

Age and gender differences in loneliness prevalence during the COVID-19: Analyses on large cross-sectional surveys and emotion diaries



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Introduction

- Loneliness is a subjective experience of one's level of actual social connection not reaching one's desired level.
- Recent studies conducted identified the general decreasing pattern in the relationship between age and loneliness, and reported female gender as a vulnerability factor of loneliness.
- Since the outbreak of COVID-19, loneliness prevalence has greatly differed by age and gender. However, few studies investigated the joint effect of age and gender in loneliness.
- This study aims to investigate the impact of age, gender, and the interaction effect on loneliness during the COVID-19 pandemic.**

Materials

- Large public dataset collected during the COVID-19¹⁾: **Self-reported measures & 5 emotion diaries per participant**
- 4,017 responses** (age 20-79, 76% female)

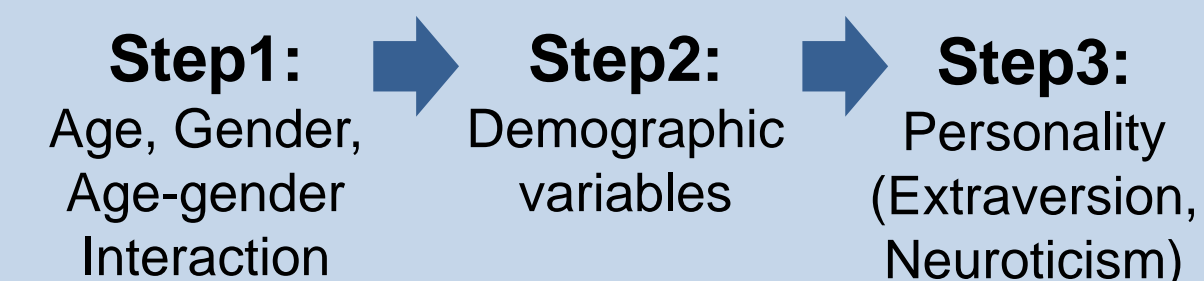
Demographic variables	Psychological variables
Age	Loneliness (ULS-6)
Gender	Extraversion (NPA)
Income level	Neuroticism (NPA)
Education level	
Household type	
COVID-19 related variables	
Remote working & Schooling	
Social Distancing	

- 20,730 diaries**

Methods

1. Statistical Analyses

- Hierarchical Regression:**



- T-test, ANOVA:** 5 age groups (20s, 30s, 40s, 50s, and 60s-70s) X 2 gender groups

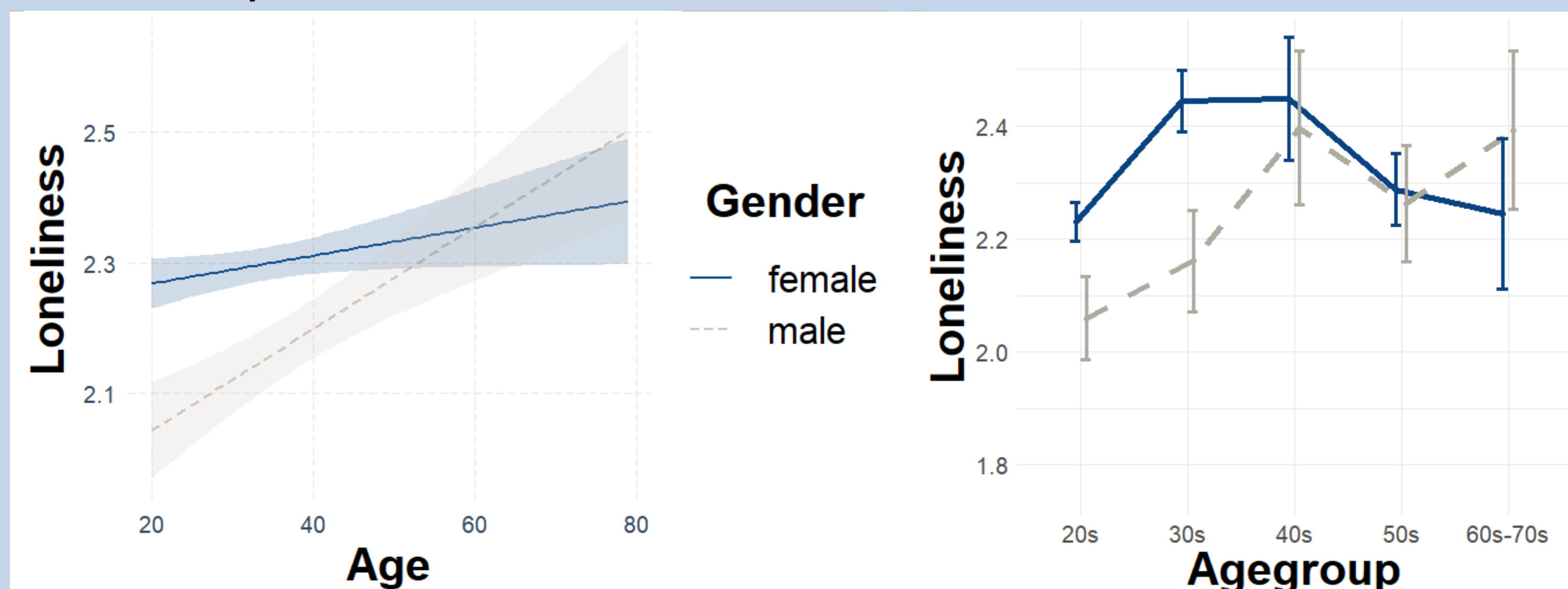
2. Text Analyses

To gain insight on the underlying causes of the differences among age-gender groups in loneliness

- N-gram Frequencies**
 - 30 most frequent Unigrams and bigrams per age-gender group, trigrams if needed
- Topic modeling**
 - Latent Dirichlet Allocation(LDA)
 - Coherence experiment to determine optimal model sets
 - Final models: those with high topic discriminability and interpretability among models with high coherence scores

Results

1. Statistical Analyses



- Age ($p=0.043$) and female gender ($p<0.001$) positively predicted loneliness, and the pattern of women being lonelier than men was reversed after turning 60 ($p=0.004$).
- Age ($p<0.001$) and age-gender ($p=0.030$) interaction remained significant when other risk factors were present.

- while females in their 20s and 30s were lonelier than those over 40s, male participants showed the opposite trend
- Gender differences in loneliness level were significant within the age of 20s ($p<.001$) and 30s ($p<.001$)

2. Text Analyses

- Women in 20s: work experiences and depression in job search**

ex) topic words: 'finding a position', 'interview', 'working from home', 'meeting'

- Women in 50s & 60s-70s: spirituality-related topics**

ex) topic words: 'church', 'worship'

- Women in 30s: hardships being a mother and difficulties getting in touch with other mothers**

ex) 'Child': 14th most frequent for females vs 56th for males
 "Preparing meals for my child staying home during the COVID-19 is painful."
 "My best friend is a mom raising a 5-year-old child. I can't visit her because I'm afraid I might spread the virus to the child."

- All age-gender groups except women in 60s-70s: anxiety and depression related topics**

Conclusion

- Our findings suggest the importance of age and gender interaction in loneliness prevalence and identify high loneliness groups.
- Although recent studies conducted across all age groups during the COVID-19 showed decreasing pattern in age-gender relationship, we found positive correlations between age loneliness. This may reflect cultural differences in the loneliness trend.
- Attention on younger women and middle-aged people is needed as a target group when establishing a valid intervention to settle loneliness problems in Korea during the pandemic.