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BACKGROUND

- Spousal bereavement commonly occurs in the elderly population which is linked to mortality and morbidity from inflammatory diseases such as CVD
- Spousal bereavement has also been shown to have a significant impact on sleep quality.
- Rumination has been proposed as a risk factor for poor grief coping following bereavement which may lead to and predict symptoms of depression as well as a range of sleep disorders.

OBJECTIVE

In this study we aimed to

- Identify if bereaved individuals with higher levels of poor sleep quality will exhibit elevated levels of inflammation.
- Identify if individuals with greater levels of grief rumination and poor sleep quality will have higher levels of inflammation when compared to individuals with less rumination

METHODS

SAMPLE

99 bereaved individuals from Project Heart study

- $M=68.94$ age, $SD=10.96$

MEASURES

We adjusted for:

- Age
- Sex
- Education
- BMI
- Statins
- Antidepressant use
- Smoking status
- depression
- Days since passing
- Comorbidities

OUTCOMES

We assessed inflammation via pro-inflammatory T cell-derived cytokines:

- IFN- γ
- TNF- α
- IL-6
- IL17-A
- IL-2



RESULTS

Table 1.
Demographics and Descriptive Characteristics of Study Sample

Variables	Mean (SD) or Number (Percentage)
Total N	99
Sex, % female	70 (70.7%)
Statin use, % yes	40 (40.4%)
Smoking status, % yes	5 (5.1%)
Antidepressants, % yes	24 (24.2%)
PSQI, total score	7.34 (3.57)
URGS, total score	37.35 (11.41)
CES-D, total score	16.56 (10.85)
CCI, total score	0.25 (0.94)
Age	68.94 (10.69)
Day since passing	85.54 (17.95)
BMI	26.91 (4.86)

Figure 1. Unadjusted Regression analysis for IL-2 and Daytime Dysfunction

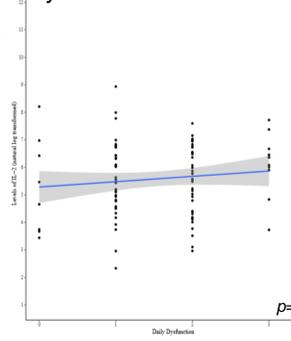


Figure 2. Unadjusted Regression analysis for IL-6 and Daytime Dysfunction

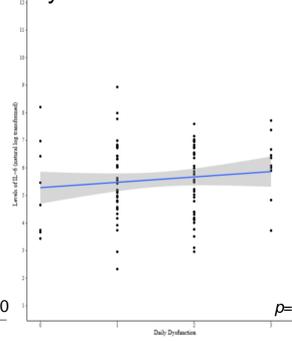


Figure 3. Unadjusted Regression analysis for IL-17A and Daytime Dysfunction

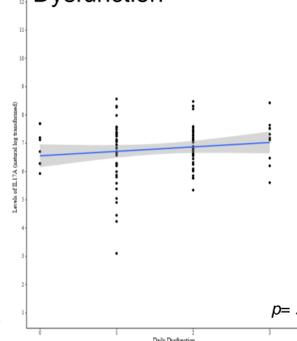


Figure 4. Unadjusted Regression analysis for IFN- γ and Daytime Dysfunction

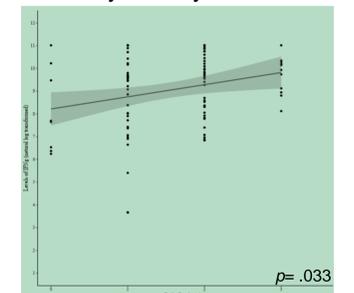
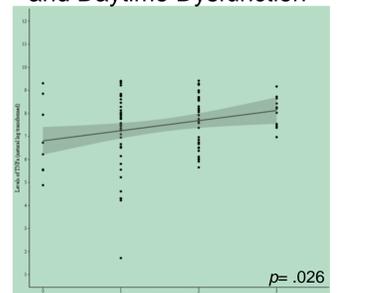


Figure 5. Unadjusted Regression analysis for TNF- α and Daytime Dysfunction



- Sleep quality was not associated with elevated levels inflammation in the bereaved population in both the unadjusted ($p = .65$) and adjusted models ($p = .13$).
- When individual components of sleep quality were assessed, daytime dysfunction was moderately associated with the composite proinflammatory index. When individual cytokines were assessed, daytime dysfunction was significantly predictive of TNF- α ($p = .026$) and IFN- γ ($p = .033$). These relationships, however, did not hold in adjusted models.
- In moderation analyses, the interaction between sleep quality and rumination was not significantly predictive of inflammation in neither the unadjusted or adjusted models.

DISCUSSION

- Sleep quality is not associated with markers of inflammation in recently bereaved individuals and elevated inflammation.
- Future studies should examine the association between inflammation and sleep quality through objective measures in the bereaved population.