2015). Combined effects of education level and perceived social class on self-rated health and life satisfaction:

- Results of Korean labor and Income Panel Study Wave 8-wave 15. Health and Quality of Life Outcomes, 13(1). <https://doi.org/10.1186/s12955-015-0375-5>
- Kreider, R. M., & Ellis, R. (2011). Number, timing, and duration of marriages and divorces: 2009. Retrieved March 30, 2022, from <https://www2.census.gov/library/publications/2011/demo/p70-125.pdf>
- Microsoft Corporation. (2018). Microsoft Excel. Retrieved from <https://office.microsoft.com/excel>
- Mooney, C. (1997). Monte Carlo Simulation. <https://doi.org/10.4135/9781412985116>
- Quispe-Torreblanca, E. G., Brown, G. D., Boyce, C. J., Wood, A. M., & De Neve, J.-E. (2020). Inequality and social rank: Income increases buy more life satisfaction in more equal countries. *Personality and Social Psychology Bulletin*, 47(4), 519–539. <https://doi.org/10.1177/0146167220923853>
- Robles, T. F., Slatcher, R. B., Trombello, J. M., & McGinn, M. M. (2014). Marital quality and health: A Meta-analytic review. *Psychological Bulletin*, 140(1), 140–187. <https://doi.org/10.1037/a0031859>
- Sayehmiri, K., Kareem, K. I., Abdi, K., Dalvand, S., & Gheshlagh, R. G. (2020). The relationship between personality traits and marital satisfaction: A systematic review and meta-analysis. *BMC Psychology*, 8(1). <https://doi.org/10.1186/s40359-020-0383-z>
- Smith, T. W., P. V. Marsden, & Hout, M. (2014). General Social Survey, 2012 Merged Data, Including a Cultural Module [United States]. ICPSR35478-v4. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2016-05-26. <https://doi.org/10.3886/ICPSR35478.v4>