

Stroke

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1. Early identification of stroke through deep learning with multi-modal human speech and movement data

Authors: Ou, Zijun;Wang, Haitao;Zhang, Bin;Liang, Haobang;Hu, Bei;Ren, Longlong;Liu, Yanjuan;Zhang, Yuhu;Dai, Chengbo;Wu, Hejun;Li, Weifeng and Li, Xin

Publication Date: /01/01/ ,2025

Journal: Neural Regeneration Research 20(1), pp. 234-241

Abstract: JOURNAL/nrgr/04.03/01300535-202501000-00031/figure1/v/2024-05-14T021156Z/r/image-tiff Early identification and treatment of stroke can greatly improve patient outcomes and quality of life. Although clinical tests such as the Cincinnati Pre-hospital Stroke Scale (CPSS) and the Face Arm Speech Test (FAST) are commonly used for stroke screening, accurate administration is dependent on specialized training. In this study, we proposed a novel multimodal deep learning approach, based on the FAST, for assessing suspected stroke patients exhibiting symptoms such as limb weakness, facial paresis, and speech disorders in acute settings. We collected a dataset comprising videos and audio recordings of emergency room patients performing designated limb movements, facial expressions, and speech tests based on the FAST. We compared the constructed deep learning model, which was designed to process multi-modal datasets, with six prior models that achieved good action classification performance, including the I3D, SlowFast, X3D, TPN, TimeSformer, and MViT. We found that the findings of our deep learning model had a higher clinical value compared with the other approaches. Moreover, the multi-modal model outperformed its single-module variants, highlighting the benefit of utilizing multiple types of patient data, such as action videos and speech audio. These results indicate that a multi-modal deep learning model combined with the FAST could greatly improve the accuracy and sensitivity of early stroke identification of stroke, thus providing a practical and powerful tool for assessing stroke patients in an emergency clinical setting. (Copyright © 2025 Copyright: © 2025 Neural Regeneration Research.)

2. Comparison of Spectral and Temporal Processing Abilities between Adults with Stroke and Healthy Peers

Authors: Ali Akbari, Fateme Molla;Mehrkian, Saeideh;Afshari, Parisa Jalilzadeh and Bakhshi, Enayatollah

Publication Date: /07// ,2024

Journal: Auditory & Vestibular Research (2423-480X) 33(3), pp. 235-242

Abstract: Background and Aim: Perception of speech in noise (SIN) is based on the accurate extraction of spectral and temporal cues. Disruption of this process can reduce the productivity of the spectral and temporal features of the target stimulus and speech recognition in noise. Auditory processing disorder is one of the main challenges of people with stroke, which leads to social, mental, and even physical failures. This study aimed to investigate the spectral and temporal processing abilities of people with stroke compared to healthy peers. Methods: In this study, participants were 15 patients with stroke referred to the neurology clinic of Imam

Khomeini Hospital and 30 healthy people aged 20–60 years. Spectral Modulation Detection Test (SMDT), Pitch Pattern Sequencing Test (PPST), Random Gap Detection Test (RGDT) and QuickSIN tests were performed for all participants. The mean scores of the two groups were compared. Results: Patients with stroke had poorer performance in SMDT, PPST, RGDT and QuickSIN tests ($p < 0.001$) compared to healthy subjects. The results showed that there was a significant correlation between SIN test with temporal and spectral processing in the normal group, but the correlation pattern was different in people with stroke. The scores of all the tests were not significantly different between the right and left ears. Conclusion: The results showed that people with stroke have poorer performance in all tests compared to normal people and have more problems in speech perception in challenging areas.

3. Stroke in Tuberculous Meningitis

Authors: Becerra-Aguiar, Naomi; Jiménez-Ruiz, Amado; Gutierrez-Baeza, Daniel; Aguilar-Fuentes, Victor and Ruiz-Sandoval, Jos

Publication Date: /09/30/ ,2024

Journal: Acta Neurologica Taiwanica 33(3), pp. 143-145

Abstract: A 17-year-old male presented with a 20-day history of vomiting, abdominal pain, weight loss, headache and fever progressing to dysarthria, somnolence, urinary incontinence, slurred speech, weakness, and inability to walk. Neurological examination revealed diminished visual acuity and diplopia. A head computed tomography (CT) showed acute hydrocephalus (Figure 1). Cerebrospinal fluid (CSF) analysis revealed pleocytosis (lymphocyte predominant), hypoglycorrachia (8 mg/dL), and hyperproteinorrachia (156 mg/dL). The brain magnetic resonance imaging (MRI) revealed leptomeningitis, basal ganglia infarcts and basal meningeal enhancement highly suggestive of tuberculous meningitis (TBM) (Figure 2). We calculated a positive Thwaites score (-5) for TBM. The patient responded well to antituberculous treatment and dexamethasone. At 2 year follow-up the patient remains symptom-free. Stroke is a frequent complication of TBM and might contribute to long-term disability. Brain imaging findings, such as basal meningeal enhancement and basal exudates, hydrocephalus, and infarctions (TBM triad) are useful tools to rapidly identify probable TBM(3,4). Brain infarcts in TBM are located mostly in the arterial territory of distal branching arterioles(5). Other less frequent imaging findings are tuberculomas and vasospasm. Key message: Hydrocephalus, basal meningeal enhancement, and basal ganglia infarcts should raise suspicion of tuberculosis, especially in endemic regions.

4. What influences provision of information about recovery on stroke units? A focused ethnographic case study

Authors: Burton, Louisa-Jane; Forster, Anne; Johnson, Judith; Crocker, Thomas F.; Tyson, Sarah F. and Clarke, David J.

Publication Date: /09// ,2024

Journal: Patient Education and Counseling 126, pp. 108331

Abstract: Objective: Patients and carers frequently report dissatisfaction with post-stroke information provision. This study aimed to develop an in-depth understanding of the factors influencing provision of information about recovery in stroke units.; Methods: Focused ethnographic case-studies in two UK stroke units, including non-participant observations and semi-structured interviews with professionals, patients and carers, and documentary analysis. A Framework approach to analysis was undertaken.; Results: Twenty patients, 17 carers and 47 professionals participated. The unpredictable recovery trajectory led professionals to present prognostic estimates as uncertain possibilities. The need to maintain patients' motivation limited sharing of negative predictions, and generic information over-emphasised the importance of therapy in recovery. A structured multidisciplinary team approach to delivering information improved consistency. Complex clinical reasoning was required to identify and meet patients' needs. Hospital environments and routines restricted opportunities for dialogue, particularly with carers.; Conclusions: The process of providing information about post-stroke recovery is complex, requiring enhanced clinical reasoning and communication. The challenges faced by professionals are numerous and if not addressed can result in suboptimal provision.; Practice Implications: Professionals should develop a co-ordinated multidisciplinary approach to information provision; and engage in dialogue to ensure a tailored approach to identifying and meeting patients' and carers' information needs.; Competing Interests: Declaration of Competing Interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:Louisa-Jane Burton reports financial support was provided by The Stroke Association. Louisa-Jane Burton, Anne Forster, Thomas F Crocker report a relationship with Leeds Hospitals Charity that includes: funding grants. Anne Forster and Thomas F Crocker declare the following activity which may be considered a potential competing interest: authorship of the Cochrane review 'Information provision for stroke survivors and their carers'. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. (Copyright © 2024 The Authors. Published by Elsevier B.V. All rights reserved.)

5. The obstetrical consequences of ischemic stroke in women of childbearing age

Authors: David, Jeremy;Desmurs-Clavel, Helene;Mechtouff, Laura;Long, Anne;Dargaud, Yesim and Catella, Judith

Publication Date: /07// ,2024

Journal: Archives of Gynecology & Obstetrics 310(1), pp. 405-412

6. The effects of cognitive-linguistic interventions to treat aphasia in the first 90 days post-stroke: A systematic review

Authors: Eley, Emily;van den Berg, Maayken;Rose, Miranda L.;Pierce, John E.;Foster, Abby;Lamborn, Edwina;D'Souza, Sarah;Godecke, Erin;Lanyon, Lucette;Shiggins, Ciara;Kneebone, Ian and Baker, Caroline

Publication Date: /08// ,2024

Journal: Aphasiology 38(8), pp. 1351-1376

Abstract: Cognitive-linguistic interventions for aphasia are behavioural-based approaches to therapy that aim to treat language impairment skills post-acquired brain injury. The purpose of cognitive-linguistic intervention is to restore and rehabilitate language impairment skills through targeting phonologic, semantic and syntactic systems, which may support goals to improve everyday communication. The aim of this systematic review was to investigate the effects of cognitive-linguistic interventions on language processing for aphasia in the first 90 days post-stroke. Secondary aims include the investigation of the effects of these interventions on functional communication and quality of life. A systematic search was conducted across six databases. Twenty-one studies met the predefined eligibility criteria and were included in the review. Studies were rated for methodological quality and data extracted. A narrative synthesis was completed and conducted for all included studies. Four studies were suitable for meta-analysis. Evidence for the effects of cognitive-linguistic intervention for aphasia in the first 90 days post-stroke is inconclusive. Intervention approaches included constraint-induced intervention, melodic intonation therapy and study specific cognitive-linguistic intervention. Multiple studies investigated the use of computers as a mode of intervention delivery or to increase the frequency of intervention or session duration. Improvement on language outcomes was associated with positive effects on functional communication, regardless of the specific intervention. There were mixed results for quality-of-life outcomes. Further research is required to guide aphasia intervention the first 90 days post stroke, a time critical period for recovery and rehabilitation. Research reports should include adequate description of participant characteristics and consistent use of intervention protocols and outcome measures. Providing a clear description of theoretical underpinnings and detailed information regarding the components of intervention will also facilitate future research synthesis.

7. Outcomes of Mechanical Thrombectomy for Acute Ischemic Stroke in Cancer Patients: A Single-Center Experience and Meta-Analysis

Authors: Elmarawany, Mohamed N.;El Malky, Islam;Winklhofer, Sebastian;Katan, Mira;Kar, Souvik and Baltasvias, Gerasimos

Publication Date: /10// ,2024

Journal: Neurology.Clinical Practice 14(5), pp. e200320

Abstract: Background and Objectives: The published data about mechanical thrombectomy (MT) in cancer patients is sparse. We present our institutional experience in this clinical scenario, and a meta-analysis.; Methods: The baseline data, procedural data, clinical and radiological outcomes of MT were analyzed and compared among three groups of stroke patients: controls, patients with active malignancy (AM), and patients with history of malignancy (HOM). A meta-analysis of 12 studies was conducted to address the differences between controls and AM patients regarding selected outcomes.; Results: The 3 groups (controls, AM, HOM) showed significant differences regarding previous history of stroke or TIA (7.8% vs 10.5% vs 38.5%, $p = 0.006$), alcohol consumption (0.9% vs 10.5% vs 0.0%, $p = 0.04$), thrombophilia (1.7% vs 15.8% vs 7.7%, $p = 0.009$), deep venous thrombosis (0.4 vs 26.3% vs 7.7%, $p = 0.005$). The AM group had significantly higher rates of sICH (3.5% controls] vs 21.1% AM] vs 0.0% HOM], $p = 0.007$), and mortality at 3 months (27.5% controls] vs 61.5% AM] vs 40.0% HOM] vs, $p = 0.032$). The control and HOM groups had significantly better functional independence at 3 months (52.1% controls] vs 15.4% AM] vs 60.0% HOM], p

= 0.032). In the meta-analysis, the AM arm showed significantly higher mortality during hospitalization (n = 6, OR 95% CI = 3.03 1.62, 5.64], and at 3 months (n = 10, OR 95% CI = 4.33 2.80, 6.68]), and significantly lower rates of 3 months functional independence (mRS = 0-2) (n = 10, OR 95% CI = 0.47 0.32, 0.70]). No significant difference was found in sICH rates (n = 6, pooled OR 95% CI = 2.03 0.83, 4.95)].; Discussion: Endovascular MT is technically successful and reasonably safe in treating AIS from LVO in active malignancy patients. However, the causes and implications of sICH require further investigation. Despite technical success, these patients experience poor clinical outcomes, and the long-term benefits of MT remain uncertain.; Competing Interests: The authors report no relevant disclosures. Full disclosure form information provided by the authors is available with the full text of this article at [Neurology.org/cp](https://www.neurology.org/cp). (© 2024 American Academy of Neurology.)

8. Cognitive and emotional impairment in stroke survivors: insights from a multi-center study on inpatient rehabilitation therapy

Authors: Jin, Lihua;Zhao, Ying;Ye, Ting;He, Ying and Yao, Liqing

Publication Date: /07// ,2024

Journal: Brain Injury 38(8), pp. 630-636

Abstract: Individuals recovering from stroke often experience cognitive and emotional impairments, but rehab programs tend to focus on motor skills. The aim of this investigation is to systematically assess the change of magnitude of cognitive and emotional function subsequent to a conventional rehabilitative protocol administered to stroke survivors within a defined locale in China. This is a multicenter study; a total of 1884 stroke survivors who received in-hospital rehabilitation therapy were assessed on admission (T0) and discharge (T1). The tool of InterRAI was used to assess cognitive, emotional, and behavioral abnormality. The patients aged >60 years, with a history of hypertension, and long stroke onset duration were more exposed to functional impairment (all $p < 0.05$). Both cognitive and emotional sections were significantly improved at T1 compared to T0 ($p < 0.001$). Initially, 64.97% and 46.55% of patients had cognitive or emotional impairment at T0, respectively; this percentage was 58.55% and 37.15% at T1. Many stroke survivors have ongoing cognitive and emotional problems that require attention. It is essential to focus on rehabilitating these areas during the hospital stay, especially for older patients, those with a longer recovery, and those with hypertension history.

9. Exploring the personal stroke and rehabilitation experiences of older adults with chronic stroke during the COVID-19 pandemic: a qualitative descriptive study

Authors: Lee, Nicole P.;Pearson, Erin S.;Sanzo, Paolo and Klarner, Taryn

Publication Date: /12// ,2024

Journal: International Journal of Qualitative Studies on Health and Well-Being 19(1), pp. 2331431

Abstract: Purpose: The purpose of this study was to explore the personal stroke and

rehabilitation experiences of older adults with chronic stroke living in a mid-sized Northwestern Ontario city in Canada during the COVID-19 pandemic.; Methods: A qualitative descriptive approach with a constructivist worldview was used. In addition, a semi-structured interview guide was used to gather the participants' perspectives on their experiences throughout stroke recovery. Ten participants were interviewed, including six males and four females. The interviews were completed, transcribed, and analysed using inductive and deductive content analysis. Multiple steps were taken to enhance data trustworthiness.; Results: Six main themes and eight related subthemes emerged. These included: getting help is complex, the effects of stroke are multifaceted, losing rehabilitation services during the COVID-19 pandemic, overcoming hardships but not alone, "If you don't use it, you lost it": rehabilitative success is based on one's actions, and "look at me now": the importance of taking pride in one's successes.; Conclusions: One unique finding was that the participants used this study as an opportunity to teach and advocate for future stroke survivors which is not often seen in qualitative stroke rehabilitation research. Future stroke research should place emphasis on both the positive and negative experiences of this population.

10. Acceptability of two mobile applications to support cross-sectoral, person-centred and empowering stroke rehabilitation - a process evaluation

Authors: Marwaa, Mille Nabsen; Guidetti, Susanne; Ytterberg, Charlotte and Kristensen, Hanne Kaae

Publication Date: /12// ,2024

Journal: Annals of Medicine 56(1), pp. 2302979

Abstract: Aim: To evaluate the acceptability of two co-designed mobile applications [Mit Sygehus a knowledge-based solution] and Genoptræn.dk a self-training solution] to support a cross-sectoral, person-centred and empowering stroke rehabilitation.; Setting: The applications were implemented and tested throughout two stroke rehabilitation trajectories in Southern Denmark, comprising two acute, two sub-acute and two municipal stroke rehabilitation settings.; Methods, Participants and Analysis: A process evaluation focusing on acceptability was conducted. Individual and dyadic interviews were performed with ten stroke survivors (three women and seven men, aged 50-84) with moderate stroke and seven significant others (five women and two men, aged 50-78) post-rehabilitation. A constructivist Grounded Theory analysis was used to explore what, why, when, and how the apps worked or did not work throughout the stroke rehabilitation trajectory and if adaptations were needed.; Results: Participants found that Mit Sygehus provided adequate and sufficient knowledge and was easy to use, however, acceptability of Mit Sygehus declined throughout the rehabilitation process. Also, knowledge on 'return-to-work' and 're-gaining driver's license/permission to drive' needed to be developed. The content in Genoptræn.dk was perceived as acceptable, through content being person-centred, motivating and meaningful. Genoptræn.dk furthermore, supported the transfer between rehabilitation settings, provided a sense of progress throughout the rehabilitation process, facilitated positive habits regarding self-training, and relieved the burden on significant others. Genoptræn.dk was perceived most acceptable in the sub-acute rehabilitation setting and declined when rehabilitation continued in the municipal setting.; Conclusion: Stroke survivors and their significant others found Mit Sygehus and Genoptræn.dk acceptable to support cross-sectoral, person-centred and empowering stroke rehabilitation,

however acceptability declined throughout the rehabilitation process. Further investigations are required to determine how cognitive rehabilitation can play a greater role in app-supported stroke rehabilitation and how the need for more long-term follow-up can be supported.

11. Factors Associated With Anxiety After Hemorrhagic Stroke

Authors: Olivera, Anlys;Ecker, Sarah;Lord, Aaron;Gurin, Lindsey;Ishida, Koto;Melmed, Kara;Torres, Jose;Zhang, Cen;Frontera, Jennifer and Lewis, Ariane

Publication Date: //Winter ,2024

Journal: The Journal of Neuropsychiatry and Clinical Neurosciences 36(1), pp. 36-44

Abstract: Objective: A significant number of patients develop anxiety after stroke. The objective of this study was to identify risk factors for anxiety after hemorrhagic stroke that may facilitate diagnosis and treatment.; Methods: Patients admitted between January 2015 and February 2021 with nontraumatic hemorrhagic stroke (intracerebral ICH] or subarachnoid SAH] hemorrhage) were assessed telephonically 3 and 12 months after stroke with the Quality of Life in Neurological Disorders Anxiety Short Form to evaluate the relationships between poststroke anxiety (T score >50) and preclinical social and neuropsychiatric history, systemic and neurological illness severity, and in-hospital complications.; Results: Of 71 patients who completed the 3-month assessment, 28 (39%) had anxiety. There was a difference in Glasgow Coma Scale (GCS) scores on admission between patients with anxiety (median=14, interquartile range IQR]=12-15) and those without anxiety (median=15, IQR=14-15) ($p=0.034$), and the incidence of anxiety was higher among patients with ICH (50%) than among those with SAH (20%) ($p=0.021$). Among patients with ICH, anxiety was associated with larger median ICH volume (25 cc IQR=8-46] versus 8 cc IQR=3-13], $p=0.021$) and higher median ICH score (2 IQR=1-3] versus 1 IQR=0-1], $p=0.037$). On multivariable analysis with GCS score, hemorrhage type, and neuropsychiatric history, only hemorrhage type remained significant (odds ratio=3.77, 95% CI=1.19-12.05, $p=0.024$). Of the 39 patients who completed the 12-month assessment, 12 (31%) had anxiety, and there was a difference in mean National Institutes of Health Stroke Scale scores between patients with (5 IQR=3-12]) and without (2 IQR=0-4]) anxiety ($p=0.045$). There was fair agreement ($\kappa=0.38$) between the presence of anxiety at 3 and 12 months.; Conclusions: Hemorrhage characteristics and factors assessed with neurological examination on admission are associated with the development of poststroke anxiety.; Competing Interests: The authors report no financial relationships with commercial interests.

12. Wellbeing After Stroke (WATER): Feasibility Testing of a Co-developed Acceptance and Commitment Therapy Intervention to Support Psychological Adjustment After Stroke

Authors: Patchwood, Emma;Foote, Hannah;Vail, Andy;Cotterill, Sarah;Hill, Geoff and Bowen, Audrey

Publication Date: /07// ,2024

Journal: Clinical Rehabilitation 38(7), pp. 979-989

Abstract: Objective: Feasibility test a co-developed intervention based on Acceptance and Commitment Therapy to support psychological adjustment post-stroke, delivered by a workforce with community in-reach. Design: Observational feasibility study utilising patient, carer, public involvement. Setting: Online. UK. Participants: Stroke survivors with self-reported psychological distress 4 + months post-stroke. Interventions: The co-developed Wellbeing After Stroke (WATERs) intervention includes: 9-weekly, structured, online, group sessions for stroke survivors, delivered via a training programme to upskill staff without Acceptance and Commitment Therapy experience, under Clinical Psychology supervision. Main measures: Feasibility of recruitment and retention; data quality from candidate measures; safety. Clinical and demographic information at baseline; patient-reported outcome measures (PROMs) via online surveys (baseline, pre- and post-intervention, 3 and 6 months after intervention end) including Mood (hospital anxiety and depression scale (HADS)), Wellbeing (ONS4), Health-Related Quality of Life (EQ5D5L), Psychological Flexibility (AAQ-ABI) and Values-Based Living (VQ). Results: We trained eight staff and recruited 17 stroke survivors with mild-to-moderate cognitive and communication difficulties. 12/17 (71%) joined three intervention groups with 98% attendance and no related adverse events. PROMS data were well-completed. The HADS is a possible future primary outcome (self-reported depression lower on average by 1.3 points: 8.5 pre-group to 7.1 at 3-month follow-up; 95% CI 0.4 to 3.2). Conclusion: The WATERs intervention warrants further research evaluation. Staff can be trained and upskilled to deliver. It appears safe and feasible to deliver online to groups, and study recruitment and data collection are feasible. Funding has been secured to further develop the intervention, considering implementation and health equality.

13. End-of-Life Symptoms in Adult Patients With Stroke in the Last Two Years of Life: An Integrative Review

Authors: Ramsburg, Hanna; Moriarty, Helene J. and MacKenzie Greenle, Meredith

Publication Date: /07// ,2024

Journal: American Journal of Hospice & Palliative Medicine 41(7), pp. 831-839

Abstract: Background: Stroke is a leading cause of death globally, yet End-of-Life (EOL) symptoms and their management in these patients are not well understood. Purpose: This integrative review aims to critique and synthesize research on EOL symptoms and symptom management in adult patients with stroke in the last 2 years of life in all settings. Methods: The Whittemore and Knafl integrative review methodology guided this review. PubMed, CINAHL, Scopus, Web of Science, and Google Scholar were used for the literature search. Included studies were published in English and quantitatively examined symptoms and symptom management. Quality appraisal was guided by the Effective Public Health Practice Project (EPHPP) assessment tool. Results: Seven studies, all rated weak, were included in this review. A total of 2175 adult patients from six countries were represented. Results are classified into three main themes: EOL symptom experience, symptom assessment, and symptom management. Commonly reported EOL symptoms among adults with stroke include both stroke-specific (dysphagia, dysarthria) and non-specific symptoms (pain, dyspnea, constipation, and psychological distress). However, communication difficulties and the infrequent use of standardized tools for symptom assessment limit what is known about the

EOL symptom experience. Although the relief of pain is generally well-documented, dyspnea and anxiety are much more poorly controlled. Conclusions: There is a need for better assessment and management of EOL symptoms in patients with stroke. Established palliative and EOL care guidelines need to be incorporated into clinical practice to ensure access to high-quality care.

14. Aphasia subsequent to stroke in adults with Williams syndrome or autism: A review

Authors: Silva, Sierra;Phillips, Rhiannon;Bloss, Jamie E. and Walenski, Matthew

Publication Date: /08// ,2024

Journal: Aphasiology 38(8), pp. 1390-1396

Abstract: Aphasia is an acquired neurogenic language disorder that is often caused by stroke in adulthood. However, how does aphasia present, and how can it be effectively treated, in a neurodivergent adult with pre-existing differences in language or cognition? To confirm our intuitions that there are few published cases of aphasia resulting from stroke in adults with either Williams syndrome or autism, we searched for articles from 1990 to 2022 across multiple publication databases. For Williams syndrome, the search revealed two cases of aphasia, but few details were provided. No clear adult cases of autism with aphasia were found, though two potential cases were discovered. Despite the paucity of cases, we discuss how researchers and clinicians might meet the specific needs of these populations in relation to the assessment and treatment of aphasia.

15. The reliability, validity and clinical utility of the Clinical Outcomes in Routine Evaluation – ten-item version (CORE-10) in post-acute patients with stroke

Authors: Steverson, Tom;Marsden, Joseph and Blake, Joshua

Publication Date: /07// ,2024

Journal: Clinical Rehabilitation 38(7), pp. 944-954

Abstract: Objective: To explore the validity, reliability, and clinical utility of the Clinical Outcomes in Routine Evaluation – ten-item version (CORE-10: a ten-item questionnaire designed to measure psychological distress) in a stroke inpatient sample and calculate reliable and clinically significant change scores. Setting: A post-acute stroke rehabilitation ward in the East of England. Participants: A total of 53 patients with stroke, capable of completing the CORE-10 as part of their routine clinical assessment. Exclusion criteria included moderate to severe aphasia and/or alexia. Main measures: Alongside the CORE-10, the Patient Health Questionnaire – 9, the Hospital Anxiety and Depression Scale, the Centre for Epidemiological Studies-Depression Scale, and the Beck Depression Inventory Second Edition were used as concurrent measures. Results: To assess reliability, the internal consistency and test–retest reliability of the CORE-10 were calculated. The average number of days between CORE-10 test–retest administrations was 2.84 (SD = 3.12, Mdn = 1). Concurrent validity was assessed by examining correlations between the CORE-10 and comparable measures, and clinical utility was assessed using the criteria of Burton and Tyson (2015). The internal consistency

(Cronbach's alpha) for the CORE-10 was .80, and test–retest reliability interclass correlation coefficient was .81. Total score correlations between the CORE-10 and concurrent measures ranged from $r = .49$ to $r = .89$. The CORE-10 achieved the maximum score (i.e. 6/6) on criteria for clinical utility. Calculations demonstrated a reliable change index of nine points and a clinically significant change cut point of 12 on the CORE-10. Percentiles for CORE-10 total scores are reported. Conclusions: This study provides preliminary support for the CORE-10 as a valid and reliable measure that has clinical utility for screening distress in inpatients with stroke.

16. Peripheral inflammation and trajectories of depressive symptomology after ischemic stroke: A prospective cohort study

Authors: Sun, Wenzhe; Yang, Zhaoxia; Wang, Yanyan; Miao, Jinfeng; Pan, Chensheng; Li, Guo; Liang, Wenwen; Zhao, Xin; Lan, Yan; Qiu, Xiuli; Wang, Hao; Chen, Man and Yang, Yuan

Publication Date: /08/15/ ,2024

Journal: Journal of Affective Disorders 359, pp. 14-21

Abstract: Background: Understanding the association of peripheral inflammation and post-stroke depressive symptomology (PSDS) might provide further insights into the complex etiological mechanism of organic depression. However, studies focusing on the longitudinal patterns of PSDS were limited and it remained unclear whether peripheral inflammation influences the occurrence and development of PSDS.; Methods: A total of 427 prospectively enrolled and followed ischemic stroke patients were included in the analytical sample. Depressive symptomology was assessed on four occasions during 1 year after ischemic stroke. Peripheral inflammatory proteins on admission and repeated measures of peripheral immune markers in three stages were collected. Latent class growth analysis (LCGA) was employed to delineate group-based trajectories of peripheral immune markers and PSDS. Multinomial regression was performed to investigate the association of peripheral inflammation with PSDS trajectories.; Results: Four distinct trajectories of PSDS were identified: stable-low ($n = 237$, 55.5 %), high-remitting ($n = 120$, 28.1 %), late-onset ($n = 44$, 10.3 %), and high-persistent ($n = 26$, 6.1 %) PSDS trajectories. The elevation of peripheral fibrinogen on admission increased the risk of high-persistent PSDS in patients with early high PSDS. Additionally, chronic elevation of innate immune levels might not only increase the risk of high-persistent PSDS in patients with early high PSDS but also increase the risk of late-onset PSDS in patients without early high PSDS. The elevation of adaptive immune levels in the convalescence of ischemic stroke may contribute to the remission of early high PSDS.; Conclusions: Peripheral immunity could influence the development of PSDS, and this influence might have temporal heterogeneity. These results might provide vital clues for the inflammation hypothesis of PSD.; Competing Interests: Declaration of competing interest All authors declare that they have no conflicts of interest. (Copyright © 2024 Elsevier B.V. All rights reserved.)

17. To make a long story short: A descriptive study of formulaic language use in post-stroke fluent aphasia

Authors: Torrington Eaton, Catherine and Thomas, Sarah

Publication Date: /07// ,2024

Journal: Aphasiology 38(7), pp. 1180-1194

Abstract: Language sample analysis is a common tool for inventorying an individual's linguistic strengths and weaknesses. Although most research has focused on quantifying propositional or novel language production, studies suggest that individuals with aphasia, specifically nonfluent aphasia, produce high percentages of formulaic language relative to healthy controls. To date, little is known about how individuals with fluent aphasia subtypes use formulaic language and how the elicitation task influences their production. The purpose of this research was to comprehensively describe patterns of formulaic language use in various discourse tasks in language samples of individuals with fluent aphasia. The retrospective analysis included discourse samples from Aphasiabank from 142 individuals with anomic, conduction, and Wernicke's aphasia across four monologic discourse tasks. After identifying and classifying formulaic items into nine types, percentages of formulaic language were calculated for each participant and discourse task. Non-parametric statistics and Pearson's correlations were used to compare production patterns and explore relationships between language severity and formulaic item types. Unique patterns of formulaic language were observed across groups including lower proportions of fillers in individuals with Wernicke's aphasia and higher proportions of yes/no variants and speech formulas in individuals with conduction aphasia. Production patterns were most influenced by discourse task in individuals with anomic aphasia. Formulaic language use did not correlate with aphasia severity as measured by aphasia quotient. Findings add to the evidence base describing formulaic language usage in individuals with post-stroke aphasia, which serves as a necessary foundation for eventual clinical application.

18. Portable robots for upper-limb rehabilitation after stroke: a systematic review and meta-analysis

Authors: Tseng, Kevin C.; Wang, Le; Hsieh, Chunkai and Wong, Alice M.

Publication Date: /12// ,2024

Journal: Annals of Medicine 56(1), pp. 2337735

Abstract: Background: Robot-assisted upper-limb rehabilitation has been studied for many years, with many randomised controlled trials (RCTs) investigating the effects of robotic-assisted training on affected limbs. The current trend directs towards end-effector devices. However, most studies have focused on the effectiveness of rehabilitation devices, but studies on device sizes are relatively few.; Goal: Systematically review the effect of a portable rehabilitation robot (PRR) on the rehabilitation effectiveness of paralysed upper limbs compared with non-robotic therapy.; Methods: A meta-analysis was conducted on literature that included the Fugl-Meyer Assessment (FMA) obtained from the PubMed and Web of Science (WoS) electronic databases until June 2023.; Results: A total of 9 studies, which included RCTs, were completed and a meta-analysis was conducted on 8 of them. The analysis involved 295 patients. The influence on upper-limb function before and after treatment in a clinical environment is analysed by comparing the experimental group using the portable upper-limb rehabilitation robot with the control group using conventional therapy. The result

shows that portable robots prove to be effective (FMA: SMD = 0.696, 95% = 0.099 to .293, $p < 0.05$).; Discussion: Both robot-assisted and conventional rehabilitation effects are comparable. In some studies, PRR performs better than conventional rehabilitation, but conventional treatments are still irreplaceable. Smaller size with better portability has its advantages, and portable upper-limb rehabilitation robots are feasible in clinical rehabilitation.; Conclusion: Although portable upper-limb rehabilitation robots are clinically beneficial, few studies have focused on portability. Further research should focus on modular design so that rehabilitation robots can be decomposed, which benefits remote rehabilitation and household applications.

19. Best Practice in Post-Stroke Aphasia Services According to People with Lived Experience. A Modified Nominal Group Technique Study

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Abstract: Clinical practice guidelines and best practice statements aim to optimise patient outcomes through recommended processes of care. The Aphasia United Best Practice Recommendations were developed to provide multi-national best-practice guidance for post-stroke aphasia services. The recommendations were developed through a multi-stage process which synthesised research evidence and the expert opinions of clinicians and researchers. To date, however, people with lived experience of aphasia have not contributed their expertise to these recommendations. To explore the relevance, comprehensibility, and comprehensiveness of the Aphasia United Best Practice Recommendations, from the perspective of people with aphasia and their significant others. Conducted during the COVID-19 pandemic, a secondary aim was to evaluate participants' satisfaction with videoconferencing for research. People with aphasia and their significant others participated in separate focus groups via videoconferencing. Participants were recruited at five Australian sites (representing major cities and regional locations). Participants rated the relevance and comprehensibility (clarity) of the recommendations and suggested improvements. Using the nominal group technique, participants assessed the comprehensiveness of the existing recommendations, and generated and prioritised new items for inclusion. These recommendations were synthesised across groups using qualitative content analysis. Participants rated their satisfaction with videoconferencing for research through a bespoke questionnaire. People with aphasia (n=13) and their significant others (n=10) participated in one of eight focus groups in Australia. Most participants rated the existing recommendations as highly relevant, however improvements to comprehensibility and comprehensiveness were suggested. Fifty-one new recommendations were prioritised and synthesised into seven themes for people with aphasia and six themes for significant others. The most highly ranked theme for people with aphasia was, Increased awareness about: what aphasia is, the impacts of aphasia, and how to communicate with a person with aphasia. The theme ranked most highly by significant others was, Aphasia services should be person and family centred. All participants reported being satisfied or highly satisfied with the use of Zoom videoconferencing for research. People with aphasia and their

significant others in Australia identified new important best practice recommendations for aphasia services. The results of this study suggest that revisions to existing recommendations may improve their relevance, comprehensibility, and comprehensiveness. Participants were satisfied with the use of videoconferencing for research. The results of this research will inform a future consensus process to finalise the revised recommendations and to pair them with measurable quality indicators for post-stroke aphasia services.

20. A comparison of endovascular therapy and medical management in patients with large vessel occlusion mild stroke treated between 2015 and 2023: a systematic review and meta-analysis

Authors: Xu, Yiqiao;Liu, Xin and Li, Hao

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Journal: Journal of Stroke & Cerebrovascular Diseases 33(7), pp. N.PAG

21. Exploring the potential molecular intersection of stroke and major depression disorder

Authors: Zhao, Yuan;Sun, Wenzhe;Fan, Qinlin;Huang, Yanjie;Ma, Yufan;Zhang, Shuang;Gong, Changxiong;Wang, Bingqiao;Zhang, Wanyun;Yang, Qingwu and Lin, Sen

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Journal: Biochemical and Biophysical Research Communications 720, pp. 150079

Abstract: Stroke and major depression disorder are common neurological diseases, and a large number of clinical studies have shown that there is a close relationship between the two diseases, but whether the two diseases are linked at the genetic level needs to be further explored. The purpose of this study was to explore the comorbidity mechanism of stroke and major depression by using bioinformatics technology and animal experiments. From the GEO database, we gathered transcriptome data of stroke and depression mice (GSE104036, GSE131712, GSE81672, and GSE146845) and identified comorbid gene set through edgR and WGCNA analyses. Further analysis revealed that these genes were enriched in pathways associated with cell death. Programmed cell death gene sets (PCDGs) are generated from genes related to apoptosis, necroptosis, pyroptosis and autophagy. The intersection of PCDGs and comorbid gene set resulted in two hub genes, Mkl and Nlrp3. Single-cell sequencing analysis indicated that Mkl and Nlrp3 are mainly influential on endothelial cells and microglia, suggesting that the impairment of these two cell types may be a factor in the relationship between stroke and major depression. This was experimentally confirmed by RT-PCR and immunofluorescence staining. Our research revealed that two specific genes, namely, Mkl and Nlrp3, play crucial roles in the complex mechanism that links stroke and major depression. Additionally, we have predicted six possible therapeutic agents and the outcomes of docking simulations of target proteins and drug molecules.; Competing Interests: Declaration of competing interest All authors declare no conflict of interest. (Copyright © 2024 Elsevier Inc. All rights reserved.)

22. A scoping review of factors associated with self-management in young adults with stroke

Authors: Zhou, Zifang;Fang, Xiaoqun;Huang, Youhong;Hu, Jiangyu;Zhang, Kaibing and Jia, Shulei

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Journal: Patient Education & Counseling 125, pp. N.PAG