How Residents of Canada Feel about Life and its Correlations with Other Variables in General Social Survey 2017*

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Abstract

Everyone has different viewpoints on life, and the viewpoints are impacted by diverse factors. In this paper, we gather data on Canadian residents' general feelings about life as a whole and compare it to various variables to find correlations. From the result of the General Social Survey 2017 on family, we manipulate the data to show that feelings about life as a whole have the most perceptible connections to health and mental health, and economical status to a lesser degree. This may give us directions on how happiness is linked with one's physical and mental health.

1 Introduction

In the 2017 General Social Survey, respondents were given a question on how they feel about life as a whole. Canadians answered the question with a numeric value with zero being the lowest and ten being the highest. Although the general population responded with a high number, the answers included all eleven numbers on the scale. With other variables on the survey that recorded answers on various aspects, we will perform various analyses to derive a result suggesting which variable has the highest correlation. This paper attempts to formulate multiple procedures in achieving the desired outcome. First, we observe the overall distribution of the score. Then, we compare the results against sex and age. Moreover, we analyze family income. Finally, we compare the score with self reported health and self reported mental health. Throughout the analyses, we concluded that self reported health and self reported mental health had the highest visible correlation with feelings about life as a whole. Continuing work could include finding more variables that show correlation and using statistical models to find the most significant variable. We will refer to feelings about life as a whole as feelings about life throughout the paper.

The remainder of the paper is as follows: Section 2 performs the analyses using plots and tables and Section 3 explains the conclusion reached by the data. Following the conclusion there are three discussion points in Section 4.1, Section 4.2, and Section 4.3. Then the paper goes over weaknesses and ideas for next steps in Section 4.4.

2 Data

The data we are going to analyze is the result of the Canadian General Social Survey on Family (2017). The data is organized in respect to its age, sex, education, number of children, and other variables totaling up to eighty one entries. This survey was performed from February 2 to November 30, 2017, and it may not correctly represent the current state of the respondents' familial status. Each respondent is fifteen years old or older, a full-time resident in Canada excluding Yukon, Northwest Territories, and Yukon. There are

*Code and data are available at: https://github.com/oheunkyo/Feelings-on-Life-GSS.

Table 1: First ten rows of the responses in GSS 2017 with only necessary columns

Age	Feelings on Life	Sex	Self Rated Health	Self Rated Mental Health	Family Income
52.7	8	Female	Excellent	Excellent	$25,000 to $49,999
51.1	10	Male	Good	Good	$75,000 to $99,999
63.6	8	Female	Very good	Good	$75,000 to $99,999
80.0	10	Female	Very good	Very good	$100,000 to $ 124,999
28.0	8	Male	Good	Good	$50,000 to $74,999
63.0	9	Female	Excellent	Very good	$50,000 to $74,999
58.8	4	Female	Poor	Poor	Less than $25,000
80.0	10	Female	Good	Very good	Less than $25,000
63.8	8	Female	Very good	Very good	Less than $25,000
25.2	5	Male	Poor	Poor	Less than $25,000

20602 responses in the data. We obtain our dataset from the University of Toronto Library, available to University of Toronto students and faculty members. This data can also be found in databases of other academic institutions to their staff and students. We modify and clean our data using packages `tidyverse` (Wickham et al. 2019) and `janitor` (Firke 2021) using the and the statistical programming language R (R Core Team 2020).

After obtaining our data, we reduce the number of variables to only contain the necessary columns. In this paper, we will focus on six columns: age, feelings about life as a whole, sex, self rated health, self rated mental health, and household income. Age is given as an number with one digit after the decimal point with the lowest possible number being 15. The column has been named as `AGEC`. Column `SEX` represents the self reported sex of the respondent with `1` being male and `2` being female. The responses has been renamed to `male` and `female` respectably. Feelings about life as a whole is in the variable `SLM_01`, and it is a eleven-point scale question on how the respondent perceives life as a whole including satisfaction. Zero in the scale means 'Very Dissatisfied' and ten means 'Very Satisfied.' Variables `SRH_110` and `SRH_115` are the self rated health and self rated mental health respectably. Respondents' answers were recorded with a numeric value between one to five, where one means 'Excellent' health or mental health and five means 'Poor' health or mental health. The answers have been renamed to `Excellent`, `Very good`, `Good`, `Fair`, and `Poor`. The answers also include `NA` and `Don't know`, which has been renamed accordingly as well. Finally, household income is reported in the variable `FAMINCG2` and it is reported in increments of 25,000 Canadian dollars, up to 125,000 dollars. All variables have been renamed as following for better readability: `age`, `sex`, `feelings_life`, `self_rated_health`, `self_rated_mental_health`, and `income_family`.

Table 1 represents the first ten rows of our dataset. The table was created with `knitr::kable()` (Xie 2021). We are interested in which variables show signs of correlation with the responses about feelings about life as a whole. Figure 1 shows the overall distribution of the responses on how respondents feel about life. From this figure, it is clear that the general population has a positive outlook on life. Most of the responses are above 6, with the highest number being 8. Second most popular response was 10, the best score one can give. Figures in the paper were created with `ggplot2` (Wickham 2016)

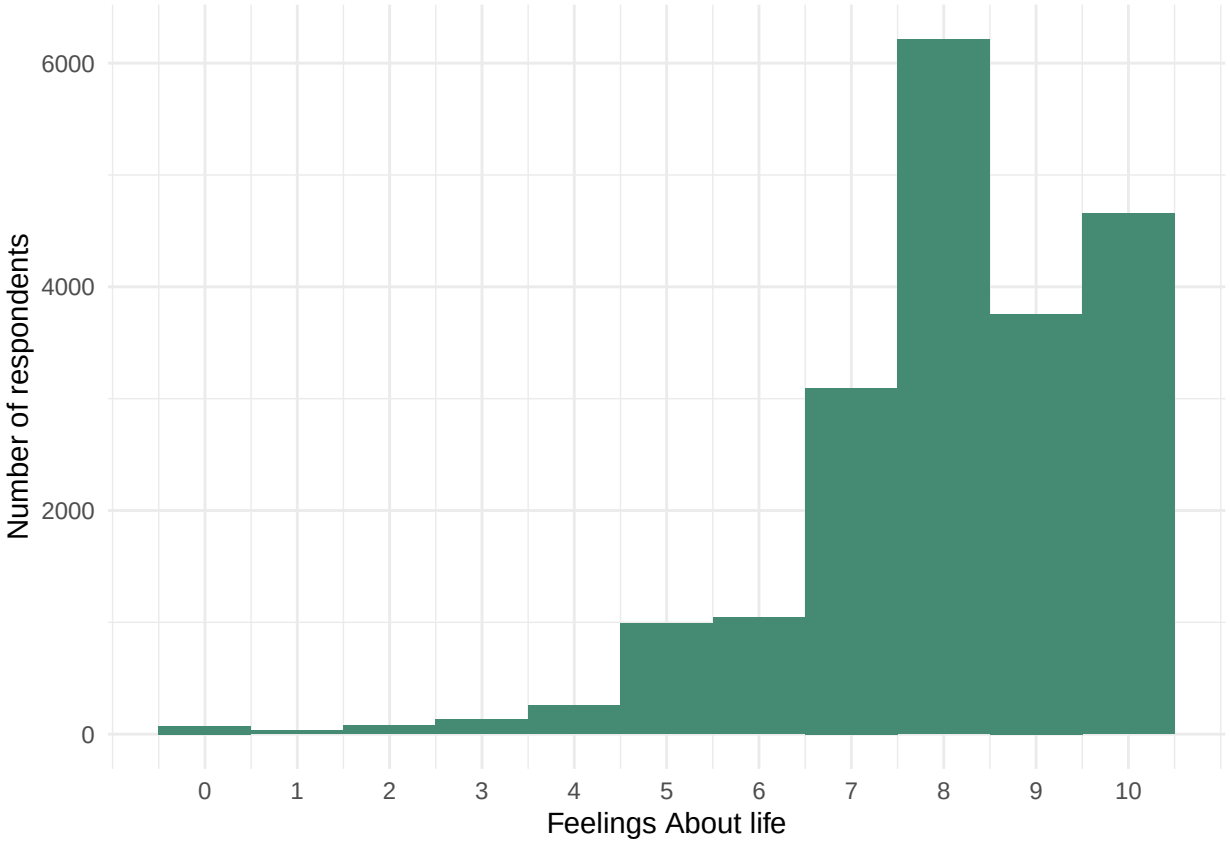

Figure 1: Number of Perceived Feelings About Life Responses

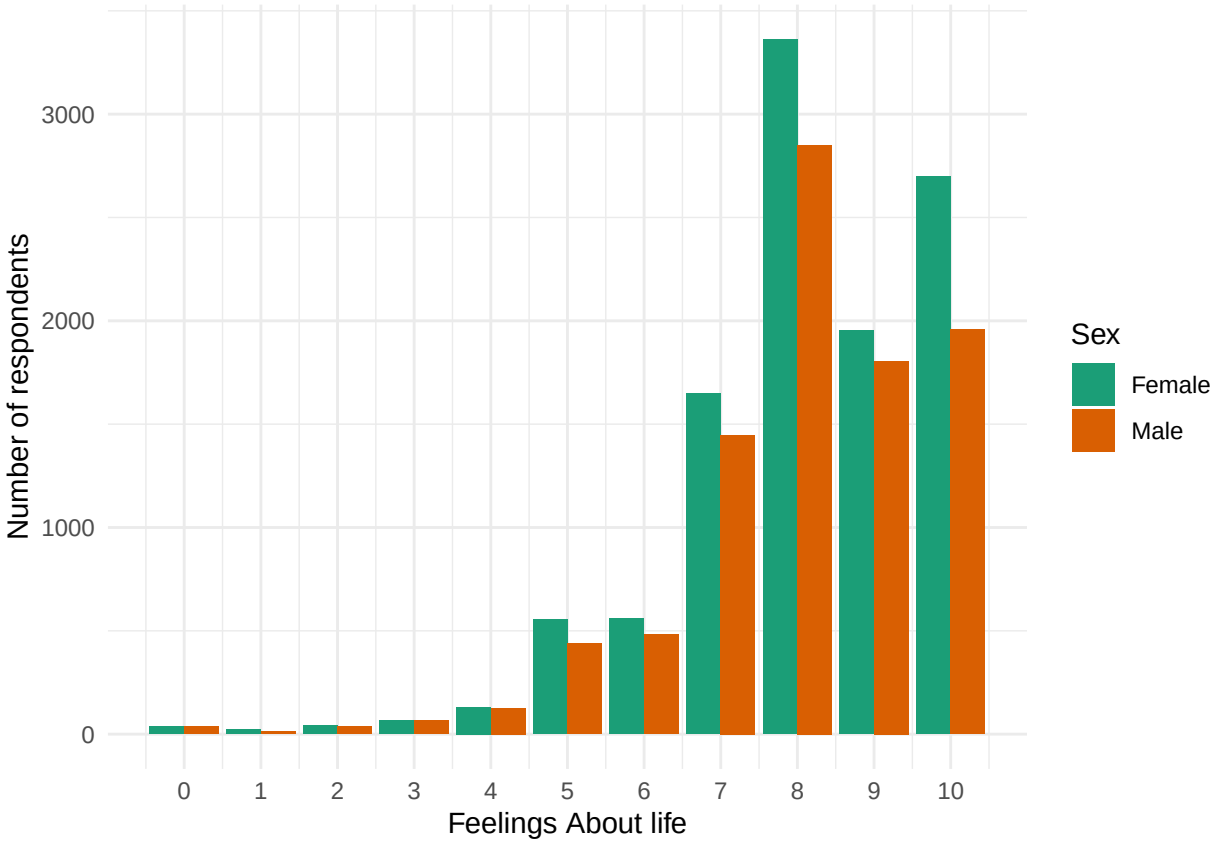

Figure 2: Number of Perceived Feelings About Life Responses by Sex

First variable I chose to examine was 'Sex.' Figure @ref(fig: feelingsvssex) shows the distribution of feelings on life in respect to sex. The histogram shows a nearly identical distribution on all numbers, and the female and the male respondents can be seen to have generally similar outlook on life. The only noticeable difference was in 10, where significantly more female respondents answered 10 compared to male respondents. There is not enough evidence to see a difference between the two sexes in the survey on how they perceive feelings about life.

Table 2: Mean Feeling about Life by Age Group

Age Group	Number of Respondents	Average Feeling about Life
15-24	1527	8.0
25-34	2804	8.0
35-44	3199	8.0
45-54	3061	8.0
55-64	4102	8.1
65-74	3628	8.2
>75	2281	8.3

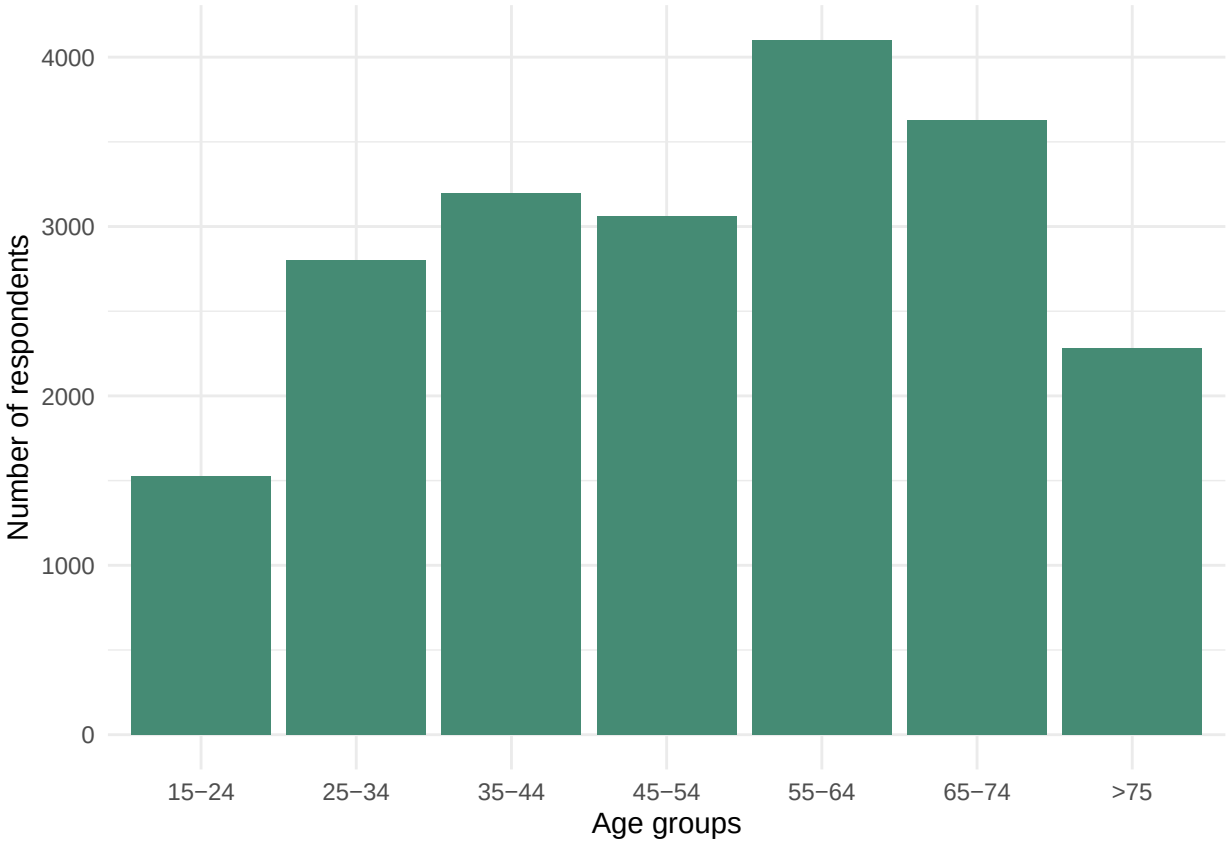

Figure 3: Number of Responses by Age Group

Next variable of interest in 'Age.' We will mutate this variable into categories with 10 year increments. In figure 3 we see the number of respondents for each age group. The age group of 55 years to 64 years has the most number of people at 4102, whereas the age group of 15 years to 24 years has the least number of people at 1527. In table 2, we can see the exact number of respondents for each age group and their mean value on feelings about life. Throughout the age groups, the mean is at 8.0 with a little increase towards the older population. Under this result, we can safely conclude that there is little to no correlation between age and feelings about life, at least until 55 years of age. It is worth noting that since it does increase with age past 55, it is possible that older people generally have more positive viewpoints on life and feelings about life have some correlation with age.

Table 3: Mean Feeling of Life by Family Income

Total Family Income	Number of Respondents	Average Feeling of Life
Less than $25,000	2775	7.5
$25,000 to $49,999	4345	7.9
$50,000 to $74,999	3696	8.1
$75,000 to $99,999	2921	8.2
$125,000 and more	4707	8.4
$100,000 to $ 124,999	2158	8.4

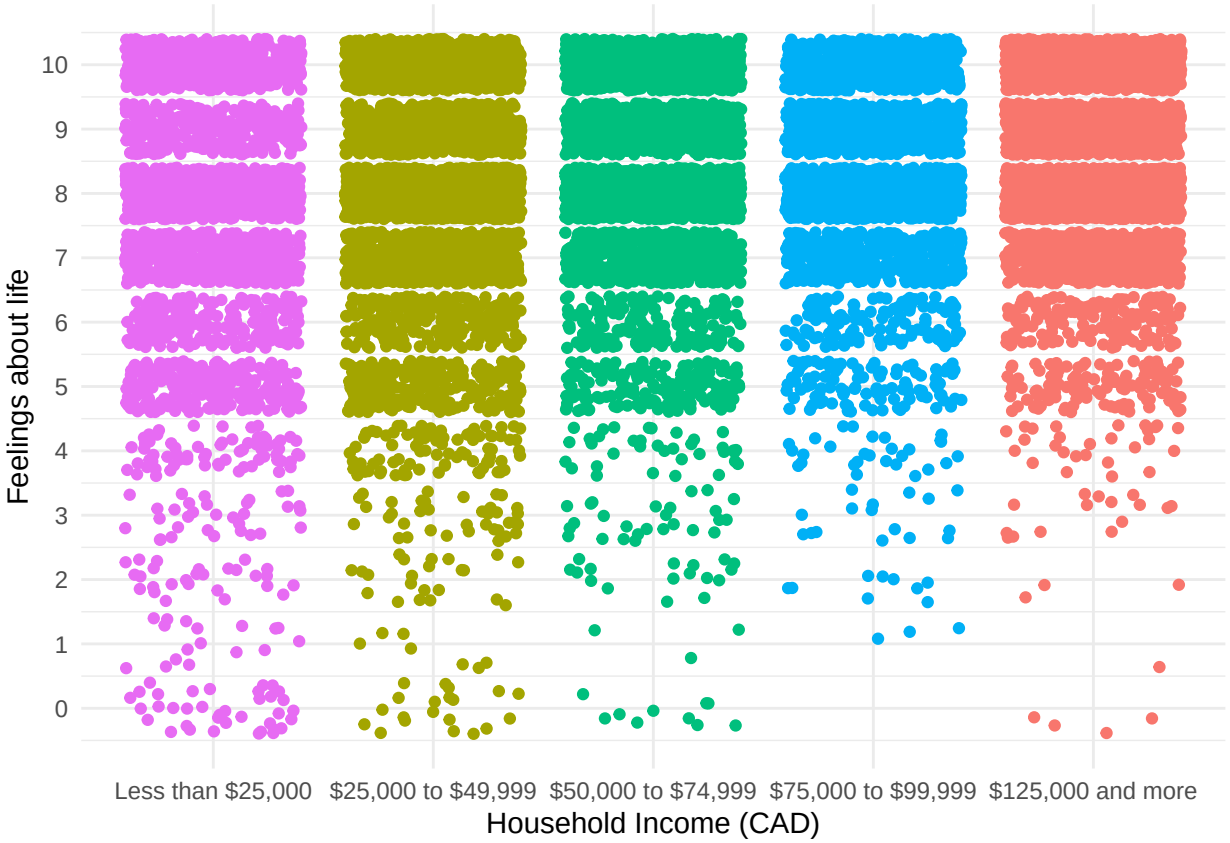

Figure 4: Number of Perceived Feelings About Life Responses by Household Income

We will then analyze the relationship with economical levels. The next variable of interest is 'Family Income.' The self-reported amount of income a household makes is split into categories ranging from less than 25,000 dollars to greater than 125,000 dollars. Table 3 shows the number of respondents in each income category and its average reported feelings on life. From the table, it is evident that average feelings on life gradually increase with household income. For people that earn less than 25,000 dollar in family income, their perceived feelings on life is at 7.5. However, for people that earn more than 100,000 dollars, their perceived feeling on life is almost a whole point higher at 8.4. Figure 4 shows the distribution of answers separated by family income. Overall, the majority of respondents seem to have a positive outlook on life and selected 5 and above regardless of income. One noticeable difference is that respondents that answered 3 or less increased as household income decreased. The graph also gives the impression that more people voted for 8 and above

in the higher income brackets compared to the lower income brackets. The economical level appears to be a reasonable indicator of feelings on life with some level of correlation.

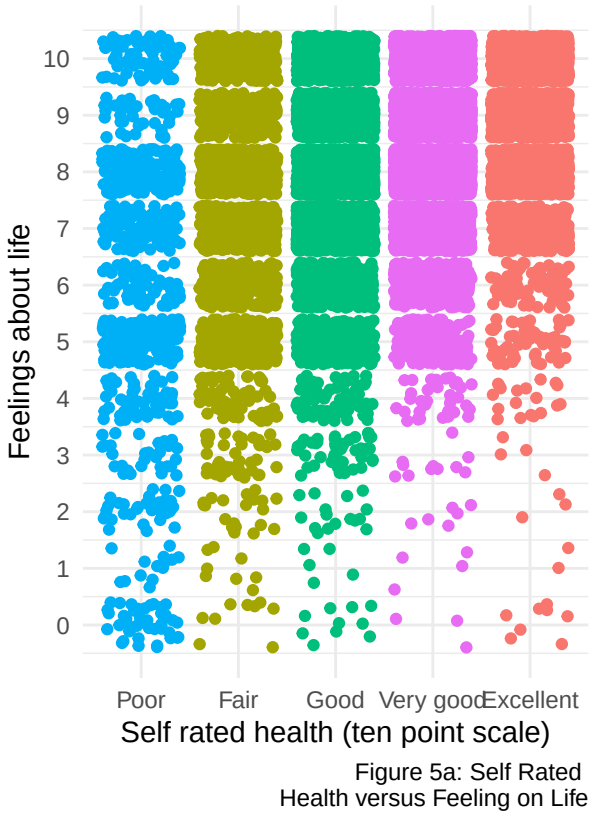

Figure 5a: Self Rated Health versus Feeling on Life

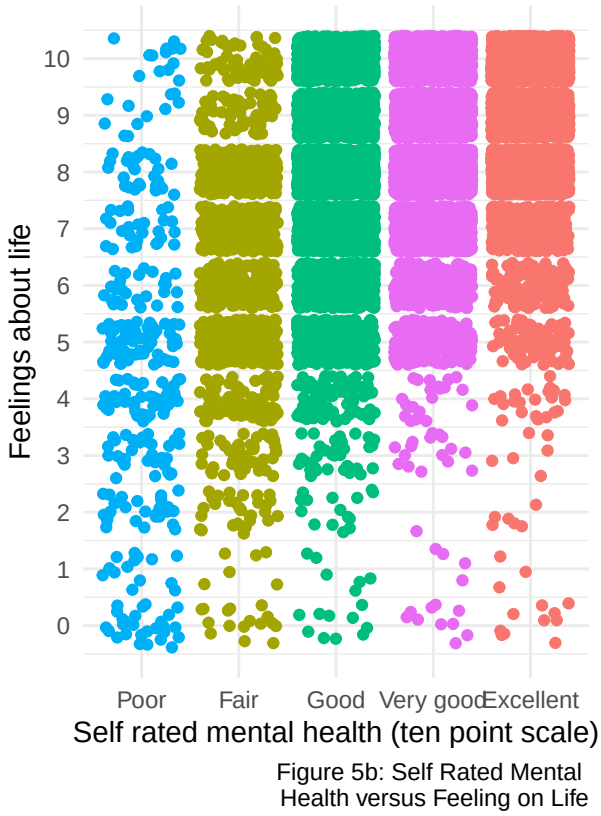

Figure 5b: Self Rated Mental Health versus Feeling on Life

Figure 5: Self Rated Health versus Feeling About Life and Self Rated Mental Health versus Feeling on Life

Finally, we will inspect two closely related variables: 'Self Rated Health' and 'Self Rated Mental Health.' These two variables report the self-examined status on the respondents' mental and physical health. Figure 5a shows the relationship between feelings on life and self rated health, and figure 5b shows the relationship between feelings on life and self rated mental health. In both of the graphs, responses of `Don't Know` and `NA` have been filtered out to accurately assess the possible correlation. Figure 5a displays that there is a clear correlation between self rated health and feelings on life. The respondents who submitted `Poor` on 'Self Rated Health' seem to have a dispersed distribution of feelings on life, with a great quantity below 5 and even a cluster of responses at 1. There also seems to be less number of people that answered 10. On the contrary, as the response for self rated health increases positively there are noticeably fewer responses below 5 on feelings about life. Additionally, figure 5b displays a similar trend in between the axes. Respondents with self rated mental health of `Poor` tend to have a more spread out distribution. However, the difference on figure 5b is more striking. The respondents who answered 6 and above on feelings on life while answering `Poor` seem to be very scarce, whereas there are a similar number of people who answered 4 and below. The overall graph also shows general increase in feelings on life responses as the self reported mental health improves, but the difference seems more drastic compared to figure 5a with self reported health. From the plots above we can conclude that health and mental health definitely seems to have correlation with one's viewpoint on life, although it is self reported and it is a subjective variable.

3 Results

Out of the variables we compared to feelings about life, 'Self Rated Health' and 'Self Rated Mental Health' showed the most amount of visible correlation. People with better self-perceived health and mental health generally had more positive outlook in life, whereas poor conditions of both variables reported a negative outlook. Economical status also displayed a detectable correlation, with higher family income produced less negative feelings. Age and sex did not produce any significant relations, although higher age showed a minor increase in feelings on life.

4 Discussion

4.1 Health and Happiness

To further analyze the relationship between physical and mental health and feelings about life, we will focus on one crucial aspect of positive feelings: happiness. Since we do not know the causal relation between the two variables, we need to be open to all of the options. One is that better health increases happiness. This is possible as negative emotions develop from feelings of powerlessness and pain. The other option is that happiness improves health. In many studies, happiness is seen to lower your blood pressure, improve sleep, lowers the risk of cardiovascular diseases, and reduce stress (Medicine, n.d.). Optimism and positivity are also known to be linked to the overall well-being of a person, and these reasons may be why we saw that the health had clear relationship with overall feelings about life.

4.2 Economic Status and Happiness

Does money buy happiness? This is a question often debated from scholarly articles to dinner tables. In one study in 2010, it was reported that happiness and wealth had direct relationship and happiness increased with income, but only up to about 75,000 dollars a year (Gaetano 2021). After the salary of 75,000 dollars, happiness did not increase thus a person making 100,000 dollars a year had similar levels of happiness as someone making 75,000 dollars a year. This is thought to be because although wealth and happiness does not have a causal relation, wealth removes a lot of financial stress which in turn increases satisfaction. In another study, income produced higher evaluation of life, but had no relationship with emotional well-being, which aligns with our outcomes (Kahneman 2010).

4.3 Old Age and Happiness

Last discussion point asks why there was an uptick in feelings about life with old age, whereas no trend was found with younger age. One possible explanation of this is related to health as discussed above. If happier people tend to be more healthy, then they will live longer on average, thus increasing the mean score for old age. One study found that happier people had a greater chance of living longer, and had greater chance living past 85 years of age (Topor 2019). It is plausible that these two variables do not have a direct causal relation but have a common causal variable such as health.

4.4 Weaknesses and next steps

There are few weaknesses with how the analysis was carried out. Self rated health and self rated mental health are two variables where the response is subjective and can have different criteria for each respondent. Each person might perceive same health levels different and record varying answers. This ambiguity create an uncertainty on whether these variables are truly fit for the assessment performed in this paper. More precise analyses would have been done with objective rating on physical and mental health performed by

people with professions on medical field. Moreover, many variables in the survey can be seen as a flawed figure in diversity and inclusiveness. In the sex variable, it only included the two sexes, male and female. If it included more genders it might show a different relations with feelings on life. Furthermore, our data is from the 2017 survey and it may not accurately represent the current situation. Lastly, there are limitations on analyses performed with only visual clues, lacking actual statistical analyses.

Next steps might include comparing feelings about life with other important variables such as family status and religion. We can also perform statistical analyses to find p-values and see the significance of each variables. This procedure would allow us to derive a more logically sound conclusion and let us accurately depict a picture on each variable's impact Canadian residents' happiness and satisfaction.

Appendix

A Supplementary Survey

A supplementary survey has been made to further assess the relationship inquired in the paper here.

Direct URL: https://forms.gle/dVZN2XFPy5deFeXx6

This survey aims to find relationships of Canadian residents' feelings about life with various variable such as age, economical status, and self rated health. Feel free to answer 'N/A' on any questions you feel uncomfortable answering.

There are 10 questions:

- Age
- Sex
- Self rated physical health
- Self rated mental health
- History of medication
- History of illness
- Household income
- Disposable income
- Disposable savings
- Feelings about life as a whole.

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