

COVID19와 수면의학



김 근 태

계명대학교 의과대학 신경과학교실

COVID19 and Sleep Medicine

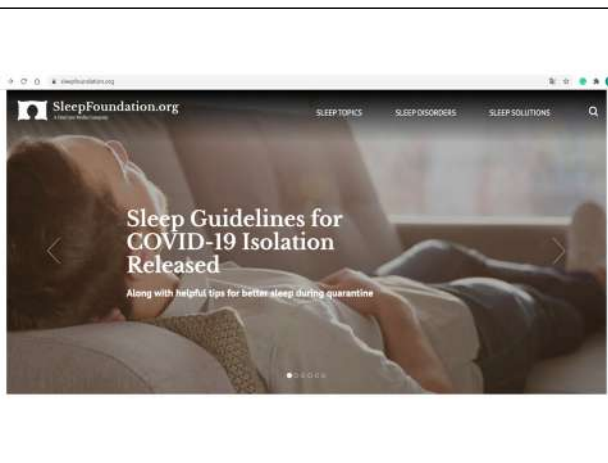
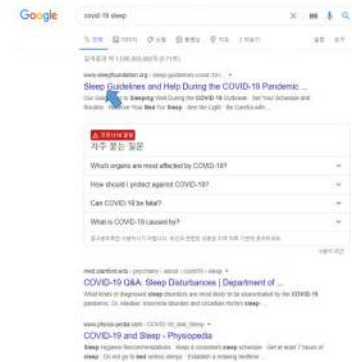
Keun Tae Kim, MD

Department of Neurology Keimyung University School of Medicine

- Bread and Butter
- COVID-19 and Sleep
- Butter and Bread
- Sleep and COVID-19

Google

COVID-19
Sleep

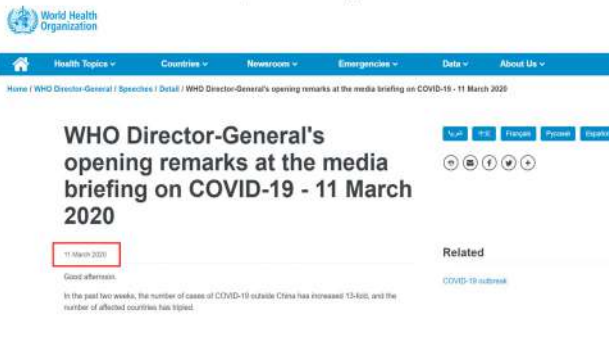


Agenda

- The impact of COVID-19 on the lifestyle
- Sleep medicine and COVID-19
- Medical staff and COVID-19

The impact of COVID-19 on the lifestyle

WHO declared, "It is a pandemic".

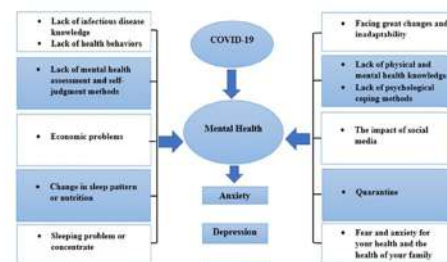


A wide range of problems

- Individual level
 - Fear
 - Anxiety
 - Self-esteem
- Community and national level
 - Lack of knowledge
 - Financial or economic problems
 - Quarantine or isolation
 - Changes of social routine
 - Inadaptability

Mental Health and COVID-19

- Anxiety
 - an emotional state
 - worry, nervousness, apprehension, and physical arousal
- Fear
 - an unpleasant emotion or thought
 - frightened or worried by something dangerous, painful, or bad that is happening or might happen
- Self-esteem
 - an individual's sense of self-worth



Impacts of the COVID-19 pandemic on mental health

Sleep medicine and COVID-19

Era of Untact

- Goal of untact:
 - To avoid unnecessary exposure
 - To avoid potential infection

Sleep medicine and COVID-19

- Although sleep medicine is NOT an essential service, Lack of adequate sleep
 - Can reduce immunity
 - Can be stressful
 - Can cause organ dysfunctions

Consequence of Untact on Sleep Medicine



European Sleep Research Society

Sleep quality and COVID-19

Author (Reference)	Year	Region	Study population	Male/f	Assessment	STROBE score	sampling method	Cut-off	Outcomes (sample size)
									Depression % (n) Anxiety % (n) Stress % (n)
A. Moghanibashine, Mansournia et al. [21]	2020	Iran	10,754	34.2%	DASS-21	28	online survey	A > 7	N.A., 50.9% (5472)
MZ. Ahmed et al. [22]	2020	China	1074	53.2%	BAI BDI-II	23	online survey	28 ± 14	37.1% (399) 29% (312) N.A.
C. Wang et al. [23]	2020	China	1210	32.7%	DASS-21	22	online survey	A > 7 D > 9 S > 10	30.3% (367) 36.4% (440) 32.1% (389)
W. Gao et al. [24]	2020	China	7143	30.35%	GAD-7	20	cluster sampling	25	N.A., 24.9% (1779)
Y. Huang et al. [25]	2020	China	7236	45.4%	GAD-7 CES-D	18	web-based survey	29 ± 28	20.1% (1454) 35.1% (2543) N.A.
M. Ueda et al. [26]	2020	Japan	1000	49.6%	GAD-7 PHQ-9	25	online survey	≥ 10 ± 10	43.1% (431) 33.2% (332) N.A.

GAD-7, Generalized Anxiety Disorder 7-item; PHQ-9, Patient Health Questionnaire

D. Li et al. [27]	2020	China	14,592	31.8%	GAD-7 PHQ-9	26	online survey	N.A.	33.5% (7503) 44.6% (8196) N.A.
SJ. Zhou et al. [28]	2020	China	8079	46.5%	GAD-7 PHQ-9	26	online survey	> 4 > 4	43.7% (3533) 37.4% (3020) N.A.
A. Sigdel et al. [29]	2020	Nepal	349	54.2%	GAD-7 PHQ-9	29	online survey	≥ 10 ± 10	34% (119) 31% (108) N.A.
SSA. Kazi et al. [30]	2020	India	1000	38%	DASS-21	19	online survey	A > 7 D > 9 S > 10	38.5% (389) 43% (435) 35.7% (357)
N. Othman et al. [31]	2020	Iraq	548	49.6%	DASS-21	19	online survey	A > 7 D > 9 S > 10	44.0% (246) 47.1% (258) 17.5% (96)
Y. Wang et al. [32]	2020	China	600	44.5%	SAS SDS	19	online survey	≥ 50 ± 50	17.7% (105) 6.3% (38) N.A.
M. Qian et al. [33]	2020	China	1011	50.44%	GAD-7	28	telephone survey via random digital dialing	≥ 10	N.A., 26.6% (269)
M. Shevlin et al. [34]	2020	UK	2025	48%	GAD-7 PHQ-9	22	online survey (quota sampling)	≥ 10 ± 10	22.2% (448) 21.6% (438) N.A.
P. Odrzozol-Garcia et al. [35]	2020	Spain	3550	35.1%	DASS-21	24	social media	A > 6 D > 9 S > 10	44.1% (1566) 32.9% (1158) 37% (1314)
SF. Agberokun et al. [36]	2020	Nigeria	502	33.6%	GAD-7 PHQ-9	29	Respondent Driven Sampling (RDS) technique and Random Survey Sampling (RSS)	≥ 5 ± 10	23.5% (118) 49.6% (249) N.A.
C. Muzza et al. [37]	2020	Italy	276	28.3%	DASS-21	27	online survey	A > 6 D > 9 S > 10	32.0% (906) 16.7% (517) 27.3% (752)

SDB and COVID-19

- OSA
 - Middle aged or old patients
 - With coexistent cerebro- or cardio-vascular and/or metabolic diseases
 - HTN
 - Obesity
- Are also the risk factor of COVID-19



제목: 목박자
 코로 호흡 곤란하여 잠이안
 오고 잠을 자지않는 경우나 목박자 1분
 이하로 떨어지면 목박자 1분 이상
 떨어지고 잠을 자지 못하고 잠을 자
 지않고 목박자 1분 이상 떨어지고 잠을
 자지 않는 경우
 목박자 1분 이상 떨어지고 잠을
 자지 않는 경우
 목박자 1분 이상 떨어지고 잠을
 자지 않는 경우

SDB and COVID-19

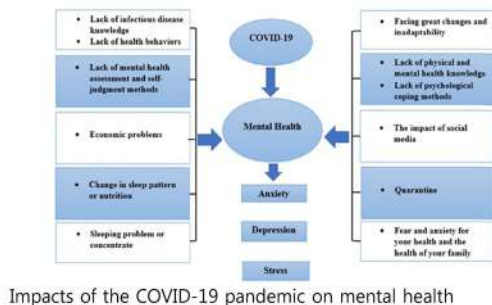
American Academy of Sleep Medicine
 British Sleep Society
 Australasian Sleep Society
 German Sleep and the Spanish Sleep Societies

- PAP devices for sleep disordered breathing
 - increase the risk of transmission through aerosolization to:
 - Medical personnel
 - The patients' family
 - PAP administration should be performed in an isolation room with negative pressure
- The in-hospital studies
 - should be carefully considered
 - after ruling out thoroughly the possibility of COVID-19

Sleep and COVID-19

- Sleep assessment **questionnaire-based** survey
- The majority
 - sleep hygiene
 - CBT
 - avoid in-lab sleep study
- Telemedicine in sleep tendency: ?
 - Home PSG vs. **in-hospital PAP trials**
 - Telemedicine for PAP titration: **NOT** a great interest
 - F/U of patients already on treatment: phone or video call

Medical Staff and COVID-19



Impacts of the COVID-19 pandemic on mental health

Table 1. Reported physician deaths from COVID-19 by specialty and median age (n = 254) on 15 April 2020

Specialty	Frequency, n (%)	Median age (years)
General practitioner/emergency room	107 (42)	47
Medicine	33 (13)	49
Respiratory	9 (3)	74
Neurology	6 (2)	68
Radiology	9 (3)	46
Infectious disease	4 (2)	49
Preventive	3 (1)	41
Microbiology	1 (0.4)	-
Psychiatry	4 (2)	44
Pediatrics	3 (1)	44
Cardiology	4 (2)	48
Neurology	3 (1)	43
Obstetrics	4 (2)	44
Neurology	2 (1)	34
Gastroenterology	2 (1)	29
Emergency medicine	2 (1)	42
Pathology	1 (0.4)	52
Pharmacy	1 (0.4)	44
Occupational health	1 (0.4)	42
Oncology/radiology	4 (2)	43
Ophthalmology	4 (2)	37
Dermatology	10 (4)	70
General surgery	11 (4)	43
Obstetrics and gynecology	7 (3)	39
Anesthesiology	3 (1)	50
Cardiac surgery	2 (1)	43
Orthopedics	1 (0.4)	54
Urology	1 (0.4)	49
Plastic surgery	1 (0.4)	42

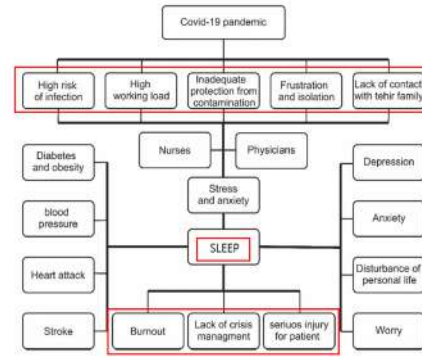
Table 2. Reported physician deaths from COVID-19 by country (n = 278) on 15 April 2020

Country	Frequency, n (%)	Median age (years)
Italy	123 (44)	59
Spain	43 (15)	54
Philippines	21 (8)	42
Indonesia	17 (6)	59
China	16 (6)	51
Spain	12 (4)	43
USA	12 (4)	49
UK	11 (4)	49
France	7 (3)	46
Pakistan	5 (2)	46
Brazil	2 (1)	54
Russia	2 (1)	50
Mexico	2 (1)	49
Turkey	2 (1)	47
Canada	1 (1)	62
Germany	1 (1)	56
Greece	1 (0.4)	-
Honduras	1 (0.4)	56
Poland	1 (0.4)	-
Serbia	1 (0.4)	59
South Korea	1 (0.4)	40

Medical staff and COVID-19



'Nor could the physicians help, for the disease attacked them also, and the contact of the sick gave them infection, so that the most faithful were the first victims.'



Sleep Med. 2020 Aug;72:1-4

Table 1
Comparison of PSQI, AIS, VAS, and sleep disturbances prevalence

	Overall (n = 1306)	FMW (n = 801)	Non-FMW (n = 505)	Effect size	P value
Scores				Cohen's d	
PSQI	8.6 ± 3.9	9.3 ± 3.8	7.5 ± 3.7	0.47	<0.001
AIS	6.3 ± 4.2	6.9 ± 4.3	5.3 ± 3.9	0.38	<0.001
Anxiety VAS	4.7 ± 2.7	4.9 ± 2.7	4.3 ± 2.6	0.22	<0.001
Depression VAS	3.9 ± 2.4	4.1 ± 2.5	3.6 ± 2.4	0.21	0.001
Prevalence					
PSQI-6	596 (71.7%)	628 (78.4%)	308 (61.0%)	1.29	<0.001
AIS-6	594 (45.5%)	644 (81.7%)	199 (39.6%)	1.45	<0.001

FMW = front-line medical workers; PSQI = Pittsburgh Sleep Quality Index; AIS = Athens Insomnia Scale; VAS = Visual Analogue Scale; RR = relative risk.

FMW, front-line medical worker

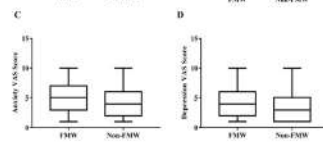
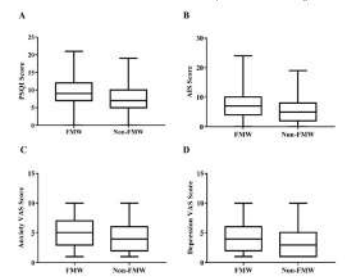


Table 1
Comparison of PSQI, AIS, VAS, and sleep disturbances prevalence

	Overall (n = 1306)	FMW (n = 801)	Non-FMW (n = 505)	Effect size	P value
Scores				Cohen's d	
PSQI	8.6 ± 3.9	9.3 ± 3.8	7.5 ± 3.7	0.47	<0.001
AIS	6.3 ± 4.2	6.9 ± 4.3	5.3 ± 3.9	0.38	<0.001
Anxiety VAS	4.7 ± 2.7	4.9 ± 2.7	4.3 ± 2.6	0.22	<0.001
Depression VAS	3.9 ± 2.4	4.1 ± 2.5	3.6 ± 2.4	0.21	0.001
Prevalence					
PSQI-6	596 (71.7%)	628 (78.4%)	308 (61.0%)	1.29	<0.001
AIS-6	594 (45.5%)	644 (81.7%)	199 (39.6%)	1.45	<0.001

FMW = front-line medical workers; PSQI = Pittsburgh Sleep Quality

FMW, front-line medical worker



ORIGINAL ARTICLE
J Sleep Med 2020;17(1):1-8
https://doi.org/10.13075/jsm.2005018

The Mental Health and Sleep Quality of the Medical Staff at a Hub-Hospital against COVID-19 in South Korea

Doo Hyun Kwon¹, Ilhye Heung², Yong Won Cho³, Kwon Tae Kim⁴

¹Department of Neurology, Keimyung University School of Medicine, Daegu, Korea

²Department of Nursing, Keimyung University School of Nursing, Daegu, Korea

³Department of Psychiatry, Keimyung University School of Medicine, Daegu, Korea

⁴Department of Psychiatry, Keimyung University School of Medicine, Daegu, Korea

COVID-19 거점 병원 의료진의 수면과 정신 건강 조사

권두혁¹, 황지형², 조종환³, 송기현⁴, 김관태⁴

경상대학교 의과대학 신경과학교실¹, 대구보건대학교 간호학과², 경상대학교 의과대학 정신과학교실³, 대구보건대학교 간호학과⁴

Received: June 3, 2020

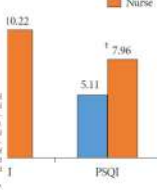
Revised: June 11, 2020

Accepted: June 12, 2020

Address for correspondence: Kwon Tae Kim, MD, Department of Psychiatry, Keimyung University School of Medicine, 265 Daegu-daero, Daegu 700-702, Korea (Tel: +82-53-259-4179; Fax: +82-53-259-4188; E-mail: ktm@kmu.ac.kr)

Objective: Since coronavirus disease (COVID-19) is worldwide threatening, medical staff's efforts and sacrifices against COVID-19 are still ongoing. The purpose of this study was to investigate the mental health of the medical staff who have fought against the COVID-19 in hub-hospital. **Methods:** The medical staff underwent an evaluation of psychiatric and sleep status between March 23rd and April 30th, 2020. **Results:** This study included a total of 101 medical staff. Approximately 1/3 of the medical staff showed depressive mood and low quality of sleep, and more than 1/3 reported anxiety. The nurses reported more severe psychiatric symptoms and poorer sleep quality. **Conclusions:** This study demonstrated the mental and sleep status of the medical staff against COVID-19. Medical and mental support should be considered for them.

Key Words: Medical staff, Sleep, Depression, COVID-19, Mental health.



ORIGINAL ARTICLE
J Sleep Med 2020;17(1):1-8
https://doi.org/10.13075/jsm.2005018

The Mental Health and Sleep Quality of the Medical Staff at a Hub-Hospital against COVID-19 in South Korea

Doo Hyun Kwon¹, Ilhye Heung², Yong Won Cho³, Kwon Tae Kim⁴

¹Department of Neurology, Keimyung University School of Medicine, Daegu, Korea

²Department of Nursing, Keimyung University School of Nursing, Daegu, Korea

³Department of Psychiatry, Keimyung University School of Medicine, Daegu, Korea

⁴Department of Psychiatry, Keimyung University School of Medicine, Daegu, Korea

COVID-19 거점 병원 의료진의 수면과 정신 건강 조사

권두혁¹, 황지형², 조종환³, 송기현⁴, 김관태⁴

경상대학교 의과대학 신경과학교실¹, 대구보건대학교 간호학과², 경상대학교 의과대학 정신과학교실³, 대구보건대학교 간호학과⁴

Received: June 3, 2020

Revised: June 11, 2020

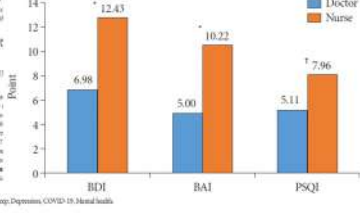
Accepted: June 12, 2020

Address for correspondence: Kwon Tae Kim, MD, Department of Psychiatry, Keimyung University School of Medicine, 265 Daegu-daero, Daegu 700-702, Korea (Tel: +82-53-259-4179; Fax: +82-53-259-4188; E-mail: ktm@kmu.ac.kr)

Objective: Since coronavirus

sickness against COVID-19 is worldwide threatening, medical staff's efforts and sacrifices against COVID-19 are still ongoing. The purpose of this study was to investigate the mental health of the medical staff who have fought against the COVID-19 in hub-hospital. **Methods:** The medical staff underwent an evaluation of psychiatric and sleep status between March 23rd and April 30th, 2020. **Results:** This study included a total of 101 medical staff. Approximately 1/3 of the medical staff showed depressive mood and low quality of sleep, and more than 1/3 reported anxiety. The nurses reported more severe psychiatric symptoms and poorer sleep quality. **Conclusions:** This study demonstrated the mental and sleep status of the medical staff against COVID-19. Medical and mental support should be considered for them.

Key Words: Medical staff, Sleep, Depression, COVID-19, Mental health.



COVID-19 Personal Protective Equipment (PPE) for Healthcare Personnel

Preferred PPE – Use N95 or Higher Respirator

- Face shield or goggles
- Headset or higher respiratory protection, if available, with the best available fit; otherwise, use a fit-tested respirator
- One pair of shoes, non-sterile gloves
- Isolation gown

Acceptable Alternative PPE – Use Face Mask

- Face shield or goggles
- Fluorescent or higher respiratory protection, as preferred, but fluorescent or higher respiratory protection is acceptable alternative
- One pair of shoes, non-sterile gloves
- Isolation gown

Source: [cdc.gov/covid19](https://www.cdc.gov/covid19)

The screenshot shows a Google search interface with the query "sleep vs sleep". The search results include:

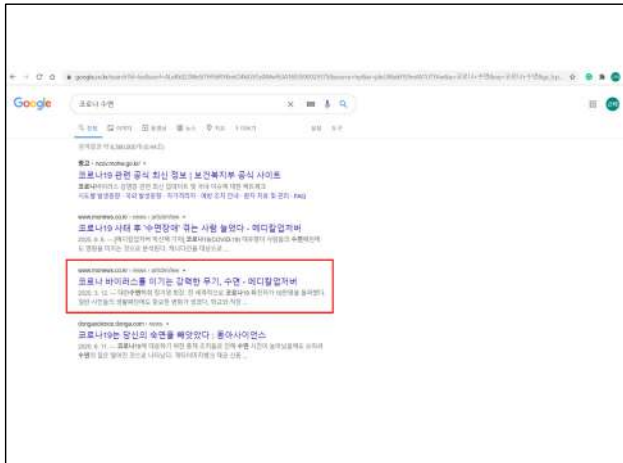
- Top result: "Sleep Deprivation and Help During the COVID-19 Pandemic..." from the American Psychological Association (APA), dated April 1, 2020. The snippet mentions that sleep deprivation can increase the risk of COVID-19 infection and that sleep is important for the immune system.
- Second result: "Sleep vs Sleep: What's the Difference?" from the National Sleep Foundation, dated April 1, 2020. The snippet explains that sleep is a state of unconsciousness and relaxation, while sleep deprivation is the lack of sleep.

코로니 지름

- ☐ 코로니 지름
- ☐ 코로니 지름 **매뉴얼**
- ☐ 코로니 지름 2단계
- ☐ 코로니 지름사원
- ☐ 코로니 지름 8-1
- ☐ **추억 코로니 지름**
- ☐ 지름 코로니 지름
- ☐ **어반미드 코로니 지름**

Google 검색

[illegible]



References

- Eur Respir Rev. 2020;29:200068
- Front Psychiatry. 2020 Jul 22;11:733
- Global Health. 2020 Sep 29;16(1):92
- Neurol Sci. 2020 Jul;41(7):1643-1645
- Neurol Sci. 2020 Jul;41(7):1655-1656
- Int J Environ Res Public Health. 2020 Sep 9;17(18):66550
- J Affect Disord. 2020 Dec 1;277:540-548
- J Clin Sleep Med. 2020 Sep 23
- J Psychiatr Res. 2020 Oct;129:198-205
- J Sleep Res. 2020 Apr 4:e13052
- Lancet Psychiatry. 2020 Jul;7(7):611-627
- Lancet Psychiatry. 2020 Oct;7(10):875-882
- PLoS One. 2020 Oct 22;15(10):e0240501
- Sleep Med. 2020 May 21;51:389-9457(20)30224-0
- Sleep Med. 2020 Jun 11;51:389-9457(20)30280-X
- Sleep Med. 2020 Aug;72:1-4
- Sleep Med. 2020 Nov;75:12-20
- Physiol Rev. 2019;99:1325-80
- Psychiatry Res. 2020 Jun;288:112954
- Psychiatry Res. 2020 Sep 1;293:113441
- J Korean Neurol Assoc 2020; 38(3): 183-187
- J Sleep Med 2020;17(1):93-97