

## **Errata**

Unfortunately, we have revealed a minor mistake in the published papers II and III. As mentioned in the methods section, the questionnaire for measuring seasonality (the Global Seasonality Score - GSS) yields a score between 0-24. The cut-off levels of the GSS were set to <8 for low seasonality, 8-10 for moderate seasonality and  $\geq 11$  for high seasonality. When regrouping the GSS values into the three seasonality groups, however, the subjects scoring 8 on GSS were, by mistake, not included in the moderate seasonality group (or in any other group). We have redone every analysis including the subjects scoring 8 on the GSS, and the new results are slightly different from the published results.

### **Most important differences in paper II**

In Table 1 (prevalence of anxiety and depression in different seasonality groups), there were slightly different numbers for the moderate seasonality group. In figure 3 (depicting mean anxiety and depression subscales in the different seasonality groups) had minor changes. There were no statistical significant differences between the published and corrected analyses.

### **Most important changes in paper III**

In Table 5 on the effect of season of reporting, the corrected analyses of season x GSS did not give significant effects for napping and sleep duration weekdays in men. In women, the main effect of season on insufficient sleep was not significant. In Figure 1 and abstract: The prevalence of sleep deficiency more or equal to 1 hour in the GSS 8-10 group were 14% in men and 17% in women in the corrected analyses.

The main results, discussion and conclusions of the papers are unaffected by the corrected analyses. Corrected results are used in the text, tables and figures of this thesis. Corrected tables and figures to the published articles are included on the following pages, and the journals have been notified about the errata.

**CORRECTED TABLE 1, (PAPER II) Prevalence of anxiety, depression and comorbid anxiety and depression (derived from the Hospital Anxiety and Depression Scale) in different seasonality groups (derived from the Global Seasonality Score, the central feature of the Seasonal Pattern Assessment Questionnaire). The Kruskal Wallis test is used for comparisons between seasonality groups.**

Psychiatric symptom	Gender	Low Seasonality <sup>a</sup>	Moderate Seasonality <sup>b</sup>	High Seasonality <sup>c</sup>	Kruskal-Wallis statistics
					$\chi^2$ (2)
Anxiety <sup>d</sup>	Men	7.1% (140/1970)	16.3% (89/546)	21.9% (114/520)	106.7, p<0.001
	Women	10.2% (462/4540)	19.5% (259/1330)	26.0% (386/1484)	244.1, p<0.001
Depression <sup>e</sup>	Men	4.2% (80/1910)	8.0% (40/497)	7.7% (34/440)	16.9, p<0.001
	Women	2.1% (89/4167)	3.0% (33/1104)	6.6% (78/1176)	61.7, p<0.001
Comorbid anxiety and depression <sup>f</sup>	Men	4.6% (99/2156)	7.7% (49/636)	11.6% (73/628)	41.8, p<0.001
	Women	3.8% (183/4823)	6.4% (93/1458)	12.8% (229/1793)	179.7, p<0.001

<sup>a</sup>Global Seasonality Score (GSS) < 8

<sup>b</sup>GSS 8-10

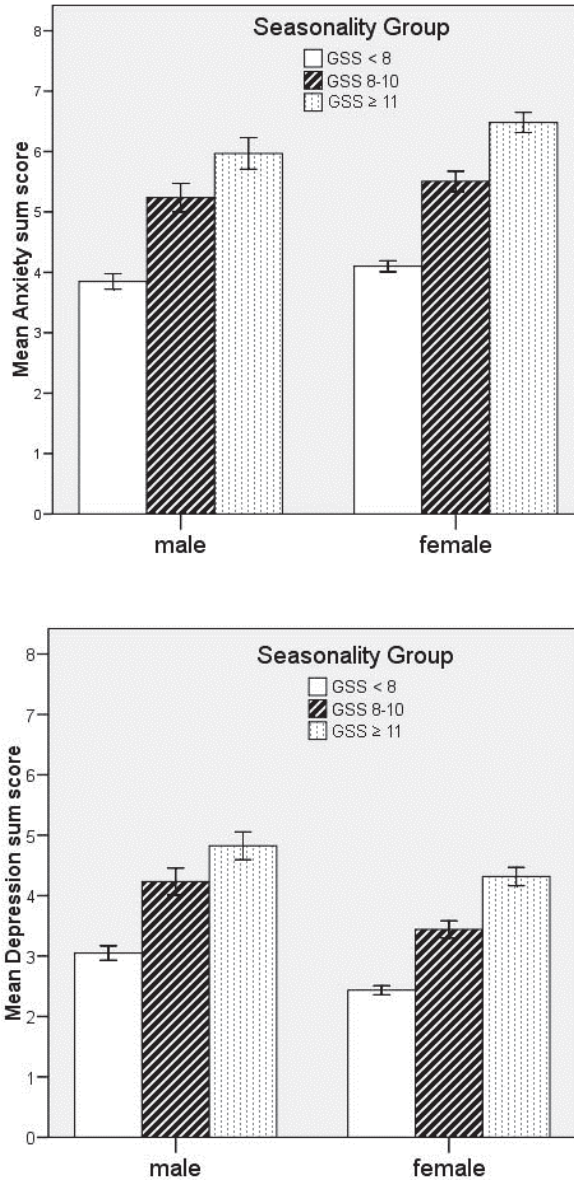
<sup>c</sup>GSS ≥ 11

<sup>d</sup> The Hospital Anxiety and Depression Scale, anxiety subscale, dichotomized at ≥ 8, restricting the depression subscale to < 8

<sup>e</sup> The Hospital Anxiety and Depression Scale, depression subscale, dichotomized at ≥ 8, restricting the anxiety subscale to < 8

<sup>f</sup> The Hospital Anxiety and Depression Scale, both anxiety and depression subscales ≥ 8.

**CORRECTED FIGURE 3 (PAPER II) Mean sum scores from both the anxiety (HADS-A) and depression (HADS-D) subscales of the Hospital Anxiety and Depression Scale in subjects with high (Global Seasonality Score  $\geq 11$ ) or not high (Global Seasonality Score  $< 11$ ) seasonality in different months.**



GSS= Global Seasonality Score. Vertical lines define the 95% confidence interval.

**CORRECTED TABLE 1 (PAPER III) Prevalence of sleep related problems in different seasonality**

groups. GSS=Global Seasonality Group.

Sleep related problem	Gender	GSS<8	GSS 8-10	GSS≥11	Kruskal Wallis statistics $X^2(2)$
<b>Problem falling asleep</b> (several times per week to always)	<b>Men</b> N=3,126	4.1%	7.1%	11.0%	38.6, p<0.001
	<b>Women</b> N=5,136	5.4%	8.2%	15.9%	121.0, p<0.001
<b>Problem with nightly awakenings</b> (several times per week to always)	<b>Men</b> N=3,110	3.7%	6.1%	9.0%	27.2, p<0.001
	<b>Women</b> N=5,109	4.1%	6.7%	11.6%	79.9, p<0.001
<b>Early morning awakening</b> (several times per week to always)	<b>Men</b> N=3,109	6.4%	9.8%	11.5%	18.8, p<0.001
	<b>Women</b> N=5,051	4.1%	7.1%	10.1%	55.4, p<0.001
<b>Daytime fatigue/sleepiness</b> (several times per week to always)	<b>Men</b> N=3,121	8.4%	15.2%	20.0%	65.8, p<0.001
	<b>Women</b> N=5,082	11.2%	15.2%	23.5%	100.0, p<0.001
<b>Unintentional sleep episodes at work</b> (a few times per month to always)	<b>Men</b> N=3,021	6.0%	9.4%	16.2%	57.2, p<0.001
	<b>Women</b> N=4,917	2.6%	4.0%	6.2%	28.7, p<0.001
<b>Unintentional sleep episodes during free time</b> (a few times per month to always)	<b>Men</b> N=3,078	19.8%	26.7%	33.5%	48.3, p<0.001
	<b>Women</b> N=5,069	18.0%	25.4%	27.6%	54.8, p<0.001

<b>Fighting sleep</b> (several times per week to always)	<b>Men</b> N=3,117	2.7%	3.3%	7.8%	32.1, p<0.001
	<b>Women</b> N=5,085	3.4%	5.5%	5.6%	14.3, p=0.001
<b>Napping during the day</b> (several times per week to always)	<b>Men</b> N=3,111	24.4%	27.7%	32.4%	14.8, p=0.001
	<b>Women</b> N=5,111	26.6%	30.3%	34.7%	27.5, p<0.001

GSS=Global Seasonality Score

**CORRECTED TABLE 2 (PAPER III) Sleep duration parameters in different seasonality groups.**

Sleep duration parameter	Gender	GSS<8	GSS 8-10	GSS≥11	ANOVA statistics F-value
Sleep duration weekdays (min)	Men N=3,071	413.6 (54.4)	412.2 (53.6)	405.0 (57.8)	5.3, p=0.005
	Women N=4,365	432.8(54.7)	429.7 (55.7)	427.3 (63.1)	3.5, p=0.029
Sleep duration free time (min)	Men N=3,095	482.8(63.8)	478.7 (65.6)	481.1 (72.8)	0.9, p=ns
	Women N=4,356	501.4(62.3)	495.7 (64.7)	492.1 (71.9)	7.9, p<0.001
Average sleep duration (min)	Men N=3,013	433.3(48.3)	431.3 (48.2)	427.2 (51.4)	3.4, p=0.035
	Women N=4,221	452.6(47.7)	448.2 (48.9)	445.8 (56.6)	7.0, p=0.001
Subjective sleep need (min)	Men N=3,081	426.4(53.0)	431.6 (53.5)	437.6 (55.1)	10.0, p<0.001
	Women N=4,316	457.4(53.2)	463.3 (52.4)	461.9 (56.1)	4.9, p=0.008
Sleep duration deficiency (min)	Men N=2,827	-7.36(56.2)	-0.3 (53.5)	10.6 (61.9)	20.1, p<0.001
	Women N=3,752	4.42(57.1)	13.8 (56.6)	17.5 (67.8)	16.8, p<0.001

Standard deviations are shown in parentheses. GSS=Global Seasonality Score.

**CORRECTED TABLE 5 (PAPER III) Effect of Season of interview (spring, summer, fall, winter) and the interaction term Season X GSS-group on sleep parameters, using logistic regression analyses (sleep problems) and two-way ANOVA analyses (sleep duration parameters).**

Sleep parameter	Gender	GSS	Winter	Spring	Summer	Fall	Sign. Main effect of season	Sign. of interaction (Season x GSS-group)
Problem falling asleep (several times per week to always)	Male	<8	5% (22)	5% (21)	2% (13)	4% (19)	p=ns	p=.01
		8-10	7% (21)	9% (15)	9% (28)	6% (23)		
		≥ 11	7% (26)	12% (32)	14% (35)	15% (36)		
	Female	<8	5% (21)	6% (24)	4% (19)	7% (25)	p=ns	p=.006
		8-10	9% (29)	5% (22)	11% (31)	10% (30)		
		≥ 11	20% (40)	14% (34)	18% (39)	11% (32)		
Problem with nightly awakenings (several times per week to always)	Male	<8	4% (20)	3% (18)	1% (11)	4% (21)	p=ns	p=ns
		8-10	6% (25)	6% (24)	9% (28)	5% (22)		
		≥ 11	7% (25)	8% (28)	6% (24)	16% (37)		
	Female	<8	4% (19)	4% (21)	4% (20)	4% (20)	p=ns	p=ns
		8-10	9% (28)	6% (23)	5% (21)	7% (25)		
		≥ 11	12% (33)	12% (33)	10% (30)	10% (30)		
Early morning awakening (several times per week to always)	Male	<8	7% (25)	5% (22)	4% (20)	8% (27)	p=ns	P=.03
		8-10	10% (31)	13% (34)	11% (32)	6% (24)		
		≥ 11	8% (27)	9% (28)	10% (30)	23% (43)		
	Female	<8	4% (19)	4% (19)	3% (17)	5% (23)	p=ns	p=ns
		8-10	8% (27)	6% (24)	7% (26)	7% (25)		
		≥ 11	11% (31)	11% (31)	7% (26)	9% (29)		
Daytime fatigue/sleepiness (several times per week to always)	Male	<8	9% (28)	8% (28)	8% (27)	8% (27)	p=ns	p=ns
		8-10	15% (36)	17% (37)	17% (38)	13% (34)		
		≥ 11	16% (37)	23% (42)	12% (33)	24% (43)		
	Female	<8	10% (30)	11% (31)	12% (33)	13% (33)	p=ns	p=ns
		8-10	19% (39)	13% (34)	15% (36)	13% (34)		
		≥ 11	23% (42)	23% (42)	19% (39)	27% (44)		
Unintentional sleep episodes at work (a few times per month to always)	Male	<8	5% (22)	6% (24)	5% (22)	7% (26)	p=ns	p=ns
		8-10	8% (27)	9% (28)	13% (34)	11% (31)		
		≥ 11	14% (34)	16% (36)	7% (25)	25% (44)		
	Female	<8	2% (16)	2% (15)	3% (18)	3% (17)	p=ns	p=ns
		8-10	5% (23)	4% (19)	4% (19)	2% (15)		
		≥ 11	5% (23)	7% (25)	5% (22)	8% (27)		
Unintentional sleep episodes during free time (a few times per month to always)	Male	<8	21% (41)	19% (39)	21% (41)	19% (39)	p=ns	p=ns
		8-10	26% (44)	27% (44)	26% (44)	28% (45)		
		≥ 11	34% (48)	35% (48)	18% (39)	36% (48)		
	Female	<8	19% (39)	17% (38)	19% (39)	18% (38)	p=ns	p=ns
		8-10	28% (45)	23% (42)	28% (45)	24% (43)		
		≥ 11	28% (45)	26% (44)	25% (44)	32% (47)		
Fighting sleep (several times per week to always)	Male	<8	2% (15)	4% (18)	3% (16)	2% (15)	p=ns	p=ns
		8-10	4% (20)	4% (20)	4% (20)	2% (13)		
		≥ 11	5% (22)	10% (30)	2% (14)	11% (32)		
	Female	<8	4% (19)	3% (16)	3% (17)	4% (19)	p=ns	p=ns
		8-10	6% (25)	5% (22)	5% (21)	5% (22)		
		≥ 11	4% (21)	5% (22)	11% (31)	7% (26)		
Napping during the day (several times per week to always)	Male	<8	26% (44)	25% (43)	24% (43)	22% (42)	p=ns	p=ns
		8-10	27% (44)	35% (48)	17% (38)	25% (44)		
		≥ 11	30% (46)	32% (47)	29% (46)	38% (49)		



	Female	<8	28% (45)	26% (44)	25% (43)	27% (44)	p=ns	p=ns
		8-10	28% (45)	35% (48)	23% (42)	31% (46)		
		≥ 11	35% (48)	35% (48)	33% (47)	35% (48)		
Insufficient sleep (at least 1h less than needed)	Male	<8	15% (36)	13% (34)	18% (38)	18% (38)	p=ns	p=ns
		8-10	24% (43)	25% (44)	33% (47)	18% (39)		
		≥ 11	24% (43)	23% (42)	20% (40)	35% (48)		
	Female	<8	15% (36)	18% (39)	18% (38)	19% (39)	p=ns	p=.03
		8-10	30% (46)	23% (42)	27% (44)	25% (44)		
		≥ 11	31% (46)	31% (46)	36% (48)	26% (44)		
Sleep duration weekdays (minutes)	Male	<8	414 (53)	416 (54)	408 (48)	413 (59)	p=ns	p=ns
		8-10	408 (55)	408 (51)	420 (51)	420 (55)		
		≥ 11	406 (52)	404 (58)	412 (65)	403 (64)		
	Female	<8	435 (56)	431 (55)	432 (52)	433 (55)	p=ns	p=ns
		8-10	429 (57)	432 (55)	421 (51)	426 (51)		
		≥ 11	427 (63)	429 (62)	420 (77)	427 (55)		
Sleep duration free time (minutes)	Male	<8	487 (61)	478 (64)	480 (62)	484 (67)	p=ns	p=ns
		8-10	478 (71)	475 (71)	481 (50)	483 (56)		
		≥ 11	484 (71)	480 (76)	473 (66)	483 (73)		
	Female	<8	505 (59)	499 (63)	503 (61)	500 (65)	p=ns	p=ns
		8-10	495 (67)	496 (57)	481 (79)	505 (65)		
		≥ 11	495 (68)	491 (74)	486 (71)	492 (74)		
Sleep time all week (minutes)	Male	<8	435 (47)	434 (49)	428 (41)	434 (53)	p=ns	p=ns
		8-10	429 (51)	427 (46)	437 (45)	438 (47)		
		≥ 11	429 (49)	426 (52)	431 (51)	427 (54)		
	Female	<8	455 (47)	450 (49)	452 (46)	452 (47)	p=ns	p=ns
		8-10	447 (52)	452 (48)	438 (45)	452 (46)		
		≥ 11	447 (56)	446 (57)	439 (67)	446 (50)		
Sleep need (minutes)	Male	<8	428 (51)	428 (51)	417 (52)	427 (57)	p=ns	p=ns
		8-10	428 (56)	429 (52)	427 (61)	426 (49)		
		≥ 11	436 (55)	437 (53)	431 (58)	444 (57)		
	Female	<8	459 (53)	455 (54)	457 (58)	458 (50)	p=ns	p=ns
		8-10	469 (53)	459 (44)	463 (60)	460 (57)		
		≥ 11	461 (58)	465 (56)	458 (55)	461 (54)		
Sleep duration deficiency (minutes)	Male	<8	-8 (56)	-6 (54)	-13 (53)	-6 (60)	p=ns	p=ns
		8-10	-2 (52)	2 (53)	1 (63)	0 (54)		
		≥ 11	9 (66)	12 (59)	9 (54)	12 (64)		
	Female	<8	5 (57)	5 (58)	4 (59)	4 (54)	p=ns	p=ns
		8-10	22 (58)	8 (53)	23 (58)	2 (56)		
		≥ 11	16 (69)	20 (66)	19 (78)	16 (64)		

GSS= global seasonality score

**CORRECTED FIGURE 1 (PAPER III)** The prevalence of a sleep deficiency (subjective sleep need – average sleep duration) of more than one hour in different seasonality groups. GSS= Global Seasonality Score, CI= Confidence Interval.

