

Usage of Outcome Measuring Tools and Treatment Protocols of Bell's Palsy by Physical Therapists

Afreen Qadir, Tehreem Mukhtar, Qurat ul ain, Iqra Abdul Ghafoor, Saba Rafique and Hafiza Shabnum Noor

ABSTRACT

Objective: To evaluate usage of measuring tools and treatment protocols of Bell's palsy by physical therapists.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted through online survey in many cities of Pakistan. Data was collected in 6 months from 15 January 2020 to 15 June 2020.

Materials and Methods: All the Physiotherapists who had minimum one-year experience in clinical practice were included in the study. Self-design questionnaire which was made by the pilot project run circulate online for the data collection. Recorded values were analyzed by SPSS 26.

Results: The research was conducted on 300 PTs, within which 55% were male and 45% were females. The mean of PT's age was 34 years and standard deviation was ± 5.71 . 181(51.7%) PTs were doing only clinical practice whereas remaining 119(39.67%) were doing academic along with clinical practice. 30.67% PTs were implementing Evidence-based Practice(EBP) daily while 21%, 38.3%, and 10% were implementing Once in a week, Twice in a week and Monthly respectively. 75% PT's patients show better recovery when they implement EBP on the treatment of Bell's palsy. Out of 300, 40(13.33%) PTs respond that the patients of Bell's palsy show recovery after implement EBP in two weeks, 80(26.67%), 128(42.67%), 52(17.3%) PT's patients show recovery in 4 weeks, 6 weeks and 8 weeks respectively. 39.3% therapists are using sunny brook facial grading system for the assessment and treatment of Bell's palsy. 15%, 11.67% and 34% are using House Brackman, Sydney and other facial nerve grading system respectively.

Conclusion: The study concluded that by the usage of standardized and valid measuring tools along with EBP implementation in the assessment and treatment, the patients of Bell's palsy show better prognosis.

Key Words: Bell's palsy, assessment, diagnosis, physiotherapy, knowledge, attitude, practice, physical therapists

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INTRODUCTION

Bell's palsy is an idiopathic weakness or paralysis of facial muscles.⁽¹⁾ It is very common in people especially with other medical conditions like hypertension, diabetes or other heart diseases.⁽²⁾ One person in 70 people always suffer by the Bell's palsy in their lifetime. Cause of disease is idiopathic; therefore, people are more stressed about the disease. The researchers are still busy in finding the cause. Many researches indicate that the pregnant females are dispose to disease because of the accumulation of too

much fluid.⁽³⁾ After delivery the symptoms relieved automatically. Some conclude that the hypertensive patients are more prone to the disease. All the researches are proving different causes; therefore, the reason is not still proved scientifically. The symptoms are very problematic for the one who is suffering. The seventh cranial nerve of patient inflame or compressed.⁽⁴⁾ Due to that reason, the one side of the face droop and patient is not able to make facial expressions.⁽⁵⁾ The onset of Bell's palsy is very much problematic because it is effecting the facial appearance of patient and effect the facial expressions.⁽⁶⁾ The onset of palsy is rapid. Initially, it represents as weakness and patient can be careless about it but later on it can cause the total paralysis of one side.⁽⁷⁾ On the affected side, the smile and closing of eye will be more difficult. Patient may find eating and drinking as most difficult tasks.⁽⁸⁾ The Bell's palsy is temporary in some cases and after few weeks, symptoms will be gone without any kind of progress in disease. It can be occurred at any age or any time. The people of age 16 to 60 years are more effected by the disease. Sir Charles Bells was the first anatomist who describe the bell's palsy.⁽⁹⁾

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Bell's palsy is an idiopathic disease. It is still not clear why it is occurring but, in most cases, the herpes virus was involved.⁽¹⁰⁾ This virus is also activated in cold sores. It is not known as main cause because many other patients who are suffering from bell palsy, the virus is not found in them. The doctors and researchers believe that many other health conditions such as diabetes, hypertension or heart diseases cause weakness which results in Bell's palsy due to the inflammation of facial nerve. The Etiology of Bell's palsy is still unknown; hence the treatment is difficult to design.⁽¹¹⁾ Although the cause is not known but by the use of sunny brook facial grading system, the facial nerve damage can be evaluated and treated.⁽¹²⁾ The tool can measure the severity of paralysis easily and efficiently. The specificity of the scale is 0.85 and sensitivity is 0.9. The assessment of symmetry in resting state, voluntary movements level and synkinesis are composing to make a score. The scores are from 0-100 in which 0 is indicating complete paralysis and 100 is for normal functioning. The score below 70 is the indication in which the condition is not normal or there is no recovery. Hence, it is very suitable to use the tool for diagnosis and assessing patient present condition.^(13, 14) There are few more assessment scales for Bell's palsy. In one study the scale divides in three grading categories. These are Gross, regional and specific scales. The proposed gross scale was Botman and Jongkees, May, and Peitersen scales. Janssen, Smith, Adour and Swanson, and Yanagihara has categorize in regional grading systems. Stennert has devised as a specific criteria scale.⁽¹⁵⁾ The validity and reliability of all scales were good, only the Stennert and Yangaihara are not showing relatively good validity and reliability.⁽¹⁶⁾ For the management of bell's palsy many physiotherapy treatments are considered.⁽¹⁷⁾ For the recovery from Bell's palsy there are some physiotherapy treatments are recommended which will be helpful in the decreasing the inflammation of facial nerve and increase the blood circulation. In result, facial nerve relaxes and the symptoms will eliminate.⁽⁷⁾ The physiotherapy treatments include facial exercises, massage, and electrical stimulation. These treatments work fast in acute cases as compare to chronic. The recovery time can be reduced by facial exercises in acute stage as compare to moderate or severe cases.⁽¹⁸⁾ The aim of this study was to distinguish assessment and management in one study as well as the preferences of physiotherapists as well. In older studies, the researchers never find both things together by the experience of professional therapists in Pakistan. Additionally, the evaluation of KAPS were also going to implement on physical therapists for their considerations regarding assessment and management of Bell's palsy.

MATERIALS AND METHODS

The study design was descriptive/cross-sectional which was conducted through online survey in many cities of Pakistan. Data was collected with in duration of 6 months from 15 January 2020 to 15 June 2020. All the Physiotherapists who had minimum one-year experience in clinical practice either they are working in clinical or academic setup were included in the study. Physiotherapists who were not practicing were excluded. Undergraduates and internship physiotherapy students were also not included. Only those physiotherapists were including who are willingly agree to be a part of research sample. The physiotherapists data was confidential and only use for the research purpose. Self-design questionnaire which was made by the pilot project run. The tool was reviewed with 20 physiotherapists and finalize after adding all the suggestion and changes recommended by them. The questionnaires were circulated online to the PTs for the data collection. Recorded values were analyzed by SPSS 26. 350 Sample size was calculated by online Rao software.

RESULTS

The research was conducted on 300 PTs, within which 55% were male and 45% were females. The mean of PT's age was 34 years and standard deviation was ± 5.71 . 181(51.7%) PTs were doing only clinical practice whereas remaining 119(39.67%) were doing academic along with clinical practice. 30.67% PTs were implementing Evidence-based Practice daily while 21%, 38.3%, and 10% were implementing Once in a week, Twice in a week and Monthly respectively. 75% PT's patients show better recovery when they implement Evidence-based Practice on the treatment of Bell's palsy. Out of 300, 40(13.33%) PTs respond that the patients of Bell's palsy show recovery after implement EBP in two weeks, 80(26.67%), 128(42.67%), 52(17.3%) PT's patients show recovery in 4 weeks, 6 weeks and 8 weeks respectively. 39.3% therapists are using sunny brook facial grading system (SBFGS) for the assessment and treatment of Bell's palsy. 15%, 11.67% and 34% are using House Brackman (HB), Sydney and other facial nerve grading system respectively.

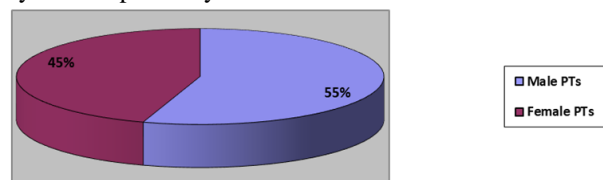


Figure No.1: Frequency of Physiotherapists according to gender

Table No.1: Demographics of PTs in frequency and percentages

Characteristics	Sub groups	Frequency & percentages
Age	Minimum	24
	Maximum	48
Gender	Male	165
	Female	135
Practice in years	Only clinical practice	181(60.33%)
	Academic with clinical practice	119(39.67)

Table No.1 shows the descriptive characteristics of the study

Table No.2: Frequency of PTs

	Frequency of PTs	Percent
Total participant PTs	300	100%
PTs in clinical practice	181	60.3%
PTs in both clinical and academic practice	119	39.67%

Table No.3: Assessment tool used for diagnosis of Bell's palsy

Assessment tools	Frequency	Percent
Sunny brook facial grading system	118	39.3%
House Brackman	45	15%
Sydney	35	11.67%
other facial nerve grading system	102	34%
Total	300	100%

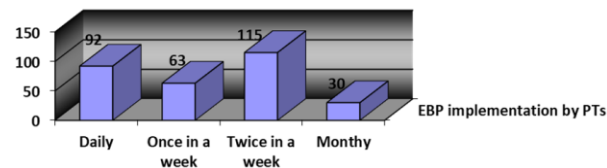
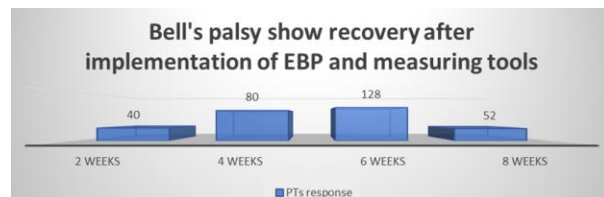


Figure No.2, 115(38.3%) PTs implementing EBP twice in a week



In figure No.3, 128(42.67%) PTs responds that patients of Bell's palsy show recovery after implement EBP in 6 weeks.

Table 2 shows that 300 PTs were participating in the study within which 181 PTs were doing only clinical

practice whereas 119 PTs were doing clinical practice as well as academics.

In table No.3, 118 PTs were using SBFGS which was 39.3% out of 300 PTs.

DISCUSSION

In 2020, Marotta N conducted a randomised control trial to evaluate the PTs preferences regarding the assessment and management of Bell's Palsy. In the study, different measurement tools were considered to see which one is better for assessment. By asking PTs, the comparison of all tools takes place. In the previous studies, it was found out that the correct assessment matters a lot in the better prognosis of pts.⁽¹⁹⁾ In this study, it was concluded that the patients can get better treatment and show better prognosis if the tools are used for facial nerve assessment. This study found that the patients of bell's palsy show better prognosis after **6 weeks** of providing effective evidence-based treatment. In 2020, Coulson SE indicates that the SBFGS and house brackmann are the best tool for the assessment of bell's palsy.⁽²⁰⁾ In this study, the tools which is better for assessment of facial nerve is SBFGS. **39%** PTs are using this tool for the assessment and management of Bell's palsy patients. In 2020, Bylund N conducted a prospective cohort study, the researchers only found that the attitude of physiotherapists regarding implementing EBP in their practice is positive. But they didn't specify how many times they are applying EBP in their practice.⁽²¹⁾ In 2020, this study describes that the knowledge, attitude, and practice of PTs towards the use of assessment and management of bells palsy. The study also assessed the 38% PTs implements EBP in practice twice in a week to evaluate their patients of Bells palsy. In 2017, Yahui HC conducted a survey in which he was comparing the usage of assesment tools to check the prognosis of bells palsy patients. But they never compared it with the attitude of PTs towards treatment along with the implementation of EBP.⁽²²⁾ This research was conducted to found the EBP implementation in the treatment of Bell's palsy patients and concludes that mostly PTs are applying EBP in their practice. The study also assessed the 38% PTs implements EBP in practice to evaluate patients of Bells palsy. The results were satisfactory but some PTs still need to take EBP implementation seriously as it is very much helpful in the better prognosis of pts. In 2017, Alshehri MA conducted a cross sectional study. He only found the implementation of EBP generally in clinical practice. They won't find it with the Bell's Palsy and also don't find anything about the recovery of patients after implementing EBP.⁽²³⁾ This research was conducted to found the EBP implementation in the treatment of Bell's palsy patients and concludes that mostly PTs are applying EBP in their practice especially while they are treating bell's palsy patients. 75% PTs found better

recovery in their pts of bells palsy after implementing EBP.

CONCLUSION

The study concluded that by the usage of standardized and valid measuring tools along with EBP implementation in the assessment and treatment, the patients of Bell's palsy show better prognosis.

Author's Contribution:

Concept & Design of Study: Tehreem Mukhtar
 Drafting: Afreen Qadir, Saba Rafique
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 Revisiting Critically: Qurat ul Ain
 Final Approval of version: Tehreem Mukhtar

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

- Chen N, Zhou M, He L, Zhou D, Li N. Acupuncture for Bell's palsy. *Cochrane Database of Systematic Reviews* 2010(8).
- Yanagihara N, Hyodo M. Association of diabetes mellitus and hypertension with Bell's palsy and Ramsay Hunt syndrome. *Annals of Otolaryngology Rhinology Laryngol* 1988;97(6_suppl3):5-7.
- Qadir A, Tanveer F, Arshad HS. Frequency and effects of bell's palsy in multigravida of 3rd trimester. *Int J Rehabilitation Sci (IJRS)* 2017;5(01):13-6.
- Cayir S, Hizli O, Kayabasi S. Is C-reactive protein to albumin ratio an indicator of poor prognosis in Bell's palsy? *Eur Archives Oto-Rhino-Laryngol* 2020;277(1):115-9.
- Huang W. Energy alterations and chakras energy deficiencies in the pathophysiology of bells palsy. *J Neurol Experimental Neural Sci* 2020.
- Vakharia K, Vakharia K. Bell's palsy. *Facial Plastic Surgery Clinics* 2016;24(1):1-10.
- George E, Richie MB, Glastonbury CM. Facial nerve palsy: Clinical Practice and Cognitive Errors. *Am J Med* 2020.
- Majeed A, Festi Lova MV, Ahsan A. Clinical Manifestations of Bell's palsy: A Case Report.
- Neil EE. 50 Years Ago in The Journal of Pediatrics: Comments on Current Literature: Bell's Palsy in Children. *J Pediatr* 2019;208:213.
- Ordoñez G, Rivas V, Santos M, Mondragon M, Pineda B, Rodríguez K, et al. Herpes viruses in optic neuritis: Similar to Bell's palsy. *Clin Neurol Neurosurg* 2020;188:105588.
- Zhang W, Xu L, Luo T, Wu F, Zhao B, Li X. The etiology of Bell's palsy: a review. *J Neurol* 2019:1-10.
- Puls WC, Jarvis JC, Ruck A, Lehmann T, Guntinas-Lichius O, Volk GF. Surface electrical stimulation for facial paralysis is not harmful. *Muscle Nerve* 2020;61(3):347-53.
- Berg T, Bylund N, Marsk E, Jonsson L, Kanerva M, Hultcrantz M, et al. The effect of prednisolone on sequelae in Bell's palsy. *Archives Otolaryngol-Head Neck Surg* 2012;138(5):445-9.
- Abd Elfattah M, Eliwa EA, Abdelal IT, Ebaid AM. Role of Electroneurography as a Prognostic Indicator for Bell's Palsy Patients. *Zagazig University Med J* 2019.
- Urban E, Volk GF, Geißler K, Thielker J, Dittberner A, Klingner C, et al. Prognostic factors for the outcome of Bells' palsy: a cohort register based study. *Clin Otolaryngol* 2020.
- House JW. Facial nerve grading systems. *Laryngoscope* 1983;93(8):1056-69.
- Javaherian M, Attarbashi MB, Bashardoust TS, Dabbaghipour N. Efficacy of low-level laser therapy on management of Bell's palsy: a systematic review. *Lasers Med Sci* 2020.
- Somasundara D, Sullivan F. Management of Bell's palsy. *Australian Prescriber* 2017;40(3):94.
- Marotta N, Demeco A, Inzitari MT, Caruso MG, Ammendolia A. Neuromuscular electrical stimulation and shortwave diathermy in unrecovered Bell palsy: A randomized controlled study. *Medicine* 2020;99(8).
- Coulson SE, Croxson GR, Adams RD, O'Dwyer NJ. Reliability of the "Sydney," "Sunnybrook," and "House Brackmann" facial grading systems to assess voluntary movement and synkinesis after facial nerve paralysis. *Otolaryngology-Head and Neck Surg* 2005;132(4):543-9.
- Yahui HC, Swaminathan N. Knowledge, attitudes, and barriers towards evidence-based practice among physiotherapists in Malaysia. *Hong Kong Physiotherapy J* 2017;37:10-8.
- Bylund N, Hultcrantz M, Jonsson L, Marsk E. Quality of Life in Bell's Palsy: Correlation with Sunnybrook and House-Brackmann Over Time. *Laryngoscope* 2020.
- Alshehri MA, Alalawi A, Alhasan H, Stokes E. Physiotherapists' behaviour, attitudes, awareness, knowledge and barriers in relation to evidence-based practice implementation in Saudi Arabia: a cross-sectional study. *Int J Evidence-Based Healthcare* 2017;15(3):127.