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Psychological consequences and daily living activities among recovered nurses from COVID-19

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Abstract---The study aimed to assess psychological consequences, including depression (disorder and generalized anxiety disorder), and daily living activities among recovered nurses from COVID-19 in Babylon Governorate Hospitals and to find out the relationship between psychological consequences and daily living activities among recovered nurses from COVID-19 in Babylon Governorate Hospitals. A descriptive correlation design used in the present research established that for a period from October 10th, 2021 to March 20th, 2022. The study used a probability (convenient) sample of 143 nurses who recovered from COVID-19 and were drawn from the wards of educational and non-educational hospitals. The instruments for the study were adopted and modified for the purpose of this study the study showed that more than half of 76 (53.1%) among recovered nurses from COVID-19 had moderate depression disorders, about a third of 57 (39.9%) among recovered nurses from COVID-19 complained of generalized anxiety disorders, and the greater majority of 133 (93%) of daily living activities among recovered nurses from COVID-19 were good. The current study showed that a negative highly significant correlation between depression disorder and daily living activities at $P\text{-value} \leq 0.05$ and also showed that a negative highly significant correlation between generalized anxiety disorder and daily living activities among recovered Nurses from COVID-19 at $P\text{-value} \leq 0.05$.

Keywords---psychological consequences, nurses, COVID-19.

Introduction

Nurses play a significant role in the healthcare system. However, studies on the impacts of spending years on nursing and mental health on low work potential during the COVID-19 issue in nurses have yet to be completed. During the COVID-19 outbreak, many first responders, including nurses, had a greater psychological impact than other health care workers. There was a direct influence. Anxiety, depression, and job impairment all showed a moderately positive relationship (Razon, S. & Tokac, U.,2021).

Recovered nurses from COVID-19 have a clear need for rehabilitation interventions. Nurses can suffer from poor physical performance even after physical therapy. COVID-19 has detrimental consequences for patients' independence and participation, as well as a burden on the healthcare provider, family, and friends. Multi-ill nurses after COVID-19 will have a slow or incomplete recovery after being admitted to the hospital (Belli, S. et al.2020). According to multiple studies, one year after leaving the intensive care unit, many clinical staff who were able to contain the virus and remove their ventilators may experience long-term physical, emotional, and psychological problems like depression, anxiety disorders, job loss, and daily activities like eating and bathing, as well as cognitive deficits similar to Alzheimer's disease (Johnson, C.Y., & Cha, A.E.2020).

Method

Study Design: A descriptive correlation design study was undertaken to assess the prevalence of psychological consequences including depression and anxiety disorders, and daily living activities among recovered nurses from COVID-19 in educational and non-educational hospitals of the Babylon Governorate starting from October 28th, 2021, to May 15th, 2022, and to find out relationships between psychological consequences with daily living activities among recovered nurses from COVID-19.

Study Instrument: Patient's Heath Questionnaire (PHQ-9), Generalized Anxiety Disorder Scale (GAD-7), and Activities of Daily Living (ADLs). The data were analyzed through the application of descriptive and inferential Statistical approaches which are applied by using SPSS version 22.0. The researcher divided the cut of points for the scales used using the mean of the score law.

Ethical Consideration: This is the valuable part of the study, and it was concerned with ethical considerations at the start of the sample collection process on December 14, 2021. The initial approval was acquired from the Ethical Committee for Study by the University of Baghdad's College of Nursing, and approval from the Iraqi Ministry of Health was also obtained to conduct research in its health institutions. Lastly, before gathering data and filling out the questionnaire, informed consent was sought from the nurses to participate in this study. The researcher explains to the subject that their information will be highly confidential and for research purposes only. The type of informed consent was written and filled out. To agree or disagree before the nurse fills out the questionnaire.

Results

Table 1. Descriptive analysis of Depression disorder items among recovered nurses from COVID-19 (PHQ-9)

Items	Responses	F	%	M	SD	Asses.
Little interest or pleasure in doing things	Not at all	53	37.1	2.59	1.35	Moderate
	Nearly every day	12	8.4			
	More than half the days	18	12.6			
	Several days	60	42.0			
	Total	143	100.0			
Feeling down, depressed, or hopeless	Not at all	42	29.4	2.67	1.26	Moderate
	Nearly every day	18	12.6			
	More than half the days	28	19.6			
	Several days	55	38.5			
	Total	143	100.0			
Trouble falling or staying a sleep, or sleeping too much	Not at all	54	37.8	2.36	1.27	Moderate
	Nearly every day	28	19.6			
	More than half the days	16	11.2			
	Several days	45	31.5			
	Total	143	100.0			
Felling tired or having little energy	Not at all	31	21.7	2.76	1.15	Moderate
	Nearly every day	23	16.1			
	More than half the days	38	26.6			
	Several days	51	35.7			
	Total	143	100.0			
Poor appetite or overeating	Not at all	47	32.9	2.52	1.26	Moderate
	Nearly every day	23	16.1			
	More than half the days	25	17.5			
	Several days	48	33.6			
	Total	143	100.0			
Feeling bad about yourself or that you are a failure or have let yourself or your family down	Not at all	110	76.9	1.55	1.06	Low
	Nearly every day	4	2.8			
	More than half the days	12	8.4			
	Several days	17	11.9			
	Total	143	100.0			
Trouble concentrating on things such as reading the newspaper or watching television	Not at all	75	52.4	2.09	1.27	Moderate
	Nearly every day	14	9.8			
	More than half the days	20	14.0			
	Several days	34	23.8			
	Total	143	100.0			
Moving or speaking so slowly that other people could have noticed ? or the opposite	Not at all	81	56.6	1.98	1.23	Low
	Nearly every day	13	9.1			
	More than half the	20	14.0			

being so fidgety or restless	days					
that you have been moving	Several days	29	20.3			
around a lot more than usual	Total	143	100.0			
Thoughts that you would be	Not at all	120	83.9	1.34	.84	Low
better off dead or of hurting	Nearly every day	6	4.2			
yourself in some way	More than half the	8	5.6			
	days					
	Several days	9	6.3			
	Total	143	100.0			

Cut of points value(1): low = (1-2), Moderate = (2.1 - 3), High = (3.1 - 4).
M = Mean, SD=standard deviation, F=frequency, % =percentage.

Table 1.1 shows that the maximum mean was 2.76 with the item (feeling tired or having little energy), while the minimum mean was 1.55 with the item (feeling bad about yourself or that you are a failure or have let yourself or your family down).

Table 1.2: Descriptive analysis of overall depression disorder among recovered nurses from COVID-19 (PHQ-9)

Ranking	F	%	M	SD	Overall assessment
Low	57	39.9	2.2	.633	Moderate
Moderate	76	53.1			
High	10	7.0			
Total	143	100.0			

Cut of points value(1): low = (1-2), Moderate = (2.1 - 3), High = (3.1 - 4).
M = Mean, SD=standard deviation, F=frequency, % =percentage.

Table 1.2 Show that more than half 76 (53.1%) of recovered nurses from COVID-19 were having moderate depression disorder.

Table 1.3: Descriptive analysis of items of generalized anxiety disorder among recovered nurses from COVID-19. (GAD-7)

Items		F	%	M	SD	Asses.
Feeling nervous,	Not at all	43	30.1	2.73	1.311	Moderate
anxious or on edge	Nearly every day	17	11.9			
	More than half the days	18	12.6			
	Several days	65	45.5			
	Total	143	100.0			
Not being able to stop	Not at all	64	44.8	2.31	1.334	Moderate
or control worrying	Nearly every day	17	11.9			
	More than half the days	15	10.5			
	Several days	47	32.9			
	Total	143	100.0			
Worrying too much	Not at all	54	37.8	2.45	1.293	Moderate
about different things	Nearly every day	18	12.6			
	More than half the days	24	16.8			
	Several days	47	32.9			

Trouble relaxing	Total	143	100.0	2.53	1.315	Moderate
	Not at all	52	36.4			
	Nearly every day	16	11.2			
	More than half the days	22	15.4			
	Several days	53	37.1			
Being so restless that it is hard to sit still	Total	143	100.0	2.15	1.316	Moderate
	Not at all	75	52.4			
	Nearly every day	11	7.7			
	More than half the days	18	12.6			
	Several days	39	27.3			
Becoming easily annoyed or irritable	Total	143	100.0	2.69	1.217	Moderate
	Not at all	37	25.9			
	Nearly every day	23	16.1			
	More than half the days	30	21.0			
	Several days	53	37.1			
Feeling afraid as if something awful might happen	Total	143	100.0	2.10	1.212	Moderate
	Not at all	69	48.3			
	Nearly every day	20	14.0			
	More than half the days	25	17.5			
	Several days	29	20.3			
	Total	143	100.0			

Cut of points value(1): low = (1-2), Moderate = (2.1 - 3), High = (3.1 - 4).
M = Mean, SD=standard deviation, F=frequency, % =percentage.

Table 1.3: Shows that the maximum mean was 2.73 with the item (Feeling nervous, anxious or on edge) while a minimum mean 2.10 with the item (Feeling afraid as if something awful might happen).

Table 1.4: Descriptive analysis of overall generalized anxiety disorder among recovered nurses from COVID-19 (GAD-7)

Ranking	Frequency	Percent	M	SD	Overall assessment
Low	51	35.7	2.42	.807	Moderate
Moderate	57	39.9			
High	35	24.5			
Total	143	100.0			

Cut of points value(1): low = (1-2), Moderate = (2.1 - 3), High = (3.1 - 4).
M = Mean, SD=standard deviation, F=frequency, % =percentage.

Table 1.4 Show that about third 57 (39.9%) of recovered nurses from COVID-19 were complaining of general anxiety disorder.

Table 1.5: Descriptive analysis of overall daily living activities among recovered Nurses from COVID-19

Ranking	Frequency	Percent	M	SD	Overall assessment
Poor	0	0	2.79	.240	Good
Fair	10	7.0			

Good	133	93.0
Total	143	100.0

Cut of points value(0.66): Poor = (1-1.66), Fair = (1.67-2.33), Good = (2.34-3). M = mean, SD=standard deviation, F=frequency, % = percentage.

Table 1.5 Show that 133(93%) of daily living activities of Nurses who recovered from COVID-19 were good.

Table 1.6: Correlation between depression disorder and daily living activities among recovered Nurses from COVID-19

		Daily living activities among Recovered Nurses from COVID-19.		Total	Correlation	
		Fair	Good		Spearman's rho	P-value
Depression disorder among recovered nurses from COVID-19.	Low	1	56	57	-.298 **	.001
	Moderate	8	68	76		
	High	1	9	10		
	Total	10	133	143		

**Correlation is significant at the 0.01 level.
*Correlation is significant at the 0.05 level.

Table 1.6 Show that a negative highly significant correlation between depression disorder and daily living activities among recovered Nurses from COVID-19 at P-value ≤ 0.05 .

Table 1.7: Correlation between generalized anxiety disorder and daily living activities among recovered Nurses from COVID-19

		Daily Living Activities among recovered Nurses from COVID-19.		Total	Correlation	
		Moderate	Good		Spearman's rho	P-value
Generalized anxiety disorder among recovered nurses from COVID-19.	Low	1	50	51	-.257**	0.002
	Moderate	7	50	57		
	High	2	33	35		
	Total	10	133	143		

**Correlation is significant at the 0.01 level.
*Correlation is significant at the 0.05 level.

Table 1.7 show that a negative highly significant correlation between generalized anxiety disorder and daily living activities among recovered Nurses from COVID-19 at P-value ≤ 0.05 .

Discussion

Discussion the descriptive analysis of depression disorder items among recovered nurses from COVID-19

The findings of the data analysis regarding table (1.1) show that more than half (53,1%) of the recovered nurses from COVID-19 had moderate depression disorder. This result agreed with a study that was carried out to assess depression among frontline nurses in emergency departments during the COVID-19 outbreak and its influence on quality of life. The results of the study showed that the prevalence of depression among nurses was 43.61%, as it included (27.7%) of mild depression, (8.6%) of moderate depression, (5.3%) of moderate to severe depression, and (2.1%) of severe depression out of the total number of (1103) participating nurses (An, Y., et al., 2020).

Alnazly, E., et al. (2021) conducted a study to assess anxiety, depression, stress, dread, and social support among Jordanian clinical staff during the COVID-19 pandemic. The results of the study showed that the majority of participants in the study were female, and that the proportion of nurses with severe depression was 40 percent of the total number of 365 participants.

Côté, J. et al. (2022) conducted a cross-sectional study to assess psychological distress, depression symptoms, and exhaustion among Quebec nursing staff during the COVID-19 pandemic. The results of the study showed that the percentage of nurses with moderate to severe depression was 27% of the total number (1708), and that most of the participants were female, constituting 87% of the total number of participants.

Discussion the descriptive analysis of items of generalized anxiety disorder among recovered nurses from COVID-19

The findings of the data analysis regarding table (1.3) show that about a third (39.9%) of the recovered nurses from COVID-19 were complaining of general anxiety disorder. This result agreed with a study that was carried out to assess anxiety and COVID-19 related stressors among nursing staff who performed shift work at four COVID-19 dedicated hospitals in Korea. The results of the study showed that the percentage of generalized anxiety disorder was 122 (32%) of the participating nurses, as most of them were females under the age of 50 years (Park, S., et al., 2021).

Feingold, J.H., et al., (2021) conducted a study to assess the psychological impact on frontline nursing staff during the pandemic surge in New York City during the COVID-19 pandemic. The results of the study showed that the proportion of individuals with generalized anxiety disorder was 642 (25%) of the total number of participants (1005) of participants. Arafa, A., et al. (2021) conducted a cross-sectional study to assess the experience of the front-line nursing staff about depression, anxiety, and stress in Egypt and Saudi Arabia during the COVID-19 pandemic. The results showed that the proportion of healthcare workers with generalized anxiety disorder (55.9%) of the total (426) number of participants was the highest in the world.

Discussion the descriptive analysis of items of activities of daily living among recovered nurses from COVID-19

The findings of the data analysis regarding table (1.5) show that 133 (93%) of daily living activities among recovered nurses from COVID-19 were good. Several studies have been conducted on the activities of daily life from the beginning of the pandemic until now, through which it has been shown that the daily activities of those recovering from COVID-19 are constantly improving.

Taboada, M. et al. (2021) conducted a study to assess functional status six months after hospitalization following COVID-19. The results of a study in a hospital in Spain showed that the rate of decline in functional status was 87 (47.5%) of the total number of 242 participants. The researchers made recommendations for further long-term research to monitor the functional status of COVID-19 survivors.

Latronico, N. et al., (2021) conducted a study in Italy to assess the physical, cognitive, and psychological health outcomes of COVID-19 associated acute respiratory distress syndrome survivors after a year. The results of the study showed that 98% of participants had acquired independence in daily living activities at three months. Over time, cognitive impairment (28% at three months) improved among the total number of participants (114).

Peñas, C., et al., (2022) conducted a multinational study to assess whether functional limits on daily living activities are linked to symptoms encountered during the acute phase of SARS-CoV-2 infection and hospitalization to an intensive care unit post-COVID. The results of the study Eight months after contracting COVID-19, at least 20% of survivors reported constraints on their daily activities. The researchers also made recommendations for more long-term research to track COVID-19 survivors' daily living activities. The researcher's opinion is that the measure of daily living activities used indicates an improvement in those activities, as there are several factors that interfere, which work to improve daily living activities, including daily sports and diet, and avoiding negative habits that affect, for example, staying up late, So we got a big group from the total number of nurse participants working the morning shift.

Discussion the correlation between depression disorder and daily living activities among recovered Nurses from COVID-19

The findings of the data analysis regarding table (1.6) show a negative, highly significant correlation between depression disorder and daily living activities among recovered nurses from COVID-19 at a P-value ≤ 0.05 . De Mello, M. T., et al. (2013) conducted a population study to find out the relationship between physical activity, depression, and anxiety symptoms. The results of the study showed that patients who do not engage in physical activities are twice as likely to show symptoms of depression, as the rate of depression in individuals without physical activity (63.2%) is much higher than the rate of depression in individuals who engage in physical activity (10.9%).

Gustryanti, K., et al., (2017) conducted a study to assess depression among disabled individuals living in Cimahi, West Java Province, Indonesia. Age, marital status, family history of depression, perceived health status, and daily living activities were found to have a negative significant relationship with depression among disabled individuals ($p < .01$; $p < .05$). The researcher's opinion is that nurses recovering from COVID-19 who have depressive disorders suffer from reduced physical activity, and this affects the course of the nursing process and the care of patients within health institutions as well as their family life patterns.

Discussion the correlation between generalized anxiety disorder and daily living activities among recovered Nurses from COVID-19

The findings of the data analysis regarding table (1.7) show a highly-significant correlation between generalized anxiety disorder and daily living activities among recovered nurses from COVID-19 at a P-value ≤ 0.05 . This result agreed with a cross-sectional study was conducted in Sao Paulo, Brazil to find the relationship between anxiety disorder and activities of daily living in a sample of the population. The results of the study showed that individuals who do not engage in physical activity are twice as likely to show symptoms of anxiety compared to those who are accustomed to doing physical activities (De Mello, M. T., 2013).

A cross-sectional study was conducted in Spain via an online survey to find the relationship between anxiety symptoms and daily activities during the final phase of Covid 19 on 2,250 participants, 54% of the females were about 35 years old. Anxiety and daily activities, and the association was stronger in females under the age of 30 years, and these results support the results of our study (Bueno, R.L., et al. 2020).

The researcher's opinion that's greater the feeling of anxiety and tension, the greater the thinking and fear of the obstacles that cause this tension, which leads to an imbalance in brain functions, including difficulty regulating sleep, staying up for long periods of sleep, inability to wake up early, lack of focus, lack of productivity, and a constant feeling of anxiety and excessive nervousness. Which affects the overall health and thus the difficulty of performing daily activities.

Conclusion

Almost fifty-three percent of recovered nurses from COVID-19 had moderate depression disorder. Almost forty percent of recovered nurses from COVID-19 had moderate generalized anxiety disorder. Ninety-three percent of daily living activities among recovered nurses from COVID-19 were good. The depression disorder of recovered nurses from COVID-19 has an inverse relationship with their daily living activities. The generalized anxiety disorder of recovered nurses from COVID-19 has an inverse relationship with their daily living activities.

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References

1. Razon, R. & Tokac, U. (2021). Nursing professionals' mental well-being and workplace adjustment during the COVID-19 crisis: A Network Wiley Online Library ;29(6), pp(1653-1659). <https://doi.org/10.1111/jonm.13285>
https://www.google.com/url?sa=t&source=web&rct=j&url=https://pubmed.ncbi.nlm.nih.gov/33604981/&ved=2ahUKEwjT0KKf9oz3AhVxQ_EDHXpBBwQQFnoECAMQAQ&usg=AOvVaw0Ps-S1TBNsn_CqSlSdMfCt
2. Belli, S., Balbi, B., Prince, I., Cattaneo, D., Masocco, F., Zaccaria, S., Bertalli, L., Cattini, F., Lomazzo, A., Negro, F., Giardini, M., Franssen, F.M., Janssen, D.J. & Spruit, M.A. (2020). Low physical functioning and impaired performance of activities of daily life in COVID-19 patients who survived hospitalisation. The European Respiratory Journal. <https://dx.doi.org/10.1183%2F13993003.02096-2020>
https://www.google.com/url?sa=t&source=web&rct=j&url=https://pubmed.ncbi.nlm.nih.gov/32764112/&ved=2ahUKEwiZ4tPohuX2AhXqsYsKHHVHZDi0QFnoECAMQAQ&usg=AOvVaw1jD3_1-fYeQSvRVIIIi9zF
3. Johnson, C.Y. & Cha, A.E. (2020). The dark side of ventilators: Those hooked up for long periods face difficult recoveries. The Washington Post.<https://www.washingtonpost.com/health/2020/04/03/coronavirus-survivors-recovery/>
4. An, Y., Yang, Y., Wang, A., Li, Y., Zhang, Q., Cheung, T., Ungvari, G.S., Qin, M.Z., An, F.R. & Xiang, Y. (2020). Prevalence of depression and its impact on quality of life among frontline nurses in emergency departments during the COVID-19 outbreak. Journal of Affective Disorders .1(276), pp(312–315).<https://dx.doi.org/10.1016%2Fj.jad.2020.06.047>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7361044/>
5. Alnazly, E., Khraisat, O., AlBashaireh, A. & Bryant, C. (2021). Anxiety, depression, stress, fear and social support during COVID-19 pandemic among Jordanian healthcare workers. Plos one. 16(3). Doi:10.1371/journal.pone.0247679
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0247679>
6. Côté, J., Aita, M., Chouinard, M., Houle, J., Tremblay, M., Lessard, L., Rouleau, G. & Gélinas, C. (2022). Psychological distress, depression symptoms and fatigue among Quebec nursing staff during the COVID-19 pandemic: A cross-sectional study. Wiley Online Library. <https://doi.org/10.1002/nop2.1199>
<https://onlinelibrary.wiley.com/doi/full/10.1002/nop2.1199>
7. Arafa, A., Mohammed, Z., Mahmoud, O., Elshazley, M., & Ewis, A. (2021). Depressed, anxious, and stressed: What have healthcare workers on the frontlines in Egypt and Saudi Arabia experienced during the COVID-19 pandemic?. Journal of affective disorders, 278, pp(365–371). <https://doi.org/10.1016/j.jad.2020.09.080>
<https://www.google.com/url?sa=t&source=web&rct=j&url=https://pubmed.ncbi.nlm.nih.gov/33007626/&ved=2ahUKEwjdtKXFleD2AhWISPEDHSWjAxEQFnoECAMQAQ&usg=AOvVaw3acTKzXe1fo9-sK3bqMsi7>
8. Park, S., Lee, Y., Kim, T. & Jung, S. (2021). Anxiety and COVID-19 Related Stressors Among Healthcare Workers Who Performed Shift Work at Four COVID-19 Dedicated Hospitals in Korea. Journal of Occupational and

- Environmental Medicine.; 63(10), pp(875–880).
<https://dx.doi.org/10.1097%2FJOM.0000000000002250>
https://www.google.com/url?sa=t&source=web&rct=j&url=https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8478099/&ved=2ahUKEwjJuICvi-D2AhVUQ_EDHfLiB-gQFnoECCQQAQ&usg=AOvVaw1HfnSfVcNPvVRZMr2vilmf
9. Feingold, J., Peccoraro, L., Chan, C., Kaplan, C., Kauderer, H., Charney, D., Verity, J., Hurtado, A., Burka, L., Syed, S., Murrough, J., Feder, A., Pietrzak, R. & Ripp, J. (2021). Psychological Impact of the COVID-19 Pandemic on Frontline Health Care Workers During the Pandemic Surge in New York City. Chronic Stress. <https://dx.doi.org/10.1177%2F2470547020977891>
https://www.google.com/url?sa=t&source=web&rct=j&url=https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7863176/&ved=2ahUKEwjJuICvi-D2AhVUQ_EDHfLiB-gQFnoECAoQAQ&usg=AOvVaw0Zc38VEF51fJgrXrCa6dW
 10. Taboada, M., Cariñena, A., Moreno, E., Rodríguez, N., Domínguez, M., Casal, A., Riveiro, V., Vieito, M., Valdés, L., Álvarez, J. & Pillado, T. (2021). Post-COVID-19 functional status six-months after hospitalization. The Journal of Infection. 82(4), pp (31-33). <https://dx.doi.org/10.1016%2Fj.jinf.2020.12.022>
[https://www.journalofinfection.com/article/S0163-4453\(20\)30784-2/abstract](https://www.journalofinfection.com/article/S0163-4453(20)30784-2/abstract)
 11. Latronico, N., Peli, E., Calza, S., Rodella, F., Novelli, M., Cella, A., Marshall, J., Needham, D., Rasulo, F. & Piva, S. (2022). Physical, cognitive and mental health outcomes in 1-year survivors of COVID-19-associated ARDS. Thorax. 77(3). <http://dx.doi.org/10.1136/thoraxjnl-2021-218064>
https://www.google.com/url?sa=t&source=web&rct=j&url=https://thorax.bmj.com/content/77/3/300&ved=2ahUKEwjx9b-6juf2AhXZR_EDHWjvDUEQFnoECAMQAQ&usg=AOvVaw1ys4X1edusSezZDoQVSF7
 12. Peñas, C., Guerrero, J., Pardon, E., Jiménez, J. & Valero, O. (2022). Post-COVID functional limitations on daily living activities are associated with symptoms experienced at the acute phase of SARS-CoV-2 infection and internal care unit admission: A multicenter study. The Journal of Infection. 84(2), pp(248–288).
<https://dx.doi.org/10.1016%2Fj.jinf.2021.08.009>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8349395/>
 13. De Mello, M.T., Lemos, V., Antunes, H.K., Bittencourt, L., Silva, R.S. & Tufik, S. (2013). Relationship between physical activity and depression and anxiety symptoms: a population study. Journal of affective disorders, 149(1-3), pp(241–246). <https://doi.org/10.1016/j.jad.2013.01.035>
<https://www.google.com/url?sa=t&source=web&rct=j&url=https://pubmed.ncbi.nlm.nih.gov/23489405/&ved=2ahUKEwj4mNyAp-P2AhXMuaQKHJ3AeEQFnoECAQQBQ&usg=AOvVaw0OVmctv9sZ5vp63Raiibi->
 14. Gustrianti, K., Thongpat, S. & Maneerat, S. (2017). Factors Related to Depression among Older People Living In Cimahi, West Java Province, Indonesia. Belitung Nursing Journal, 3(1), 14–22.
<https://doi.org/10.33546/bnj.50>
<https://www.belitungraya.org/BRP/index.php/bnj/article/view/50>

15. Bueno, R.L., Calatayud, J., Ezzatvar, Y., Casajús, J.A., Smith, L., Andersen, L. & Sánchez, G. (2020). Association Between Current Physical Activity and Current Perceived Anxiety and Mood in the Initial Phase of COVID-19 Confinement. *Front. Psychiatry*. <https://doi.org/10.3389/fpsyt.2020.00729>
<https://www.frontiersin.org/articles/10.3389/fpsyt.2020.00729/full>