Loneliness in the time of COVID

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Abstract

In the effort to limit the transmission of COVID-19, countries around the world have instigated extended periods of restricted movement that has significantly impacted work, leisure, and social interaction. An indirect outcome of these restrictions is increased loneliness and social isolation. Here, data from an online survey carried out in the latter part 2020/early 2021, demonstrated that evening-type is associated with increased odds of reporting self-perceived loneliness, but with no evidence for a similar association in neither-types. What future working and leisure patterns (the 'new normal') will look like is unclear. Nevertheless, the current data suggest eveningness should be a consideration in any interventions designed to reduce the impact of loneliness on physical and mental health.

Key Words: Covid-19 lockdown, Chronotype, loneliness, social interaction, survey research

Introduction

The outbreak and transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has resulted in an unprecedented series of 'lockdowns' in many countries worldwide. During these periods, movement is restricted, substantially impacting on work patterns, livelihoods, leisure pursuits, and social interactions. One potential indirect effect of these restrictions is increased loneliness. A number of studies have reported increased levels of loneliness, and a recent government survey carried out in the UK (*Wave 8* 2020, p. 8) suggests that a quarter of the people surveyed reported feeling lonely or isolated. It is unclear, however, if self-perceived loneliness differentially impacts individuals according to diurnal preference, i.e., chronotype.

Methods

Ethical approval to carry out this study was obtained from Brunel University London Research Ethics Committee (Reference Nº: 25515-MHR-Oct/2020- 28168-1), and participants provided informed consent prior to completing the online survey. A total of 154 participants (81 of which were students), 118 females, mean age = 31.34, SD = 15.36, range 18-75 y) completed the survey between 13/11/2020 and 29/01/2021. Participants were excluded if they endorsed a previous or current mental health problem diagnosed by a professional, had incomplete data, or were <18 y of age. Diurnal preference was assessed using the Reduced Morningness-Eveningness Questionnaire (rMEQ, Adan & Almirall 1991), with participants scoring ≤ 11 considered evening-types (ET), 12 – 17 neither-types (NT), and ≥ 18 morning-types (MT). Sleep quality was determined using a simple Likert-type response scale where participants could rate their sleep as very poor, poor, average, good, or excellent. Self-perceived loneliness was measured using the Three-item Loneliness Scale (Hughes et al. 2004). The scores for each individual question were summed to give a

possible range of scores from 3 to 9 with participants scoring ≥ 6 rated as lonely (Steptoe et al. 2013). The association between diurnal preference and self-perceived loneliness was determined using a binary logistic regression model after adjusting for age, sex, and sleep quality. The odds ratio and corresponding 95% confidence interval (CI) were obtained to evaluate any associations with a threshold for statistical significance of $p < 0.05$.

Results and Discussion

Across the whole sample, 50% of participants was assessed as feeling lonely. Stratified by diurnal preference, 34% of morning-types, 46% of neither-types, and 65% of evening-types endorsed feeling lonely. Logistic regression adjusted for age, sex, and sleep quality demonstrated that ET was associated with increased odds of reporting self-perceived loneliness (MT as referent: β = 1.09, SE = 0.52, $Z = 2.07$, $p = .038$, OR = 2.97, 95% CI[1.06, 8.30]). There was no evidence to suggest an association between NT and loneliness (β = 0.41, SE = 0.47, $Z = 0.88$, $p = .38$, OR = 1.51, 95% CI [0.6, 3.77]).

In the current study, it was observed that a more evening profile was associated with increased odds for reporting perceived loneliness. Lockdown restrictions, implemented to varying to degrees since early in 2020 and in response to the COVID-19 pandemic, have left individuals feeling more alone and more isolated. Eveningness (Fabbian et al. 2016; Kivelä et al. 2018) and social isolation have been linked to reduced physical and mental health (Smith & Victor, 2019); but, to the best of our knowledge, no study to-date had investigated loneliness as a function of diurnal preference in a healthy adult sample. The direction of causality between eveningness, loneliness, and maintenance of mental and physical health, and how this may be impacted by COVID-19, cannot be inferred from the current observational study. There is evidence that loneliness and social isolation represent risk factors for poor physical health outcomes (Valtorta et al. 2016). However, Victor et al. (2005) also argued that poor health is a risk factor for loneliness (Victor et al. 2005). Similarly,

biases in emotional processing and emotion regulation – recognised risk factors for depression – have been reported in never-depressed evening-type individuals (Berdynaj et al. 2016; Berg et al. 2018; Horne et al. 2017; Watts & Norbury 2017), and findings of meta-analyses (Au & Reece 2017) suggest that the strength of the association between eveningness and depressive symptomatology is similar in depressed and non-depressed groups. Combined, (Au & Reece 2017; Berdynaj et al. 2016; Berg et al. 2018; Horne et al. 2017; Watts & Norbury 2017), these reports indicate eveningness as a risk factor for depression. The current data, suggesting an association between increased loneliness and eveningess in healthy adults, adds to this literature indicating that loneliness may be an additional factor contributing to poorer physical and mental health outcomes in evening-type individuals.

The underlying factors that contribute to increased loneliness in evening-types are likely multifactorial. Opportunities for physical interaction have been diminished for all during the current movement restrictions, but this may have had a more marked impact on evening-types. Eveningness has been associated with problematic internet use (PIU, Przepiorka et al. 2020), and PIU is associated with depression (Przepiorka et al. 2020), anxiety (Boursier et al. 2020), and it has been reported as a dysfunctional emotional-regulation strategy (Schimmenti et al. 2019). For evening-types, use of social media to counter feelings of loneliness may in fact cultivate more negative outcomes in a feedback loop reinforcing feelings of loneliness and isolation.

What future working and leisure patterns will look like is unclear. Nevertheless, the current data suggest eveningness should be a consideration in any interventions designed to reduce the negative impact of loneliness on physical and mental health.

References

Adan, A., & Almirall, H. 1991. Horne & Östberg morningness-eveningness questionnaire: A reduced scale. Pers Indiv Differ. 12(3), 241–253. https://doi.org/10.1016/0191-8869(91)90110-W

Au, J., & Reece, J. 2017. The relationship between chronotype and depressive symptoms: A meta-analysis. J Affect Disorders. 218, 93–104. https://doi.org/10.1016/j.jad.2017.04.021

Berdynaj, D., Boudissa, S. N., Grieg, M. S., Hope, C., Mahamed, S. H., & Norbury, R. 2016. Effect of chronotype on emotional processing and risk taking. Chronobiol Int. 1–13. https://doi.org/10.3109/07420528.2016.1146739

Berg, J. F. V. den, Kivelä, L., & Antypa, N. 2018. Chronotype and depressive symptoms in students: An investigation of possible mechanisms. Chronobiol Int. 35(9), 1248–1261. https://doi.org/10.1080/07420528.2018.1470531

Boursier, V., Gioia, F., Musetti, A., & Schimmenti, A. 2020. Facing loneliness and anxiety during the COVID-19 iIsolation: The role of excessive social media use in a sample of Italian adults. Front Psychiatry, 11. https://doi.org/10.3389/fpsyt.2020.586222

Fabbian, F., Zucchi, B., Giorgi, A. D., Tiseo, R., Boari, B., Salmi, R., Cappadona, R., Gianesini, G., Bassi, E., Signani, F., Raparelli, V., Basili, S., & Manfredini, R. 2016. Chronotype, gender and general health. Chronobiol Int. 1–20. https://doi.org/10.1080/07420528.2016.1176927

Horne, C., Mary, Marr-Phillips, S. D. M., Jawaid, R., Gibson, E. L., & Norbury, R. 2017. Negative emotional biases in late chronotypes. Biol Rhythm Res. 48(1), 151–155. https://doi.org/10.1080/09291016.2016.1236461

Hughes, M. E., Waite, L. J., Hawkley, L. C., & Cacioppo, J. T. 2004. A short scale for measuring loneliness in large surveys. Res Aging. 26(6), 655–672. https://doi.org/10.1177/0164027504268574

Kivelä, L., Papadopoulos, M. R., & Antypa, N. 2018. Chronotype and psychiatric disorders. Curr Sleep Med Rep. https://doi.org/10.1007/s40675-018-0113-8

Przepiorka, A., Blachnio, A., & Cudo, A. 2020. Relationships between morningness, Big Five personality traits, and problematic Internet use in young adult university students: Mediating role of depression. Chronobiol Int. 1–12. https://doi.org/10.1080/07420528.2020.1851703

Schimmenti, A., Musetti, A., Costanzo, A., Terrone, G., Maganuco, N. R., Aglieri Rinella, C., & Gervasi, A. M. 2019. The unfabulous four: Maladaptive personality functioning, insecure attachment, dissociative experiences, and problematic internet use among young adults. Int J Ment Health Ad. https://doi.org/10.1007/s11469-019-00079-0

Smith, K. J., & Victor, C. 2019. Typologies of loneliness, living alone and social isolation, and their associations with physical and mental health. Ageing Soc. 39(8), 1709–1730. https://doi.org/10.1017/S0144686X18000132

Steptoe, A., Shankar, A., Demakakos, P., & Wardle, J. 2013. Social isolation, loneliness, and all-cause mortality in older men and women. P Natl Acad Sci USA, 110(15), 5797–5801. https://doi.org/10.1073/pnas.1219686110

Valtorta, N. K., Kanaan, M., Gilbody, S., Ronzi, S., & Hanratty, B. 2016. Loneliness and social isolation as risk factors for coronary heart disease and stroke: Systematic review and meta-analysis of longitudinal observational studies. Heart. 102(13), 1009–1016. https://doi.org/10.1136/heartjnl-2015-308790

Victor, C. R., Scambler, S. J., Bowling, A., & Bond, J. 2005. The prevalence of, and risk factors for, loneliness in later life: A survey of older people in Great Britain. Ageing Soc. 25(6), 357–375. https://doi.org/10.1017/S0144686X04003332

Watts, A. L., & Norbury, R. 2017. Reduced effective emotion regulation in night owls. J Biol Rhythms. 32(4), 369–375. https://doi.org/10.1177/0748730417709111

Wave 8: Late November 2020. Mental Health Foundation. https://www.mentalhealth.org.uk/our-work/research/coronavirus-mental-health-pandemic/key-statistics-wave-8

Declaration of Interest:

The author reports no conflicts of interest. The author was solely responsible for the content and writing of the paper.

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