Association Between Self-Reported Sleep Disturbance and Other symptoms in Patients with Advanced Cancer

Delgado-Guay, M., Yennurajalingam, S., Parsons, H., Palmer, L., Bruera, E.
Reference: Delgado-Guay, et al. (2011). Association between self-reported sleep disturbance and other symptoms in patients with advanced cancer. *Journal of pain and symptom management*, *41*(5), 819-827

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Abstract

Context.

Sleep disturbance (SD) is a significant source of distress for patients with cancer. Studies of patients with advanced cancer receiving palliative care to identify symptoms associated with the severity of SD are limited.**Objectives**.In this study, we sought to identify the symptoms measured by the Edmonton Symptom Assessment Scale (ESAS) that are associated with SD, as measured by the Pittsburgh Sleep Quality Index (PSQI). Secondary aims of the study were to determine the association between occurrences of SD with occurrences of other symptoms and screening performance of the ESAS-Sleep item against the PSQI. **Methods.**We reviewed the completed ESAS and PSQI assessments of 101 patients with advanced cancer who were receiving palliative care and had been admitted to prospective clinical trials previously initiated by us. Patients with a PSQI score of ≥5 were considered to have an SD. The frequency and severity of the ESAS symptoms items, their correlation with each other, the PSQI score, and the screening performance of the ESAS-Sleep item were calculated.**Results**The median age of patients was 60 years. Most were white non-Hispanic (73%), had lung or breast cancer (41%), and were diagnosed with SD (85%). The PSQI score was correlated with the ESAS items of pain (r 1⁄4 0.27, P 1⁄4 0.006), dyspnea (r 1⁄4 0.25, P < 0.001), well-being (r 1⁄4 0.35, P < 0.0001), and sleep (r 1⁄4 0.44, P < 0.0001). Compared with patients without SD, those with SD were more likely to report pain (P 1⁄4 0.0132), depression (P 1⁄4 0.019), anxiety(P 1⁄4 0.01), and a poorer sense of well-being (P 1⁄4 0.035). An ESAS-Sleep item cutoff score of >3 (of 10) resulted in a sensitivity of 74% and a specificity of 73%.**Conclusion**.SD is associated with increased frequency of pain, depression, anxiety, and a worse sense of well-being. These four symptoms should be assessed in all patients with advanced cancer with a complaint of SD. The ideal cutoff point of the ESAS-Sleep item for screening for SD is a score of >3. More research is needed to better characterize this frequent and distressing syndrome.

Strengths:

Uses validated clinical research tools (PSQI and ESAS),
good representation of palliative population.

Weaknesses:

Prospective research trail,
Identified SD associated with pain, depression, anxiety and sense of wellbeing but unable to determine if they are causes or consequences due to cross sectional nature of study.
Disproportionate amount of subjects in each group; n=15 without SD vs. n=86 with SD.

Relevance to Patient Care: Sleep disturbance is a common concern in the palliative population that may worsen symptoms experienced by patients. Physicians can explore and

address causes of SD in the hope that it will allow for better symptom management of pain, depression, anxiety and wellbeing. Further research is required to better understand mechanisms in SD and development of treatments based on causation and identifying possible risk factors.

Table 4
Occurrence and Intensity of Symptoms in Advanced Cancer Patients With and Without SD

	Subjects, No. (%)		*P*-value	ESAS Score, Median (Range)		*P*-value
ESAS Symptom	Without SD (PSQI Score <5) ($n = 15$)	With SD (PSQI Score ≥5) ($n = 86$)	χ^2 Test[a]	Without SD (PSQI Score <5) ($n = 15$)	With SD (PSQI Score ≥5) ($n = 86$)	Wilcoxon Rank-Sum Test[b]
Appetite	12 (80)	78 (91)	0.219	5 (3.5–7)	5 (3–7)	0.896
Drowsiness	8 (47)	64 (75)	0.116	3.5 (2.5–5.5)	5 (3–7)	0.483
Fatigue	15 (100)	85 (99)	>0.999	5 (3.5–7)	6 (5–8)	0.148
Nausea	10 (67)	46 (53)	0.149	5 (3–6)	3 (1–5)	0.215
Pain	9 (60)	76 (88)	0.013[c]	4 (3–4)	4.5 (3–7)	0.585
Dyspnea	9 (60)	56 (65)	0.065	2 (2–3)	5 (2–6)	0.389
Well-being	13 (87)	84 (98)	0.103	4 (2–4)	5 (3–6)	0.036[c]
Depression	6 (40)	61 (71)	0.019[c]	3 (2–5)	3 (2–6)	0.825
Anxiety	5 (33)	57 (66)	0.016[c]	3 (2–5)	4 (3–7)	0.540

[a] *P*-value is for number of subjects without SD vs. with SD.
[b] *P*-value is for median ESAS score for subjects without SD vs. with SD.
[c] $P < 0.05$.

Table 5
Screening Performance of the ESAS-Sleep Item According to the PSQI[a]

Score	Sensitivity	Specificity	PPV	NPV
0	1	0	0.85	0
≥1	0.86	0.4	0.9	0.54
≥2	0.86	0.53	0.91	0.4
≥3	**0.74**	**0.73**	**0.94**	**0.33**
≥4	0.64	0.93	0.98	0.31
≥5	0.55	0.93	0.98	0.26
≥6	0.4	0.93	0.97	0.21
≥7	0.27	0.93	0.96	0.18
≥8	0.19	0.93	0.94	0.17
≥9	0.08	0.93	0.88	0.15
10	0.04	0.93	0.8	0.14

[a] PSQI criteria for SD: score of ≥5.