Original Article

Knowledge, Perception and Willingness to use Telerehabilitation among Caregivers of Paediatric Physiotherapy Patients at Selected Hospitals in Nigeria

M.B Fatudimu, B.O Akinwola

Department of Physiotherapy, College of Medicine, University of Ibadan

Abstract

Background: Telerehabilitation has been identified in recent times as a valuable tool for expanding access to rehabilitation services. In telerehabilitation, especially for the paediatric population caregivers have the vital role of assisting the child with technology and exercises. It is therefore important that the caregivers have a good knowledge of telerehabilitation and their role in the process. This study was aimed at determining the knowledge, perception and willingness to use telerehabilitation among caregivers of paediatric physiotherapy patients at the two major public paediatric referral centers in Ibadan, Nigeria.

Materials and methods: A total of 196 caregivers of paediatric physiotherapy patients purposively selected from the University College Hospital and Oni Memorial Children's Hospital, Ibadan participated in this cross-sectional study. Descriptive statistics of frequencies, percentages, mean, and inferential statistics of Chi-square test were used to analyze the data with level of significance set at 0.05.

Results: Results showed that two thirds of the participants were knowledgeable about what telerehabilitation involves. However an equal number reported that telerehabilitation increases their anxiety about incorrectly performing therapeutic exercises for their child and places more responsibility on the caregiver. Majority reported that technical and internet problems with sound and image may be a limitation to using telehabilitation even though majority still had good willingness to use telerehabilitation. Socioeconomic status was identified as a determining factor of both level of knowledge and perception of telerehabilitation.

Conclusion/Recommendations: It was concluded that policies that support the integration of telerehabilitation into the national healthcare system for peadiatric population should be developed and implemented. In addition educational programmes targeted at improving both knowledge and perception of telerehabilitation especially among paediatric caregivers of low socioeconomic status should be designed, implemented and disseminated.

Keywords: Knowledge, Perception, Telerehabilitation, Paediatrics, Caregivers

Introduction

Telerehabilitation, a branch of telehealth involves the delivery of rehabilitation services to a recipient at a distance using information and communication technology.[1,2] Telerehabilitation incorporates the use of video and audio conferencing, text messaging, webcams, wearable technologies, sensor technologies, mobile health applications, virtual reality, robotics, therapeutic gaming technologies, etc., for service delivery.[2,3]

Telerehabilitation may include, but is not limited to, physiotherapy, speech therapy, and occupational therapy services.[4] In physiotherapy, telerehabilitation is also known as tele-physiotherapy.[5] Physiotherapists in different parts of the world are increasingly choosing this medium for delivering rehabilitation services.[6,7] Studies from developed countries have shown it to be as effective as in-person rehabilitation for many physiotherapy-related conditions.[8,9,] The utilization of telerehabilitation is not limited to developed settings only as there is evidence of its use in low-resource settings as well.[10-13]

Correspondence to:

M.B. Fatudimu
Department of Physiotherapy,
College of Medicine (UCH), University of Ibadan
PMB 5017 GPO Dugbe, Ibadan, Zip Code: 200212
Email: bukolafatudimu@yahoo.com
https://orcid.org/0000-0001-8909-0548

https://doi.org/10.64061/tjhs.v32i4.1

One of the principles in the delivery of telerehabilitation services requires that a facilitator or e-helper who can be a caregiver, family member or another authorized individual is present to meet the patient's needs before, during, and after the session.[2] This principle emphasizes the importance of the caregiver in telerehabilitation service delivery where a high caregiver engagement is said to be the most important for telehealth effectiveness.[8] In the possible recommendation of telerehabilitation for a child's management therefore, it is important that caregivers are knowledgeable about the benefits of telerehabilitation and their role in the process. However, there is a dearth of published studies on the level of knowledge and uptake of telerehabilitation among caregivers of paediatric physiotherapy patients in Nigeria hence this study was aimed at investigating the knowledge, perception and willingness to use telerehabilitation among caregivers of paediatric physiotherapy patients at selected hospitals in Ibadan, Nigeria.

Materials and Methods

Participants for this cross-sectional study were purposively recruited 196 consenting caregivers of paediatric physiotherapy patients who presented their children for treatment at the Physiotherapy outpatient clinic of University College Hospital, Ibadan and the Physiotherapy outpatient clinic of Oni Memorial Children's Hospital, Ibadan. Recruitment occurred between January 2024 and June 2024. Ethical approval for the study was granted by the Health Research Ethics Committee of the University of Ibadan/University College Hospital (UI/EC/24/002) before the commencement of the study. The Knowledge, Perception and Willingness to use telerehabilitation Questionnaire was used to assess the level of knowledge, perception and willingness to use telerehabilitation among caregivers of paediatric physiotherapy patients at selected hospitals in Ibadan, Nigeria. This questionnaire was adapted from the self-administered Tele-physiotherapy survey tool previously used.[14] Permission was obtained from the author before adapting the questionnaire. The questionnaire was validated for content coverage and relevance by a panel of experts from the University of Ibadan. The content-validated questionnaire comprised four (4) sections; Section A was used to obtain socio-demographic information such as age, sex and marital status. Section B was comprised of 8 items which was used to assess the Knowledge of Telerehabilitation. Correctly answered questions were scored 1 and incorrectly answered questions were scored 0. The minimum obtainable score is 0 and the maximum score is 8. Using the scores, knowledge was classified with reference values; 0-2 for poor knowledge, 3-5 for fair knowledge and 6-8 for good knowledge. Section C comprised of 15 statements which was used to assess the perceptions of the caregivers about telerehabilitation. The responses to the statements were strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Perception level was expressed on a Likert scale of 1-5. Scores on perception was classified as 15-35 for poor perception; 36-55 for fair perception and 56-75 for good perception. Section D comprised of 8 items and was used to assess the willingness to use telerehabilitation. The response is either yes or no. Yes was scored as 1 and no scored as 0. The scores were classified as 0-2 for poor willingness to use; 3-5 for fair willingness to use and 6-8 for good willingness to use. Scoring for sections B, C and D was obtained using, <33rd percentile of the total score as poor, <67th percentile as fair and ≥67th percentile as good knowledge, perception or willingness to use.

The Revised scoring tool for the Classification of Socio-economic Status in Nigeria was used to assess the socio-economic status of the caregivers of paediatric physiotherapy patients. The socio-economic variables**,** level of education, occupation and income was used to determine the socio-economic status of the caregivers.[15] This tool was adopted for use from its adapted version from Revised Scoring Tool for the Classification of Socio-economic Status in Nigeria by Ibadin and Akpede.[15] For the purpose of this study, the minimum annual income was updated to reflect the current minimum wage in Nigeria; N360,000 (N30,000/month) from N216,000 (N18,000/month). The three variables were graded on a six-point scale from 1 to 6. Score 1 represents the highest level and Score 6 represents the lowest level of each socioeconomic variable. The addition of scores of the three socioeconomic variables was divided by three (3) and approximated to the nearest whole number to classify the participants' socio-economic status. The socio-economic status of the participants was classified as Upper (1-2), Middle (3-4) or Lower class (5-6).[15]

Data analysis

Descriptive statistics of frequency, percentages and mean was used to summarize the data collected through socio-demographic and socio-economic questionnaire such as age, sex, marital status and socio-economic status.

Inferential statistics using the Chi-Square test was used to determine the association among;

I) The caregivers' level knowledge, perception and willingness to use telerehabilitation among caregivers of paediatric physiotherapy patients in Ibadan, Nigeria.

ii) Selected sociodemographic and socioeconomic

variables variables (age, sex, marital status), socio-economic status, and each of level knowledge, perception and willingness to use telerehabilitation among caregivers of paediatric physiotherapy patients in Ibadan, Nigeria. Level of significance was set at p value <0.05.

Results

The mean age of the caregivers was 37.04 ± 9.31years. Majority were females (n =165; 84.2%) and married (n = 170; 86.7%). The participants largely belonged to the middle socio-economic class (n= 140; 71.4%) .One hundred and fifteen participants (58.7%) had good knowledge of Telerehabilitation . Only fourteen

Table 1: Socio-demographic characteristics of participants (n=196)

Variable	Frequency	Percentage
Age (Years)		
18-25	17	8.7
26-35	82	41.8
36-45	71	36.2
46-55	12	6.1
56-65	13	6.6
>65	1	0.5
Sex		
Female	165	84.2
Male	31	15.8
Marital status		
Single	23	11.7
Married	170	86.7
Widowed	2	1
Divorced	1	0.5
Socioeconomic Status		
Upper	10	5
Middle	139	71
Lower	47	24
Education level		
Level 1: Postgraduate	12	6.1
Level 2: Bachelors/Higher National Diploma	78	39.8
Level 3: National Diploma / A' level	45	23
Level 4: Secondary School Certificate	45	23
Level 5: Primary School Certificate	15	7.7
Level 6: No formal education	1	0.5
Annual income (?)		
=60,000,000	2	1
12,000,000 – 59,000,000	11	5.6
6,000,000 – 10,800,000	18	9.2
1,320,000 – 5,400,000	34	17.3
360,000 – 1,308,000	88	44.9
<360,000	43	21.9
Occupational Level		
Level 1: Senior political/judicial/legislative office holders (federal and state); Top echelon of military and paramilitary; Heads of ministries, department, and agencies; Top level entrepreneurs and professionals.	9	4.6
Level 2: Top civil and public servants in directorate grade, senior military and paramilitary officers, senior academicians, senior politicians.	17	8.7
Level 3: Senior civil and public servants in non-directorate grade, and other skilled professionals.	53	27
Level 4: Intermediate civil and public servants, executive officers, senior clerical officers, junior school teachers.	42	21.4
Level 5: Clerical officers, assistants, and attendants, petty traders, subsistent farmer.	53	27
Level 6 : Retired, Unemployed, Full time housewives, students, artisans, and apprentices	22	11.2

Table 2: Summary of Level of Knowledge, Perception and Willingness to use Telerehabilitation by Participants (n=196)

Knowledge	Frequency	Percentage
Poor knowledge	8	4.1
Fair knowledge	73	37.2
Good knowledge	115	58.7
Perception		
Poor Perception	31	15.8
Fair Perception	151	77.0
Good Perception	14	7.1
Willingness to use		
Poor willingness to use	21	10.7
Fair willingness to use	35	17.9
Good willingness to use	140	71.4

Table 3 Association between Knowledge of Participants of Telerehabilitation and selected Socio-demographic Variables (n=196)

Variables	Poor n (%)	Fair n (%)	Good n (%)	χ^2	p-value
Age (Years)					
18-25	2 (11.8)	8 (47.1)	7 (41.2)		
26-35	1 (1.2)	26 (31.7)	55 (67.1)		
36-45	3 (4.2)	28 (39.4)	40 (56.3)	10.159	0.427
46-55	1 (8.3)	5 (41.7)	6 (50)		
56-65	1 (7.7)	5 (38.5)	7 (53.8)		
>65	0 (0)	1 (100)	0 (0)		
Sex					
Female	8 (4.8)	62 (37.6)	95 (57.6)	1.478	0.417
Male	0 (0)	11 (35.5)	20 (64.5)		
Marital status					
Single	0 (0)	12 (52.2)	11 (47.8)		
Married	8 (4.7)	60 (35.3)	102 (60)		
Widowed	0 (0)	1 (50)	1 (50)	4.062	0.668
Divorced	0 (0)	0 (0)	1 (100)		
Socio-economic status					
Upper	0 (0)	2 (22.2)	7 (77.8)		
Middle	4 (2.9)	45 (32.1)	91 (65)	14.358	0.006
Lower	4 (8.5)	26 (55.3)	17 (36.2)		

participants (7.1%) had a good perception of telerehabilation. Majority of the participants (71.4%) had a good willingness to use telerehabilitation. The caregivers' knowledge, perception and willingness to use telerehabilitation is summarized in Table 2.

There was a significant association between participants' socio-economic status and the knowledge of telerehabilitation (χ^2 = 14.358; p = 0.006). The association between the socio-demographic and socio-economic variables and the knowledge of telerehabilitation is summarized in the Table 3. The association between the perception of caregivers about telerehabilitation and the socio-demographic and socio-economic variables is summarized in Table 4. There was a significant association between

Table 4: Association between Participants' Perception of Telerehabilitation and selectedSocio-demographic and Socio-economic Variables (n=196)

Variables	Poor n (%)	Fair n (%)	Good n (%)	χ^2	P-value
Age (years)					
18-25	2 (11.8)	14 (82.4)	1 (5.9)		
26-35	15 (18.3)	57 (69.5)	10 (12.2)		
36-45	9 (12.7)	60 (84.5)	2 (2.8)	11.107	0.349
46-55	1 (8.3)	11 (91.7)	0 (0)		
56-65	4 (30.8)	8 (61.5)	1 (7.7)		
>65	0 (0)	1 (100)	0 (0)		
Sex					
Female	30 (18.2)	124 (75.2)	11 (6.7)	4.505	0.105
Male	1 (3.2)	27 (87.1)	3 (9.7)		
Marital status					
Single	3 (13)	17 (73.9)	3 (13)		
Married	28 (16.5)	132 (77.6)	10 (5.9)		
Widowed	0 (0)	2 (100)	0 (0)	15.29	0.018
Divorced	0 (0)	0 (0)	1 (100)		
Socio-economic status					
Upper	1 (11.1)	7 (77.8)	1 (11.1)		
Middle	15 (10.7)	114 (81.4)	11 (7.9)	12.394	0.015
Lower	15 (31.9)	30 (63.8)	2 (4.3)		

participants' sex and their willingness to use telerehabilitation ($\chi^2 = 6.45$, $p = 0.04$). The association between the willingness to use telerehabilitation and the socio-demographic and socio-economic variables is summarized in Table 5.

Discussion

The result from this study showed that a good proportion of the participants had good knowledge of telerehabilitation. This means that majority of the participants understood the concept of telerehabilitation. This could have been because majority of the participants had education beyond secondary school. Ramli et al., reported that a formal education background could be a factor in promoting knowledge about telerehabilitation services.[16] From the responses, a good percentage of the participants were knowledgeable about what telerehabilitation involves, they were aware that physiotherapy sessions can be done without the physiotherapist being physically present and were aware of their role as caregivers in telerehabilitation. Another plausible explanation for this result could be that caregivers have health seeking behaviours for their children which relates with using the internet and media for health-related information. Furthermore, the access to and use of the internet has increased considerably worldwide and access to media may be a factor influencing caregivers' health seeking behavior for their children.[17,18]

The result of this study revealed no significant association between the knowledge of participants about telerehabilitation and each of their age, sex and marital status. This implies that participants' age, sex and marital status were not significant factors that may have influenced the participants knowledge of telerehabilitation. However, results from this study showed a significant association between participants' socioeconomic status and their knowledge of telerehabilitation. From the results, majority of the participants who belonged to upper and middle socioeconomic class had good knowledge of telerehabilitation and more than half of participants who belonged to lower socioeconomic class had just a fair knowledge of telerehabilitation. Also, a larger percentage of participants that belonged to the lower socioeconomic class had poor knowledge of telerehabilitation compared to the percentage of participants that belonged to the middle socioeconomic class. None of the participants that belonged to the upper socioeconomic class had poor knowledge of telerehabilitation. From the findings of this study

majority of participants with higher education, occupation and income levels have better knowledge about telerehabilitation. This may be because the status affords them better access and exposure to information on telerehabilitation or telehealth services.

Findings from this study show that majority of the participants had a fair perception of telerehabilitation. This means that majority of the participants had more positive than negative perceptions of telerehabilitation. This may be because the growing use of smartphones, other gadgets and the internet worldwide, with the city of Ibadan not left out, may have made the participants more receptive to telehealth solutions. Majority of the participants agreed that their satisfaction for telerehabilitation for their child will be equivalent to conventional physiotherapy possibly because they believed that both forms of rehabilitation are equally effective. Majority of the participants in this study agreed that telerehabilitation takes less time than in-person physiotherapy. This may be because they believe traveling time and waiting time will be eliminated with telerehabilitation.[13] Results from this study showed that a good number of the caregivers agreed that telerehabilitation is cheaper than in-person physiotherapy. This could be because majority of the participants perceive telerehabilitation as a way to save cost incurred from transporting their children for physiotherapy. Majority of the participants agreed that communicating with the therapist with telerehabilitation is easier and more flexible than conventional physical therapy. This may be because the participants may have viewed digital communication methods as easier and faster methods to communicate with the physiotherapists.

A drawback to telerehabilitation as reported by more than half of the participants was that it may increase their anxiety about incorrectly performing therapeutic exercises for their child. A possible reason for this may be that the caregivers may feel less confident and probably uncomfortable implementing the exercises without the physical presence of the therapists.[19] This finding is similar to that of Mohammad et al. where caregivers reported that they might experience anxiety during the telerehabilitation sessions.[20] Also, majority of the participants in this present study reported that telerehabilitation may place more responsibility on the caregiver. This may be because telerehabiltation requires them to assist with exercises, set up equipment, and ensure that the child stays engaged throughout the session which might be perceived as increased reponsibility. This finding is similar to that of Assenza et al. where it was reported that paediatric caregivers are agreed that playing the role of the therapist with their child might be overwhelming.[21] In addition, more than half of participants in this study reported that technical and internet problems with sound and image may be a limitation to using telehabilitation. This may be because internet connectivity as well as electricity, required for powering technological devices, is not reliable in Nigeria. Anene et. al identified poor technical infrastructure resulting in slow internet connections as a key factor that hinders the successful implementation of Information Communication Technology (ICT) in Nigeria which is said to be further worsened by the lack of adequate power especially in low-income countries like Nigeria.[22]

Majority of the participants in this study had good willingness to use telerehabilitation. They were willing to choose telerehabilitation if it was an option. No significant association was obtained between participants' age, marital status, socioeconomic status and their willingness to use telerehabilitation. This means that participants may be willing to use telerehabilitation irrespective of their age, socioeconomic and marital status. This may be due to their recognition of potential benefits of telerehabilitation in the rehabilitative care of their children. There was a significant association between participants' sex and their willingness to use telerehabilitation. Indept look at the data from this study showed that almost all the male caregivers, had good willingness to use telerehabilitation compared to the percentage of female caregivers who had good willingness to use telerehabilitation.

There was a significant association between participants' knowledge and perception of telerehabilitation. This means that the knowledge of caregivers about telerehabilitation may influence their perception of telerehabilitation. From the results obtained in this study, a large percentage of participants with fair perception of telerehabilitation had fair and good knowledge of telerehabilitation and only participants with fair and good knowledge of telerehabilitation had good perception of telerehabilitation. Overall, participants in this study have good knowledge of telerehabilitation and fair perception of telerehabilitation. This may be because increased knowledge about telerehabilitation could have translated into positive perception of the effectiveness and potential of telerehabilitation as a means of delivering physiotherapy services for their children.

There was a significant association between participants' knowledge of and willingness to use telerehabilitation. This means that the knowledge of caregivers about telerehabilitation may influence their willingness to use telerehabilitation for their children. Results obtained showed that half of the participants

with poor knowledge about telerehabilitation had poor willingness to use telerehabilitation and more than half of participants with good knowledge of telerehabilitation had good willingness to use telerehabilitation. Overall, participants have good knowledge of telerehabilitation and good willingness to use telerehabilitation. This means that the caregivers may be more willing to use telerehabilitation if they understand what telerehabilitation entails and its potential benefits.

There was a significant association between participants' perception of and willingness to use telerehabilitation. This means that the caregivers' perception of telerehabilitation may influence their willingness to use telerehabilitation for their children. A large percentage of participants who had poor perception of telerehabilitation had poor willingness to use telerehabilitation. Furthermore majority of those with fair perception of telerehabilitation had good willingness to use telerehabilitation and almost all the participants who had good perception of telerehabilitation had good willingness to use telerehabilitation. Overall, results from this study showed that participants have a fair perception of telerehabilitation and a good willingness to use telerehabilitation. This means that the participants' positive perception of telerehabilitation may make them more willing to use telerehabilitation. The result obtained in this study is in agreement with the findings of Jewer conducted in Canada which showed a significant association between perception of telehealth services and the willingness to use telehealth services among caregivers.[23] Chen et al. in a study conducted in China also reported a significant association between paediatric caregivers' perception of telehealth services and their willingness to use telehealth services for their children.[24]

Conclusion

In conclusion more than half of the caregivers have good knowledge of telerehabilitation. Also, majority of participants who had good knowledge had good willingness to use telerehabilitation. Although a significant number of the caregivers have good knowledge of and good willingness to use telerehabilitation, majority of them have a fair perception of telerehabilitation. In addition, socioeconomic status may be a determining factor in the level of knowledge and perception of telerehabilitation as majority of participants of higher socioeconomic statuses had better knowledge and perception of telerehabilitation. Thus, a well-structured educational programme targeted at improving both knowledge and perception of telerehabilitation, especially among paediatric caregivers of low socioeconomic status should be designed, implemented and disseminated. These programmes should be designed to address specific misconceptions these groups of individuals may have and also provide practical demonstrations of how telerehabilitation works.

Conflict of Interest

The authors declare no conflict of interest in this research work

References

1. Taito S., Yamauchi K. and Kataoka Y. Telerehabilitation in Subjects with Respiratory Disease: A scoping review. *Respiratory Care* 2021; 66.4: 686–698.
2. Richmond T., Peterson C., Cason J., Billings M., Terrell E. A., Lee A. C. et.al. American Telemedicine Association's Principles for delivering Telerehabilitation services. *International Journal of Telerehabilitation* 2017; 9.2: 63–68.
3. Peretti A., Amenta F., Tayebati S. K., Nittari G. and Mahdi S. S. Telerehabilitation: Review of the State-of-the-Art and Areas of Application. *JMIR Rehabilitation and Assistive Technologies 2017* ;4.2: e7.
4. Ganapathy K. Telerehabilitation: An Overview. *Telehealth and Medicine Today* 2021; 6:285
5. Odole A. C., Odunaiya N. A., Ojo O. D. and Afolabi K. Tele-physiotherapy in Nigeria: perceived challenges by physiotherapists to its implementation. *International Journal of Telemedicine and Clinical Practices* 2015;1.2: 186-196.
6. Fernandes L. G., Oliveira R. F. F., Barros P. M., Fagundes F. R. C., Soares R. J., Saragiotto B. T. Physical therapists and public perceptions of telerehabilitation: An online open survey on acceptability, preferences, and needs. *Brazilian Journal of Physical Therapy* 2022;26.6:100464.
7. Rennie K., Taylor C., Corriero A. C., Chong C., Sewell E., Hadley J. A. et. al.The current accuracy, Cost-Effectiveness, and uses of musculoskeletal telehealth and telerehabilitation services. *Current Sports Medicine Reports* 2022; 21.7: 247–260.
8. Hall J. F., Luechtefeld J. T., Woods M. L. Pediatric Physical Therapists' Perceptions of telehealth continuation Post-pandemic: A Thematic Analysis of Open-Ended Survey Responses. *Pediatric Physical Therapy* 2022; 34.3: 353–360.
9. Dalbosco-Salas M., Torres-Castro R., Leyton A. R., Zapata F. M., Salazar E. H., Bastías G. E., et al. Effectiveness of a primary care telerehabilitation program for post-COVID-19 patients: A Feasibility study. *Journal of Clinical Medicine* 2021;10.19: 4428
10. Fatoye F., Fatoye C., Mbada C. E., Olaoye M. I., Odole A. C., Dada O. O. The Clinical and Cost-Effectiveness of Telerehabilitation for People with Nonspecific Chronic Low Back Pain: Randomized

Controlled Trial. *JMIR Mhealth and Uhealth* 2020; 8.6: e15375.
11. Odetunde M. O., Binuyo O. T., Maruf F. A., Ayenowowon S. O., Okonji A. M., Odetunde N. A. et al. Development and feasibility testing of video home based telerehabilitation for stroke survivors in resource limited settings. *International Journal of Telerehabilitation* 2022;12.2: 125–136.
12. Odole, A.C., Ojo, O.D. A Telephone-Based Physiotherapy Intervention for Patients with Osteoarthritis of the Knee. *International Journal of Tele-Rehabilitation.* 2013; 5(2): 11- 20
13. Odole A. C., Afolabi K. O., Ushie B. A., Odunaiya N. A. Views of physiotherapists from a low resource setting about physiotherapy at a distance: a qualitative study. *Advances in Physiotherapy* 2019; 22.1: 14–19.
14. Shalabi K.M., Almodaraa A.N., Alrajhi R.A., Alotaibi L.N., Batt W.H. Perceptions and understanding of tele-physiotherapy: A cross-sectional study in Saudi Arabia. *Technology and Disability* 2022;34.3: 141–152.
15. Ibadin M.O., Akpede G.O. 2021. A revised scoring scheme for the classification of socioeconomic status in Nigeria. *Nigerian Journal of Paediatrics* 2021;48.1: 26 – 33
16. Ramli N. N., Bahrin A. F., Ainulhakim A. P., Selvan D. Exploring the Awareness, Perception, Acceptability and Confidence Level Towards Telerehabilitation among Stroke Patients' Caregivers in the Federal Territory of Malaysia. *Borneo Journal of Medical Sciences 2024;* 18.1: 3–14.
17. Haimi M. The tragic paradoxical effect of telemedicine on healthcare disparities- a time for redemption: a narrative review. *BMC Medical Informatics and Decision Making (Online) 2023;* 23.1
18. Joseph P., Ilemona A. Parental socio-economic status and access to child healthcare utilization in Nigeria. Lafia journal of economics and management sciences 2019; 4.1:13-13.
19. Keary G., Corcoran N., Heavin C., O'Connor Y. Caregivers' perceptions of telehealth for child developmental screening in the community. *Online Journal of Nursing Informatics 2023;* 26.3
20. Mohammad A. S., Yaqoob S., Rehman A. U., Khan M. A., Malik J. H., Bari S., et al. Anxiety of Caregivers in Telerehabilitation Sessions During Covid 19. *Pakistan Journal of Medical & Health Sciences* 2022; *16*.7: 438– 440.
21. Assenza C., Catania H., Antenore C., Gobbetti T., Gentili P., Paolucci S. et al. Continuity of Care during COVID-19 Lockdown: A survey on stakeholders' experience with telerehabilitation. *Frontiers in Neurology 2021;* 11.
22. Anene J. N., Imam H., Odumuh T. Problem and Prospect e-learning in Nigerian universities. *International Journal of Technology and Inclusive Education* 2014; 3.2: 320–327.
23. Jewer J. Patients' intention to use online postings of ED wait times: A modified UTAUT model. *International Journal of Medical Informatics 2018;* 112: 34–39.
24. Chen H., Li H., Li L., Zhang X., Gu J., Wang Q., et al. Factors Associated with Intention to Use Telerehabilitation for Children with Special Needs: A Cross-Sectional Study. *Telemedicine and E- Health* 2024;30.5:1425-1435.