



A Preliminary Analysis of Social and Emotional Loneliness in an Aging Population of San Vito de Coto Brus, Costa Rica

Nicholas Leahy¹, Melissa Rallo¹, Hima Konduru¹, Christine Wan¹, Lilliana Pedersen¹, Shania Bailey¹, Alexis Vetack¹, Wendel Mora², Shailvi Gupta M.D.¹, Carlos Faerron Guzmán M.D.^{1,2}

(1) University of Maryland School of Medicine (2) Interamerican Center for Global Health (CISG)

INTRODUCTION

Loneliness can be defined as a subjective state that arises as a response to the lack of a particular relationship that implies an imbalance in the desired and achieved level of socio-affective interaction¹. With advancing age comes an increase in the number of life events – such as the loss of a life partner, dwindling social networks, and deteriorating health conditions – that could perpetuate a state of loneliness¹. As trends in life expectancy increase on a global scale, the burden of loneliness is increasing and significant as loneliness can manifest itself in a variety of mental and physical consequences including heart disease, depression, and cognitive decline². Recent literature has divided loneliness into two subcategories: Social Loneliness and Emotional Loneliness. Social Loneliness (SL) occurs with the lack of a social network whereas Emotional Loneliness (EL) occurs with the absence of one close emotional relationship³. While loneliness has been studied in the USA and a variety of other communities around the world, there is need to study loneliness in the context of Latin American communities in Central America, particularly Costa Rica. The aim of the present study is to assess the prevalence and associated factors of Social and Emotional Loneliness (SEL) in a geriatric sample in the canton of Coto Brus, Costa Rica.

METHODS

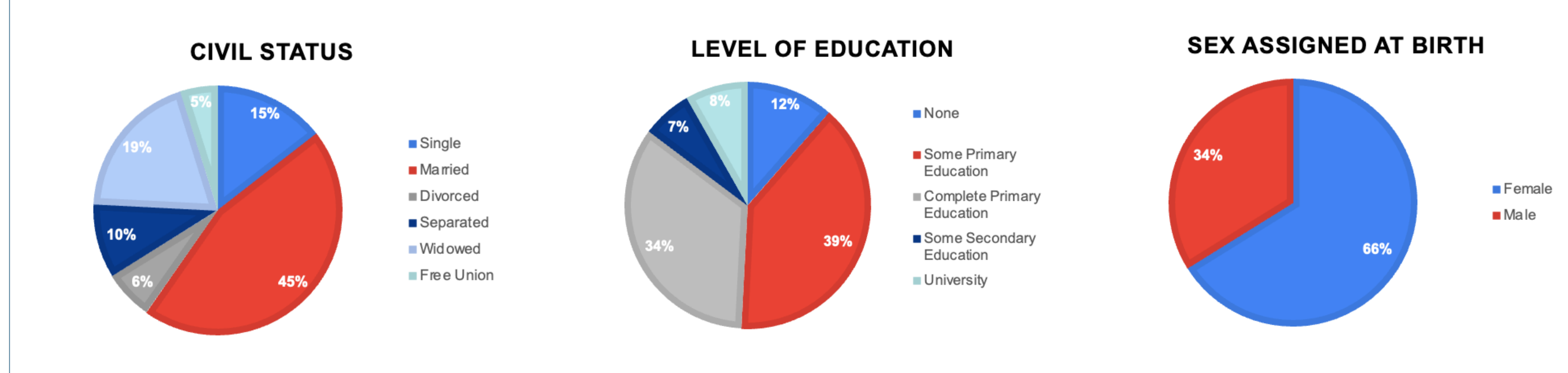
A cross-sectional study was conducted that sampled 62 adults aged 64 years or above in the canton of Coto Brus, Costa Rica. The primary instrument used to assess loneliness was a content-validated version of the 11-item De-Jong-Giervald Loneliness Scale⁴. In addition to this loneliness scale, there were a variety of general demographic variables that were also collected including age, sex assigned at birth, address, civil status, and level of education. Convenience sampling was used to recruit participants from community groups, nursing homes, and local gathering spaces. Investigators conducted face-to-face interviews in Spanish with the aid of interpreters and a public health worker from the town of San Vito. The standard scoring system available was used to compute scores for participants in the study. Items 2, 3, 5, 6, 9, and 10 received a score of 1 for responses of “More or Less,” or “Yes.” Items 1, 4, 7, 8, and 11 received a score of 1 for a response of “No.” Information of all study participants was collected anonymously, and each participant was given a de-identification code to ensure data remained anonymous through data analysis.

REGION



Figure 1 This map provides a geographic orientation of where the present study took place. The canton of Coto Brus is situated in the southern end of the country on the Panamanian border

DEMOGRAPHICS



RESULTS

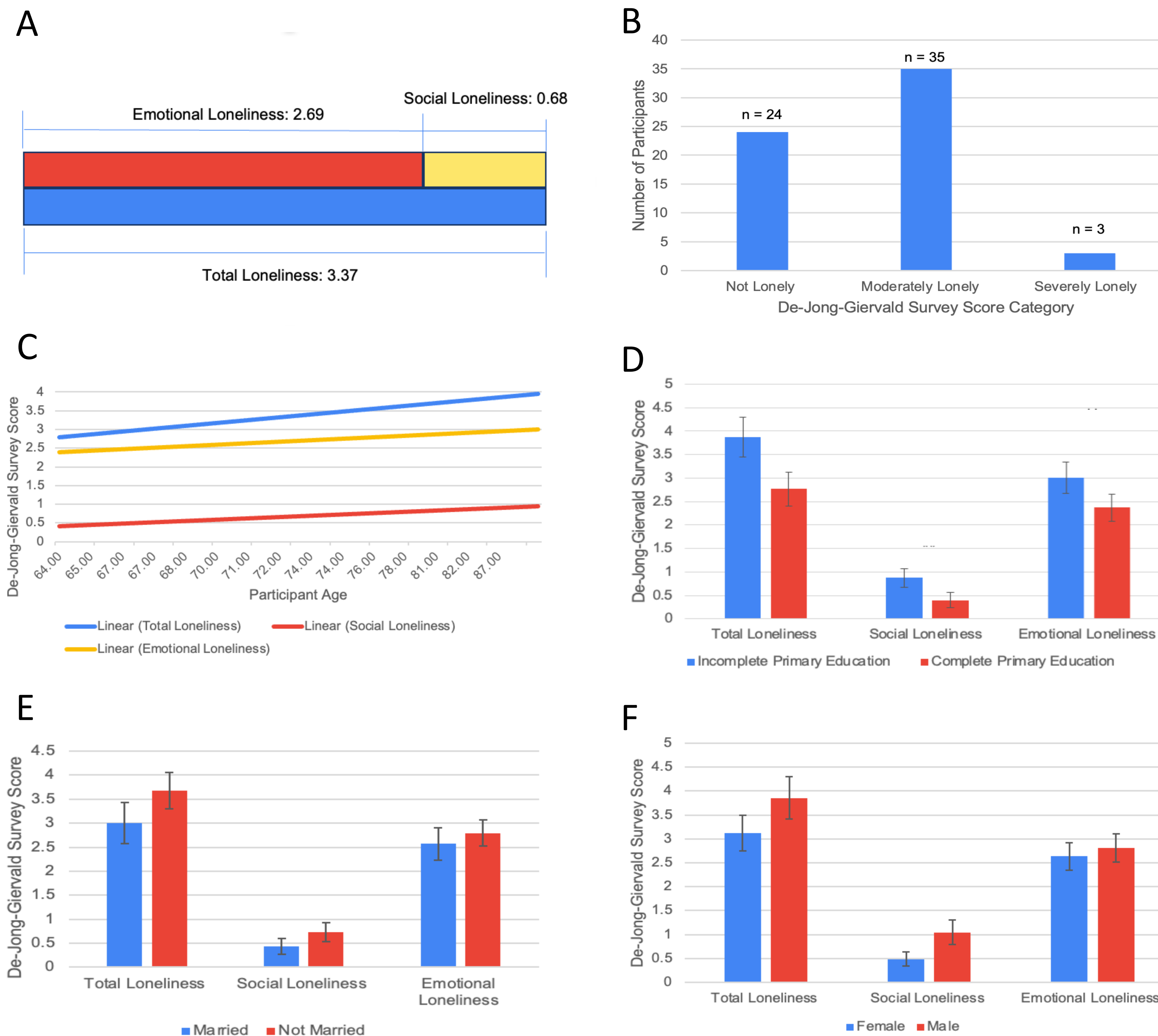


Figure 2 Descriptive statistics are displayed. (A) shows the average Total Loneliness (SEM = 0.287), Social Loneliness (SEM = 0.132), and Emotional Loneliness (SEM = 0.216) values for each of the participants. (B) displays the number of participants that fell into the De-Jong-Giervald score subcategories. Not lonely was classified as a TL score of 0-2; Moderately lonely was classified as a TL score of 3-8; and severely lonely was classified as a TL score of >8. (C) regression analysis of De-Jong-Giervald score to age is displayed for TL, EL, and SL. (D-F) compares TL, SL, and EL to some of the descriptive statistics that were collected in the study. (D) involves level of education and separates study participants on the basis of complete or incomplete primary education (based on completion of 6th grade). (E) involves civil status and separates study participants based on marriage alone. (F) involves sex assigned at birth. n=62 and bar graphs display mean +/- SEM.

KEY FINDINGS

There are a variety of key takeaways from the present study:

- EL comprised a much larger proportion of TL scores compared so SL (Fig. 2A), indicating that the loss of one close emotional attachment during the aging process has a profound effect on individual evaluation of loneliness
- Most of the study participants classified themselves as Moderately Lonely (Fig. 2B)
- While there are some associations that suggest that TL, EL, and SL increase with age (Fig. 2C), a larger sample size would be needed to draw any statistical conclusions
- Education Level seems to provide evidence of being protective factor in the development of loneliness with aging, as having a complete primary education appears to be linked with lower TL, SL, and EL scores (Fig. 2D)
- Surprisingly, marital status did not seem to be as protective in the development of loneliness with very similar levels of TL, SL, and EL between the two groups (Fig. 2E)
- There appears to be an association between sex assigned at birth and loneliness as identification with the female sex appears to be linked with lower levels of TL and SL scores, with negligible changes in EL (Fig. 2F).

CONCLUSION

Overall, the results could indicate a stronger association of loneliness linked to missing a life partner (EL) compared to loneliness linked to having a smaller social network (SL) in this elderly population in Costa Rica. This data can inform local community leaders in the canton of Coto Brus that while community members may feel supported with a variety of outlets for everyday fellowship, additional support is needed to support those community members through the loss of a close emotional attachment (life partner, sibling, close friend). One important pitfall of the study to note is that the method of convenience sampling could have preferentially interviewed elderly individuals who have a larger social network, and therefore lower SL and TL scores, since we sampled community groups and nursing homes. This data has also yielded many directions for future research. A larger sample size is needed to draw any statistical conclusions between loneliness and demographic factors such as age, level of education, and sex assigned at birth. It would also be critical to explore any associations between loneliness and any downstream comorbid mental and physical health conditions.

LITERATURE

1. Montero, Maria, Lopez Lena, and Juan Jose Sanchez-Sosa. "Loneliness as a Psychological Phenomenon: A Conceptual Analysis." *Mental Health* 24, no. 1 (2001): 19-27.
2. Salas, MS, & Ceminari, Y. (2021). Isolation, loneliness and care of older adults. Reflections on isolation as a policy of care. *Annals in Gerontology*, 13 (13), 252-263.
3. Latorre, Maria Isabel León, María Martos Enrique, and Teresa Galiana Camacho. "Communication techniques in the elderly in the face of social isolation and loneliness." *Spanish Journal of Health Communication* (2020): 268-277.
4. De Jong Gierveld, J., & Van Tilburg, T. (2010). *The De Jong Gierveld short scales for emotional and social loneliness: tested on data from 7 countries in the UN generations and gender surveys.* *European Journal of Ageing*, 7(2), 121–130.
5. Leahy, John, Kerry Grimm, Clare Aslan, Melissa Mark, Sarah Frey, and Robyn Bath-Rosenfeld. "Landowners' Socio-Cultural Valuation of Ecosystem Services Provided by Trees in Costa Rican Agricultural Landscapes." *Environmental Management* 67 (2021): 974-987

Acknowledgements: A special thank to Andrea Zuniga, Dr. Pablo Ortiz, and everyone at Hands for Health who supported the research assistants through the duration of data collection.

Support from the Alicia and Yaya Fellowship, UMB Center for Global Engagement, and the University of Maryland School of Medicine