Assessing COVID-19 health literacy, preparedness and associated factors among institutional caregivers for people with intellectual disabilities

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Background and objective

In Taiwan, the first COVID-19 case at a long-term care institution was reported on 21 March 2020. However, previous studies did not investigate experiences of the institutional staff in receiving COVID-19 health literacy, and determinants in care institutions for people with disabilities. As Taiwan has become a super-aged society, care institutions for people with disabilities, must implement measures against emerging infectious diseases. This study analyzed COVID-19 health literacy, preparedness and associated factors of caregivers in institutions for people with intellectual disabilities.

Methods

This study was reviewed and approved by the Ethical Review Committee of Taipei MacKay Memorial Hospital (No. 21MMHISS418e). Purposive sampling was employed to select 382 institutional caregivers from eight care institutions for people with intellectual disabilities. A structured questionnaire, the COVID-19 Health Literacy Assessment Scale, was used as the measurement instrument. The scale is a self-designed questionnaire comprising 21 items on health literacy and COVID-19 prevention policies. The questionnaire was evaluated by experts for face validity, and the designed concept was based on the framework of public health prevention, including primary, secondary, and tertiary prevention stages and five levels of measures: health promotion, special protection, early diagnosis and appropriate treatment, limiting disabilities, and rehabilitation. The questionnaire responses were documented using Microsoft Excel and analyzed using SPSS 23.0 through descriptive and inferential statistical analyses.

Results

The participants had a mean COVID-19 health literacy score of 88.8 ± 8.9 (range: 63–105). There was a significant correlation between the three dimensions of COVID-19 health literacy, namely 'ability to obtain COVID-19-related information,' 'ability to understand COVID-19-related information,' and 'ability to distinguish and apply COVID-19-related information.' Multiple logistic regression analysis of the relationships between the demographic variables and COVID-19 health literacy revealed 'monthly service hours' as a significantly correlated factor. Participants who worked less than 160 h per month had higher COVID-19 health literacy than those who worked 160 h or more monthly (OR=1.922; 95% CI=1.183–3.122).

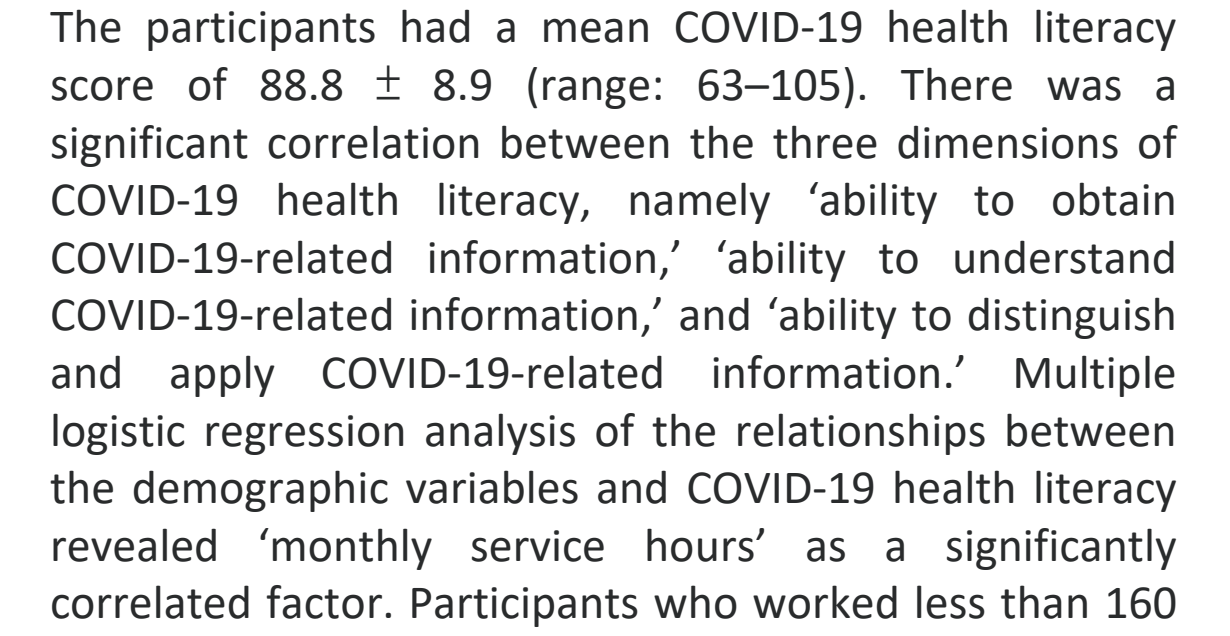

Figure 1. Distribution of staff COVID-19 health literacy scores (N=385)

Table 1. Distribution of COVID-19 health literacy responses among workers (N=385)

Variable Name	Strongly agree n(%)	Agree n(%)	Neutral n(%)	Disagree n(%)	Strongly disagree n(%)
1. I can get information about prevention of COVID-19 infection.	159(41.3)	219(56.9)	6(1.6)	1(0.3)	0
2. I can get information about the organization's COVID-19 prevention & management guidelines.	155(40.3)	217(56.4)	12(3.1)	1(0.3)	0
3. I can get information about the symptoms of contracting COVID-19.	153(39.7)	220(57.1)	11(2.9)	1(0.3)	0
4. I can get information about COVID-19 testing at my nearest medical facility.	113(29.4)	205(53.2)	49(12.7)	12(3.1)	6(1.6)
5. I have access to information about supportive care for patients with COVID-19.	97(25.2)	166(43.1)	106(27.5)	12(3.1)	4(1)
6. I can get information about self-health management, home isolation and home quarantine.	123(31.9)	199(51.7)	59(15.3)	2(0.5)	2(0.5)
7. I can get information about the New Life Movement as the COVID-19 pandemic slows down.	191(49.6)	157(40.8)	37(9.6)	0	0
8. I can understand the side effects and protective effects of various COVID-19 vaccines.	135(35.1)	221(57.4)	26(6.8)	3(0.8)	0
9. I can understand the current government precautions against COVID-19.	144(37.4)	215(55.8)	21(5.5)	4(1)	1(0.3)
10. I can understand the symptoms of COVID-19.	131(34)	216(56.1)	36(9.4)	2(0.5)	0
11. I can understand the appointment method for COVID-19 testing at the medical facility.	107(27.8)	214(55.6)	53(13.8)	10(2.6)	1(0.3)
12. I can understand supportive care for patients with COVID-19.	108(28.1)	177(46)	83(21.6)	14(3.6)	3(0.8)
13. I can understand the significance of autonomous health management, home isolation and home quarantine.	150(39)	189(49.1)	42(10.9)	3(0.8)	1(0.3)
14. I can understand the New Life Movement as the COVID-19 epidemic slows down.	185(48.1)	167(43.4)	33(8.6)	0	0
15. I can judge whether media reports on COVID-19 precautions can be trusted.	121(31.4)	196(50.9)	65(16.9)	3(0.8)	0
16. I can properly use all protective equipment to avoid contracting COVID-19.	124(32.2)	224(58.2)	34(8.8)	3(0.8)	0
17. I can judge whether measures to prevent COVID-19 infection are effective.	135(35.1)	217(56.4)	32(8.3)	1(0.3)	0
18. I can make an appointment for a COVID-19 test myself at a medical facility.	141(36.6)	209(54.3)	31(8.1)	4(1)	0
19. I can self-use COVID-19 rapid test kits.	122(31.7)	181(47)	52(13.5)	25(6.5)	5(1.3)
20. I can implement the New Life Movement as the COVID-19 epidemic slows down.	206(53.5)	164(42.6)	14(3.6)	1(0.3)	0
21. I can judge the difference between autonomous health management, home isolation and home quarantine.	133(34.5)	208(54)	39(10.1)	5(1.3)	0
* Average of COVID-19 health literacy total score	88.7±10.4 (range: 58-105)				

*Total score of COVID-19 health literacy: a total of 21 questions, with a score range of 21-105; the higher the score is, the better the COVID-19 health literacy.

Table 2. Logistic regression analysis of COVID-19 health literacy level (>82 points vs. ≤82 points) (N=385)

Variables*	O.R.	95% C.I.	P
Gender (ref: Female)	1.00		
Male	2.46	1.15-5.26	0.020
Job category (ref: Nursing aide)	1.00		
Nurse	7.25	2.46-21.44	<0.001
Social worker	1.04	0.32-3.44	0.942
Other	1.08	0.41-2.85	0.880
Service hours per month (ref: 40-79)	1.00		
80-119	0.36	0.06-2.17	0.265
120-159	0.30	0.06-1.37	0.120
≧160	0.26	0.07-0.97	0.044
Cared for a confirmed COVID-19 patient (ref: No)	1.00		
Yes	0.13	0.02-0.98	0.047
Received training related to the prevention and treatment of infectious diseases (ref: No)	1.00		
Yes	2.80	1.52-5.15	0.001

*Variables with no significant difference: age, education, marital status, religious beliefs, primary household income earner, self-perceived health status, length of professional certification, total years of service in long-term care, total years of service in current institution, number of persons served per day, monthly salary, care of suspected or confirmed COVID-19 patients, and COVID-19 vaccination.
O.R.: odds ratio C.I.: confidence interval

Conclusions

This study recommends that institutions for people with intellectual disabilities establish comprehensive pandemic prevention policies according to the level of health literacy among staff members to effectively improve their COVID-19 health literacy and response strategies, reduce health risks of caregivers and patients, and ensure health and well-being in the institutional community.

Acknowledgments

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