Stroke recovery and improving post stroke quality of life

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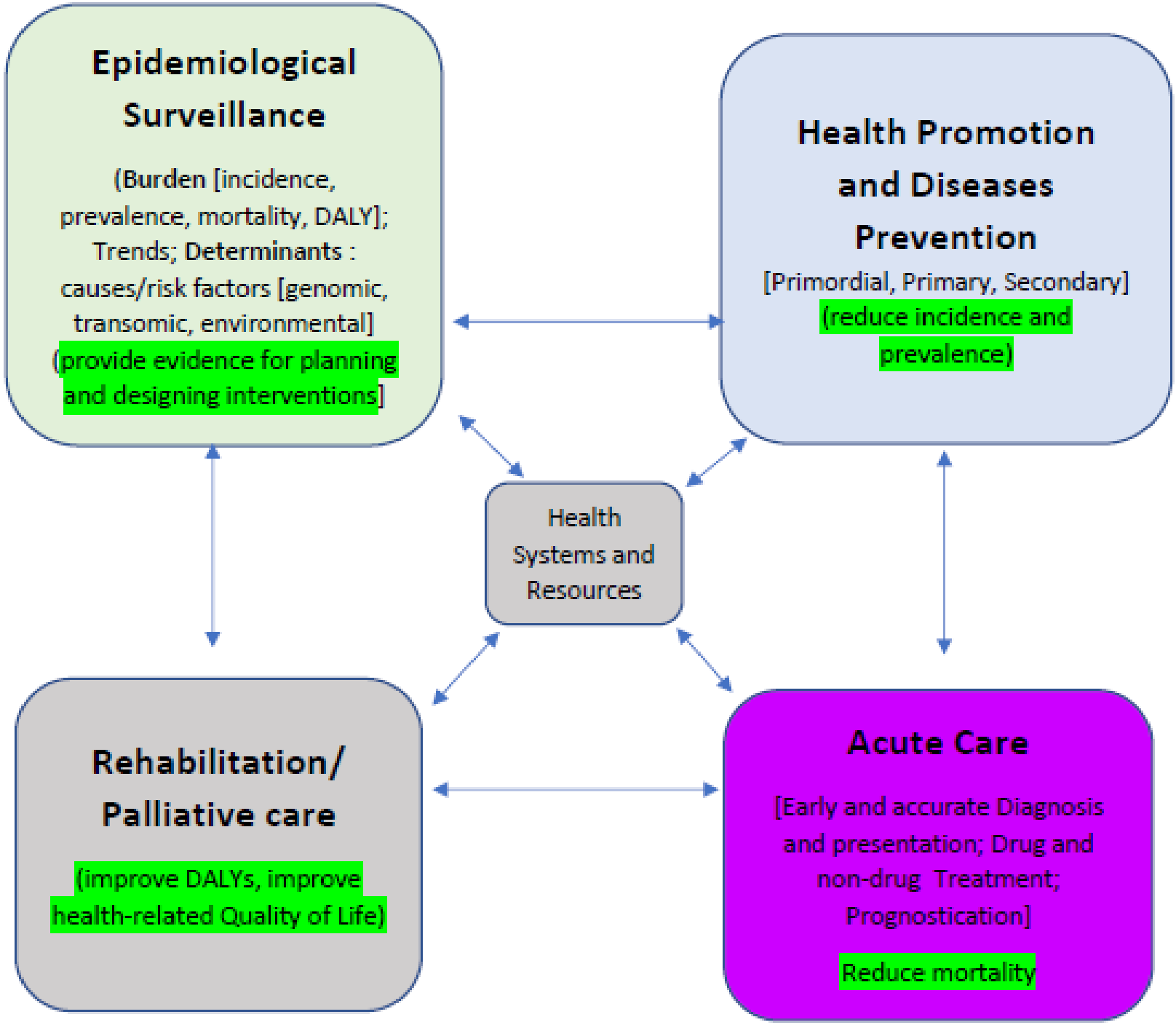
Stroke Quadrangle across the life course



Five Rs of stroke rehabilitation

- The key purposes of rehabilitation can be summarized as the "five Rs":
  - Realisation of potential: ensuring that the duration of contact with therapy staff has been sufficiently long to observe a plateau phase in recovery
  - Re-enablement: focusing on promoting independence in daily living skills such as walking and dressing
  - Resettlement: helping the person to leave hospital feeling safe, well supported, and confident
  - Role fulfilment: helping the person to re-establish their status and personal autonomy
  - Readjustment: helping the person to adapt to and accept a new lifestyle

Models of neurorehabilitation

- The humanistic model incorporates compassion and empathy by the caregivers and is aimed at the patient's self-growth and self-actualization. The therapy is made as pleasant and enjoyable as possible sometimes including sporting, recreational and creative activities.
- Holistic model

Philosophical anthropology

- Hartmann's model distinguished different strata that constituted body, mind and spirit in a hierarchical pattern with the spirit at the top of the other two
- Scheler distinguished three layers, the spirit being the centre and the other two layers around it . (concentric)
- The SOLM was derived from extensive literature research, multidisciplinary consultations, and discussion with stroke patients , It was based on extensive exploration of the (often neglected) belief systems of stroke patients and reinforced by analysis of the philosophies of Socrates, Plato, Aristotle, Descartes, Spinoza and Leibniz

Philosophical anthropology

- The SOLM is an advancement over previous theories describing the nature of human beings.
- The SOLM proposes a combined hierarchical and concentric model, recognising a spirit domain within and above the soul domain, both of which are on top and within the other two layers

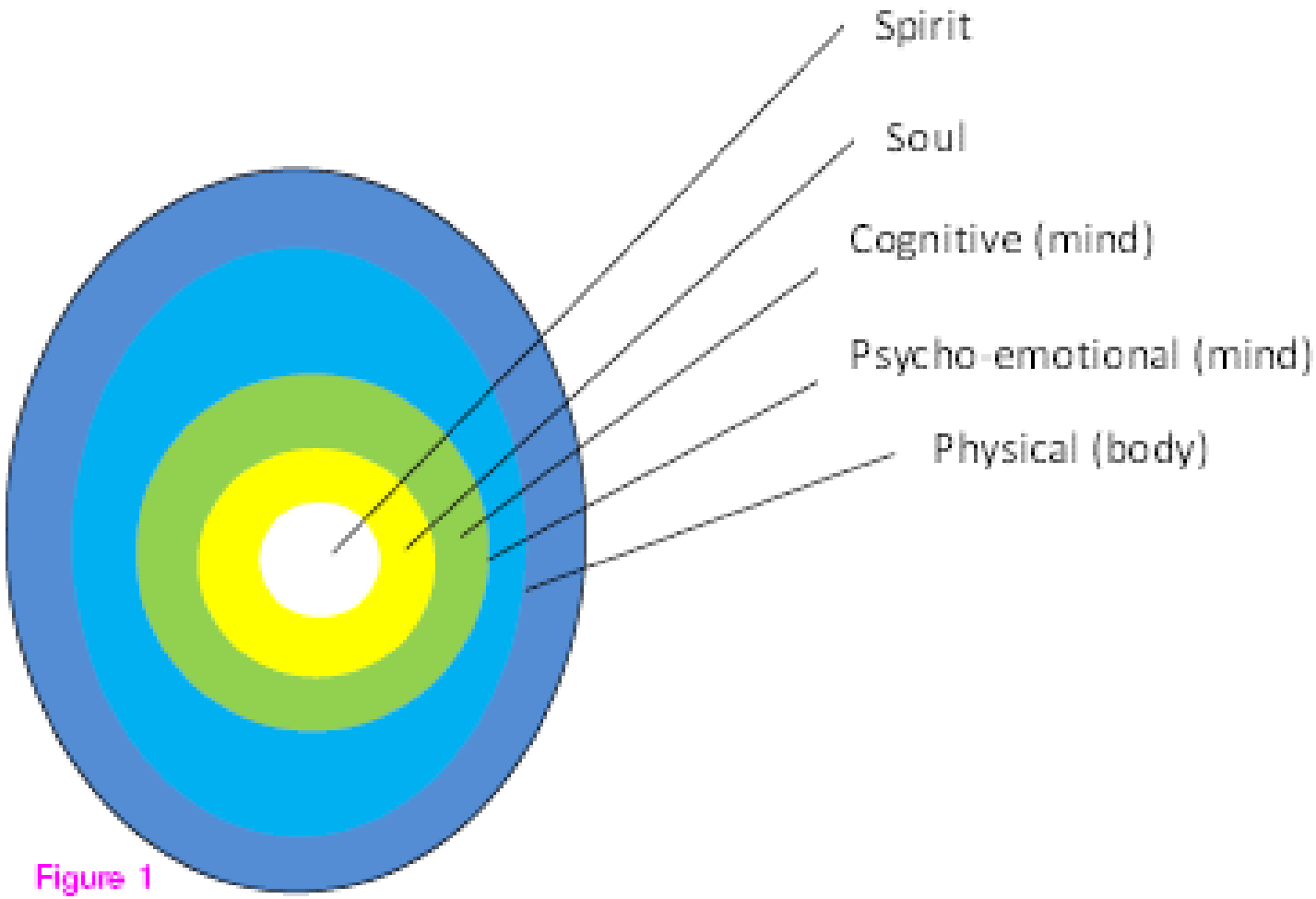


Figure 1

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Health related quality of life and the seed of life model

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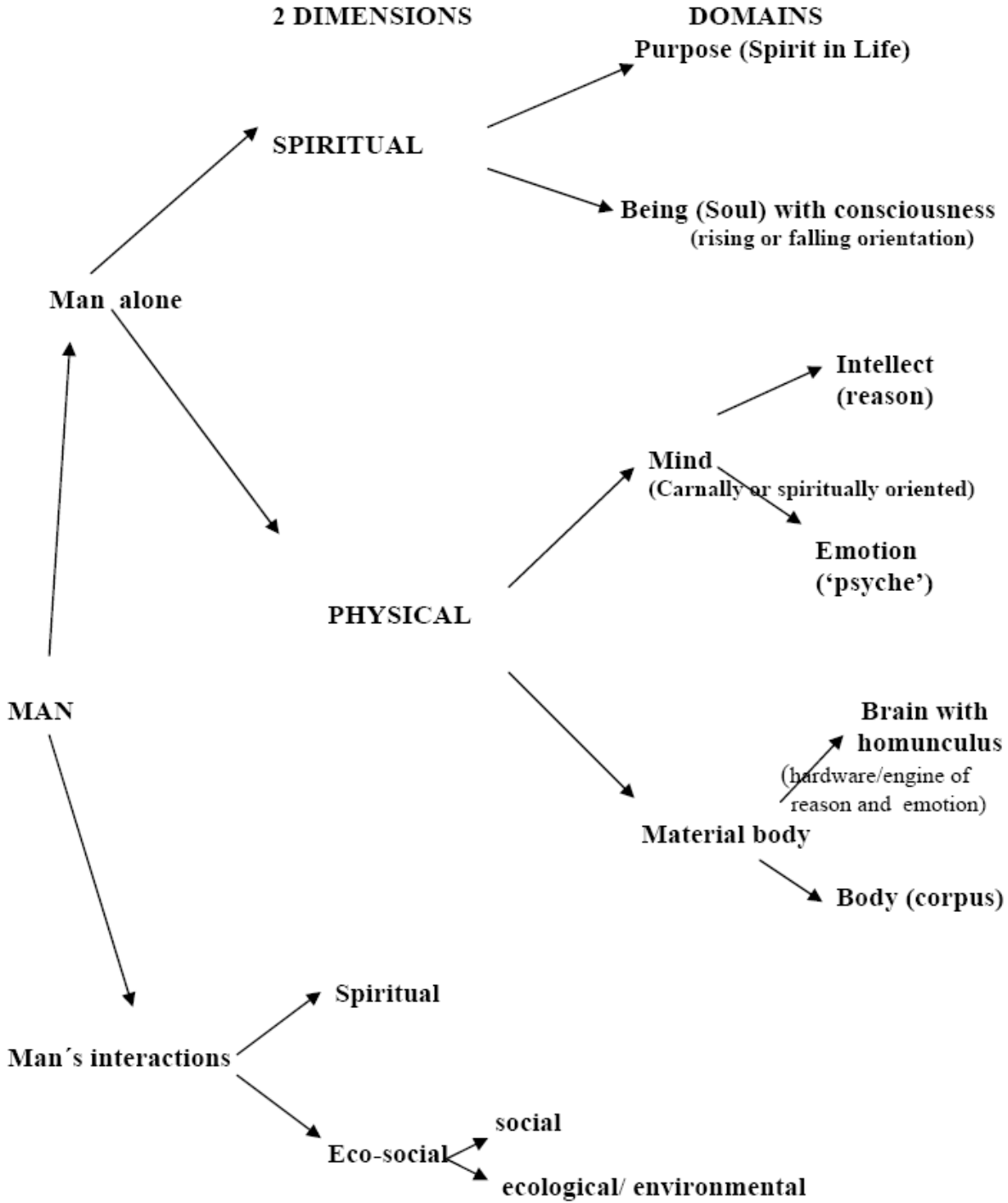
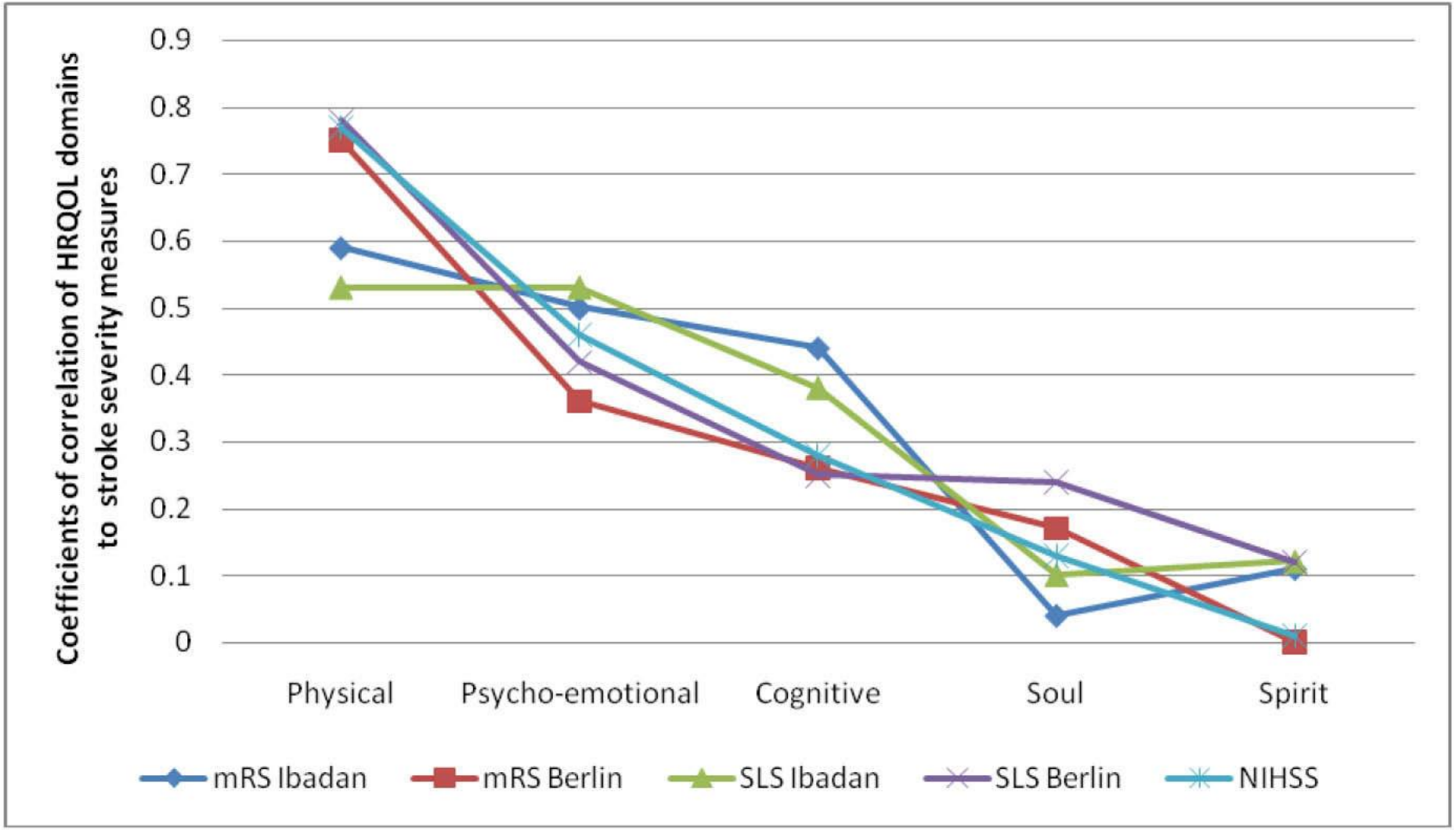
Abstract

A living form will continue in its state of rest or uniform motion regardless of the action of environmental force(s), because it has intrinsic will, energy, force and capable of growth, self-determination and purposeful interaction. The seed of life model proposes that man's life consists of physical and spiritual dimensions. The physical dimension comprises body and mind, while the spiritual dimension consists of the soul (being) and spirit (perpetual purpose, true life). The advanced ability to think and originate plans, creativity and intuition driven by perpetual purpose is what distinguishes human being from other animals. The supreme purpose of the human being is to achieve true and perpetual life, and to dwell in infinite freedom and joy. Quality of life is the extent to which this supreme purpose of life is fulfilled. The health-related quality of life of an individual is the perceived extent of his multidimensional functioning and wellbeing with respect to the fulfilment of his aspirations and expectations.

Keywords: Life, social life, essence of life, purpose of life, quality of life, model, health-related quality of life.

Introduction


2 DIMENSIONS
DOMAINS
Purpose (Spirit in Life)
SPIRITUAL
Being (Soul) with consciousness
(rising or falling orientation)
Man alone
Intellect
(reason)
Mind
(Carnally or spiritually oriented)
Emotion
('psyche')
PHYSICAL
MAN
Brain with
homunculus
(hardware/engine of
reason and emotion)
Material body
Body (corpus)
Spiritual
Man´s interactions
social
Eco-social
ecological/ environmental



Spiritual sphere relatively spared

Owolabi *Health and Quality of Life Outcomes* 2011, **9**:81
http://www.hqlo.com/content/9/1/81

HEALTH AND QUALITY OF LIFE OUTCOMES

RESEARCH Open Access

Impact of stroke on health-related quality of life in diverse cultures: the Berlin-Ibadan multicenter international study

Mayowa O Owolabi[1,2]

Impact of stroke on HRQOL

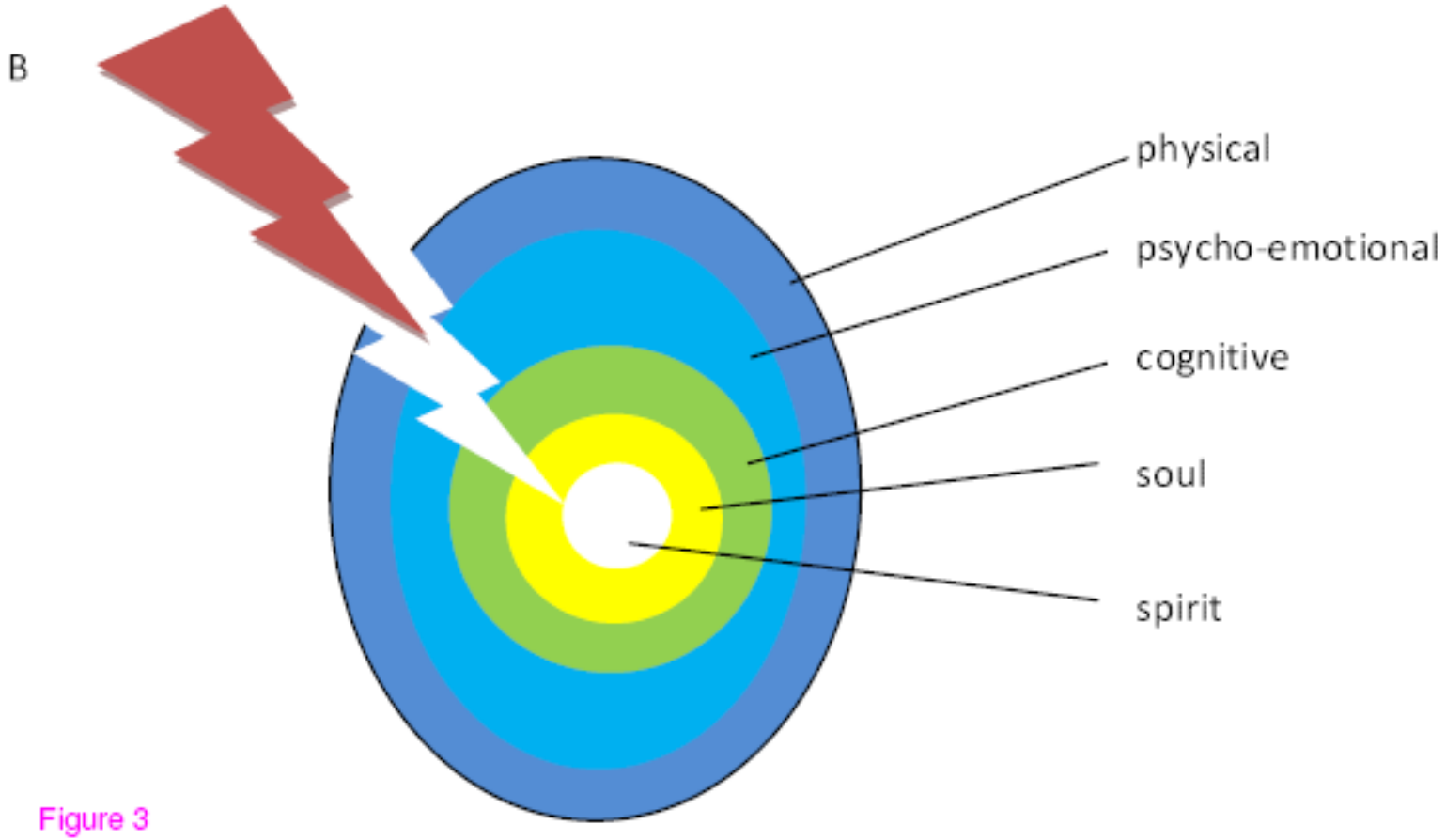
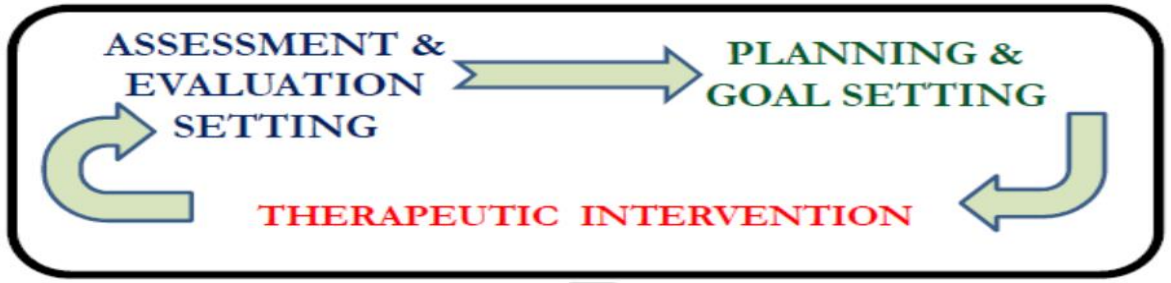


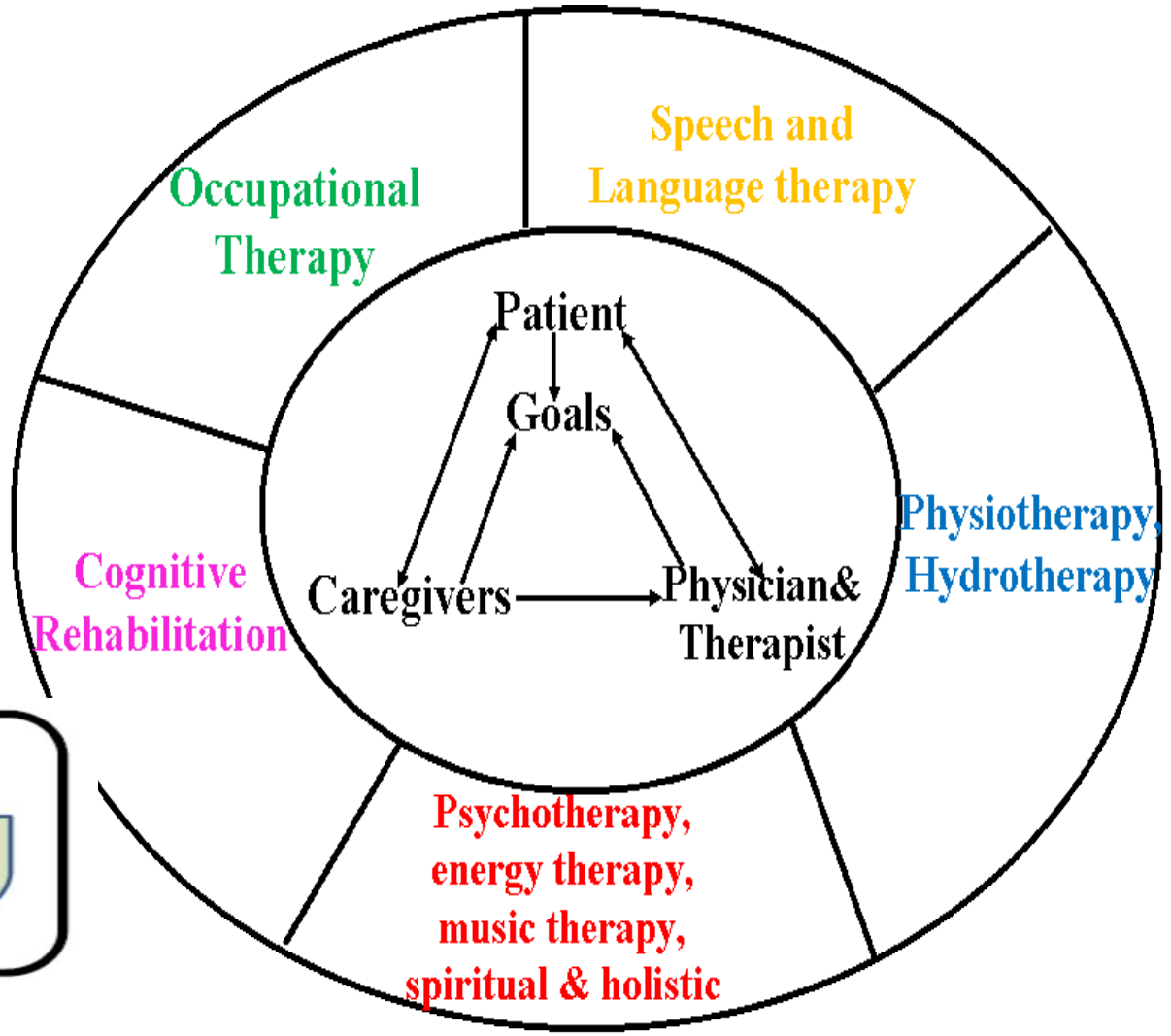
Figure 3

Recovery Spiral and Holistic Model of Neurorehabilitation

Therapeutic services

1. Physiotherapy
2. Speech/Language/Swallow
3. Occupational
4. Spiritual and holistic therapy
5. Cognitive/Psychotherapy
6. Home visit; Telecare; Counselling





Goal-setting

In the patient-centered model, each patient will need careful assessment by the team to identify rehabilitation goals that should be negotiated with and agreed by the patient or his/her proxy and caregiver.

A goal is usually defined as a small, measurable, discrete step along the path to recovery. Could also be multi-staged progressive steps towards its eventual achievement.

It should be specific, measurable, achievable, realistic/ relevant and timed (SMART).

Goal-setting

- Each goal can be built up by using up to four parts:
  - the target activity,
  - the support needed,
  - quantification of performance and
  - the period/time needed to achieve the desired state.
- This method can be employed as part of goal attainment scaling and the other levels can be easily and quickly formulated by adding, deleting and/or changing one or more of the (sub) parts.
- It should be motivational and task-oriented.

Time needed

- Population based studies of stroke recovery have shown that the time taken to achieve best functional performance for mild, moderate, and severe strokes averages 8, 13, and 17 weeks respectively.
- The times vary considerably between individual patients, but these averages provide a useful guide for the duration of rehabilitation contact time.

Phases

- Initial stroke recovery involves resolution of cerebral oedema, ionic fluxes, and inflammatory processes followed by recruitment and reorganisation of undamaged neural networks.
- Later recovery is adaptive to the new circumstances of residual impact of the stroke on daily life activities

Neuroplasticity

- The brain's ability to reorganize itself by forming new neural connections throughout life. Neuroplasticity allows the neurons in the brain to compensate for injury and disease and to adjust their activities in response to new situations or to changes in their environment.
- Brain reorganization takes place by mechanisms such as "axonal sprouting" in which undamaged axons grow new nerve endings to reconnect neurons whose links were injured or severed. Undamaged axons can also sprout nerve endings and connect with other undamaged nerve cells, forming new neural pathways to accomplish a needed function.

Neuroplasticity

- For example, if one hemisphere of the brain is damaged, the intact hemisphere may take over some of its functions. The brain compensates for damage in effect by reorganizing and forming new connections between intact neurons. In order to reconnect, the neurons need to be stimulated through activity.
- Neuroplasticity sometimes may also contribute to impairment. For example, people who are deaf may suffer from a continual tinnitus, the result of the rewiring of brain cells starved for sound. For neurons to form beneficial connections, they must be correctly stimulated.
- Neuroplasticity is also called brain plasticity or brain malleability.

Phases

- Early rehabilitation (first few months) uses techniques that seek to influence the potential for neuroplastic change
- Late rehabilitation encourages adaptive responses and coping strategies based on educational and psychological theory

stroke unit

- **Key features of a stroke unit**
  - Staff with a specialist interest in stroke or rehabilitation
  - Routine involvement of carers in the rehabilitation process
  - Coordinated care from a multidisciplinary team, including meetings at least once each week
  - Information provided to patients and carers
  - Regular programmes of education and training
- The British Association of Stroke Physicians (www.basp.ac.uk) recommends that the minimum staffing levels on a stroke unit should be 1.0 consultant sessions per 10 beds; 8.0 trained or untrained nurses per 10 beds; 0.9 sessions of physiotherapy per bed; 0.7 sessions of occupational therapy per bed; 0.35 sessions of speech and language therapy per bed.

Ultimate goal of Rehabilitation

- Maximize quality of life
- Add years to life and life to years
- HRQOLISP-40

Neurorehabilitation and Neural Repair
http://nnr.sagepub.com/

Psychometric Properties of the HRQOLISP-40: A Novel, Shortened Multiculturally Valid Holistic Stroke Measure

Mayowa Ojo Owolabi

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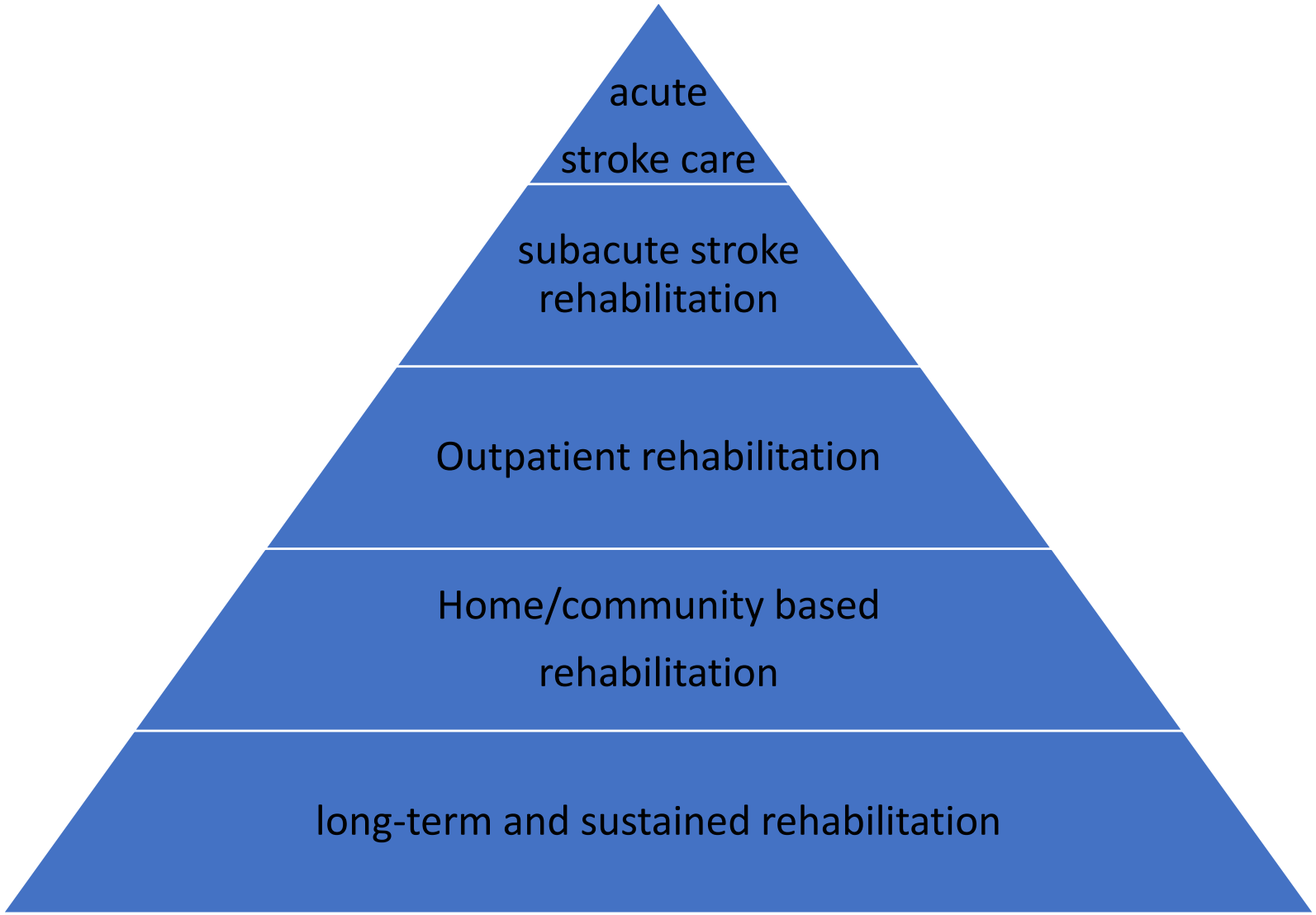
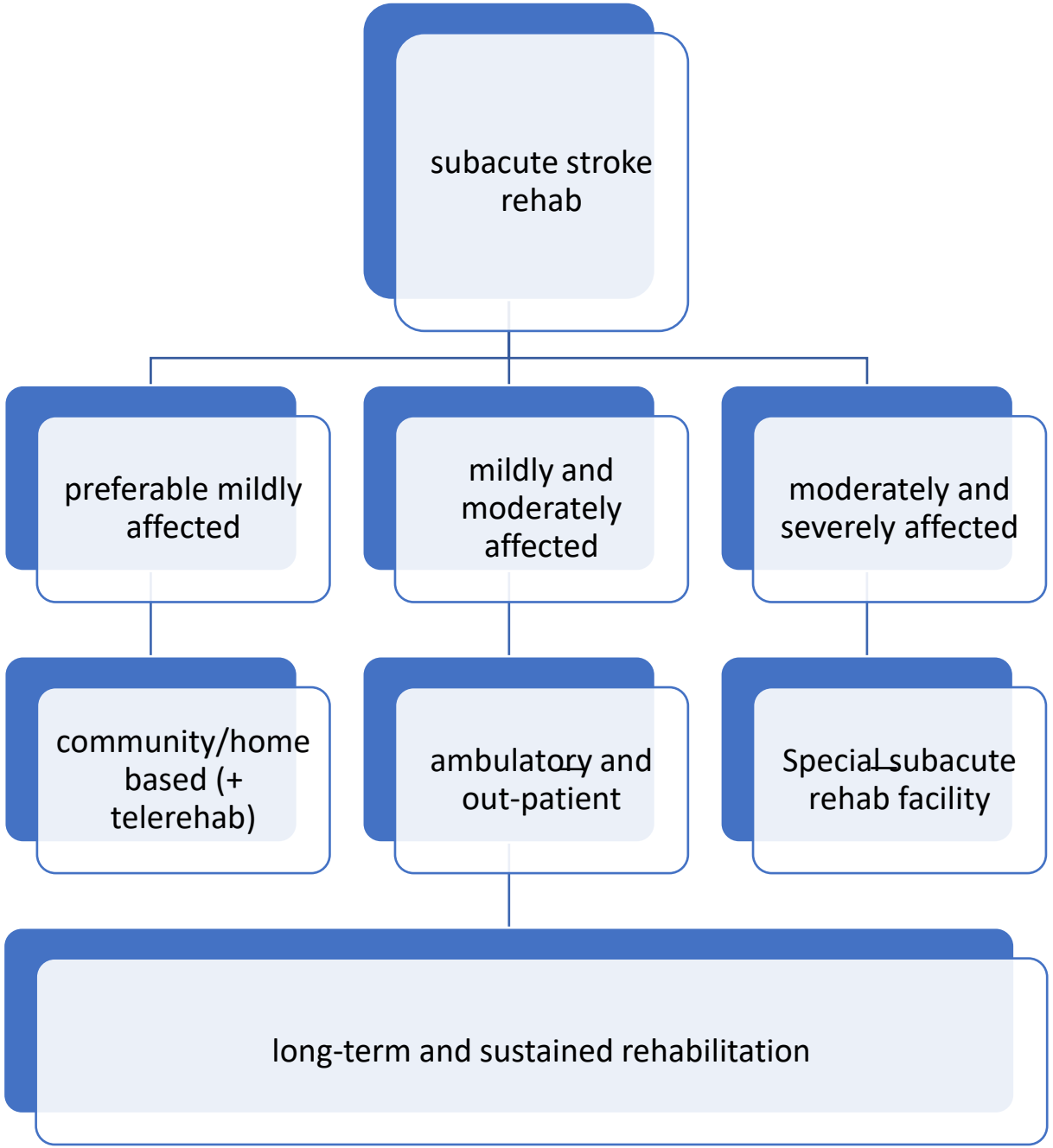

acute
stroke care
subacute stroke
rehabilitation
Outpatient rehabilitation
Home/community based
rehabilitation
long-term and sustained rehabilitation


subacute stroke rehab
preferable mildly affected
mildly and moderately affected
moderately and severely affected
community/home based (+ telerehab)
ambulatory and out-patient
Special subacute rehab facility
long-term and sustained rehabilitation

Physiotherapy

- Ability to recover self-care and mobility
- Early stroke rehab care /stroke unit
- Comprehensive intensive rehab superior to less-intense programs
- Practice of motor tasks in the context of functional skills : task-oriented training
- Settings: hospital, rehab center, community, domiciliary, tele-rehab

Physiotherapy

- Patients most likely to improve with motor training for the UL are those with some residual function
- Degree of damage of the corticospinal tract predicts final outcome.
- SLS and mood disorders are the dominant predictors of QOL (Owolabi, 2008)

Motor Imagery

- The motor imagery group was asked to practise daily imagining moving tokens with their affected arm. The nonmotor imagery group rehearsed visual imagery of previously seen pictures. All patients practised physically moving the tokens.
- MAIN MEASURES: motor function (training task, pegboard and dynamometer), perceived locus of control, attention control and ADL independence.
- RESULTS: Improvement was greater for the motor imagery group on the training task only (average of 14% versus 6%).
- CONCLUSIONS: Motor imagery training without supervision at home may improve performance on the trained task only. *Dijkerman HC 2004*

Motor imagery

- Based on the available literature in healthy volunteers, robust activation of the nonprimary motor structures, but only weak and inconsistent activation of M1, occurs during motor imagery.
- In patients with stroke, the cortical activation patterns are essentially unexplored as is the underlying mechanism of motor imagery training.
- Provided appropriate methodology is implemented, motor imagery may provide a valuable tool to access the motor network and improve outcome after stroke.
- May help functional reorganisation in hemiplegic stroke patients

Constraint-Induced Movement Therapy (CIMT)

- combines physical and occupational therapy to stimulate the brain into "repairing its circuitry" so that people can regain increased function of their paralyzed limbs-even if the stroke happened years ago.

- The rehabilitation involves using a restraint device to immobilize a patient's still-useful arm so that he or she is forced to use the paralyzed arm to complete familiar, detail-oriented tasks, such as turning pages on a book, throwing a ball, and opening and closing spring-operated clothespins

- The therapy only works, researchers say, if patients participate for a minimum of six hours a day for at least two weeks. Can be combined with robotics

FIGURE 8-4 Patient with left hemiparesis receiving constraint-induced movement therapy. Note the mitt on his right hand to prevent the hand's involvement in this task.

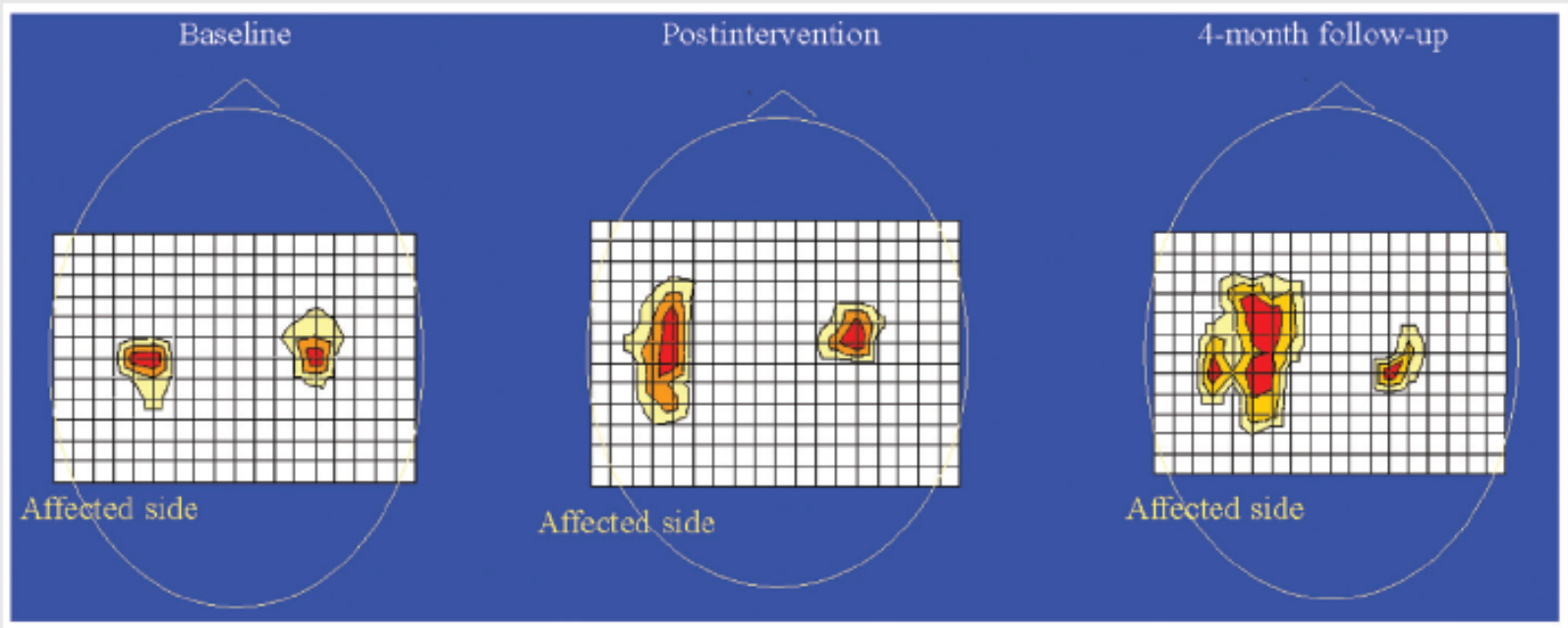


FIGURE 8-3 Longitudinal changes in a two-dimensional motor map obtained by using transcranial magnetic stimulation over the motor cortex of each hemisphere in a patient receiving constraint-induced movement therapy (CIMT) following stroke. The grid size is 1 cm, and motor responses at each scalp position are coded by intensity (relative to the maximal response). Note expansion of the motor map over the affected hemisphere associated with CIMT, which persists at 4 months.

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Progressive resistance strength training (PRST)

- system of training that uses resistance (weights, body weight, or friction) to progressively increase workload to enhance strength/endurance. It involves three variables: resistance, sets, and repetitions.
- A general model consists of lifting a weight 8 to 12 times (reps) for 3 sets and increasing the workload over a period of weeks and months.
- Start with light weight for 8 reps and slowly build to 12 reps. When this is achieved, move on to increased weight, drop back to 8 reps, and progressively build again.
- General strengthening and specific strengthening can be combined to maximize the cross training benefit.

Progressive resistance strength training - evidence

- A recent investigation evaluated the effects of a 12-week, twice-per-week, progressive resistance-training program on muscle strength, gait, and balance in stroke subjects. Lower-limb strength increased 68% on the affected side and less so on the intact side. Transfer time, motor performance, and static and dynamic balance also showed improvements.
- These results confirmed those of a previous study that showed benefits of strength training of the hemiparetic knee. *Neil F. Gordon. Circulation.* 2004;109:2031-2041
- Can be combined with robotics

Robotics

- Physically aid movement : Robots that physically impact humans must address the major as-yet largely unsolved challenges involving safety, cost, and liability.
- Hands-off strategy, focusing instead on employing **human-robot interaction** to achieve the desired therapy goals. Combine collision-free movement, vision-based sensing and following of the patient and tracking of his/her use of the affected limb, and using novel human-robot interaction protocols to guide and encourage rehabilitation.
- Human-robot interaction techniques capable of interacting with a post-stroke patient in the home, monitoring patient use of the affected arm, reminding him/her to use the arm, and providing guidance, encouragement, and improvement assessment.

FIGURE 8-5 Patients undergoing robot-assisted training following stroke. The paretic left upper extremity is attached to a movable manipulandum. The patient is presented with a task on the computer screen and asked to move the cursor to successfully accomplish the task. The robot may provide assistance if desired.

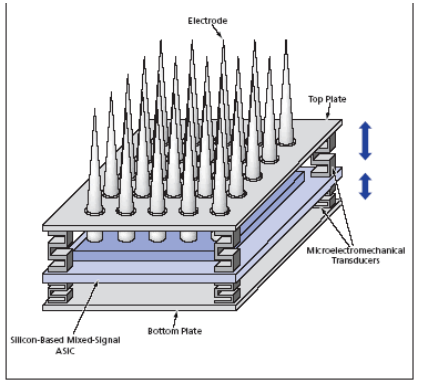
Robotics

- Laser range finder
- IMU motion suit
- PTZ camera
- Website video of robot in use
- http://robotics.usc.edu/interaction?l=Research:Projects:post_stroke:index

Robotics

Neuroimplants

- One of the world's first "bionic" devices to produce functional hand and arm movement through electrical stimulation . In UK to achieve a co-ordinated hand and arm movement.



The **Thickness of the Implant Package** and/or the length of protrusion of the electrodes would be adjusted by use of the microelectromechanical actuators.

- Device using radio frequency (RF) electrical stimulation to improve motor recovery and re-learning of arm and hand function following a stroke.
- The research is based on the AMF RF microstimulators that are implanted into a patient's arm. The pioneering system is designed to provide electrical stimulation to both control and re-educate weak or paralysed muscles to produce functional arm and hand movements.
- Patient fitted with a cuff that sends signals to the microstimulators, and the system was programmed to produce functional patterns of movement.

Neuroimplants *in brains*

- Brushlike arrays of electrodes packaged with application-specific integrated circuits (ASICs) are undergoing development for use as electronic implants — especially as neuro-prosthetic devices that might be implanted in brains to detect weak electrical signals generated by neurons. the electrodes would pick up signals from neurons and the ASICs would amplify and otherwise preprocess the signals for monitoring by external equipment.
- The inclusion of microelectromechanical actuators for adjusting the depth of penetration of the electrodes into brain tissue. Fabricated by techniques that are established in the art of microelectromechanical systems (MEMS).

FIGURE 8-6 Functional electrical stimulation to facilitate ankle dorsiflexion.

FIGURE 8-7 Three commonly used assistive devices for ambulation after hemiparesis including (from left to right) a hemi-walker (walker cane), standard J-neck cane, and quad cane.

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Gait training with weight support

FIGURE 8-8 Patient with a stroke in the left anterior cerebral artery distribution with weakness in right leg undergoing gait training using a treadmill with partial body-weight support.

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ORTHOTICS

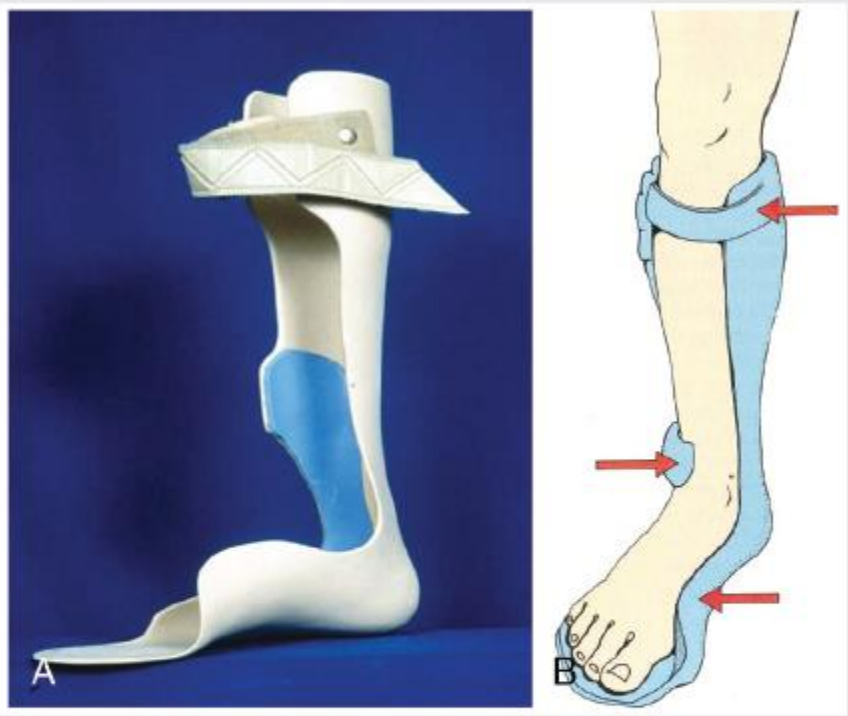

FIGURE 8-9 *A*, an example of a custom-made ankle-foot orthosis using a biomechanical "three point" force system to prevent ankle inversion in spastic hemiparesis. Blue material in the device protects against skin breakdown. *B*, arrows demonstrate points of force. The device also prevents excessive plantar flexion.

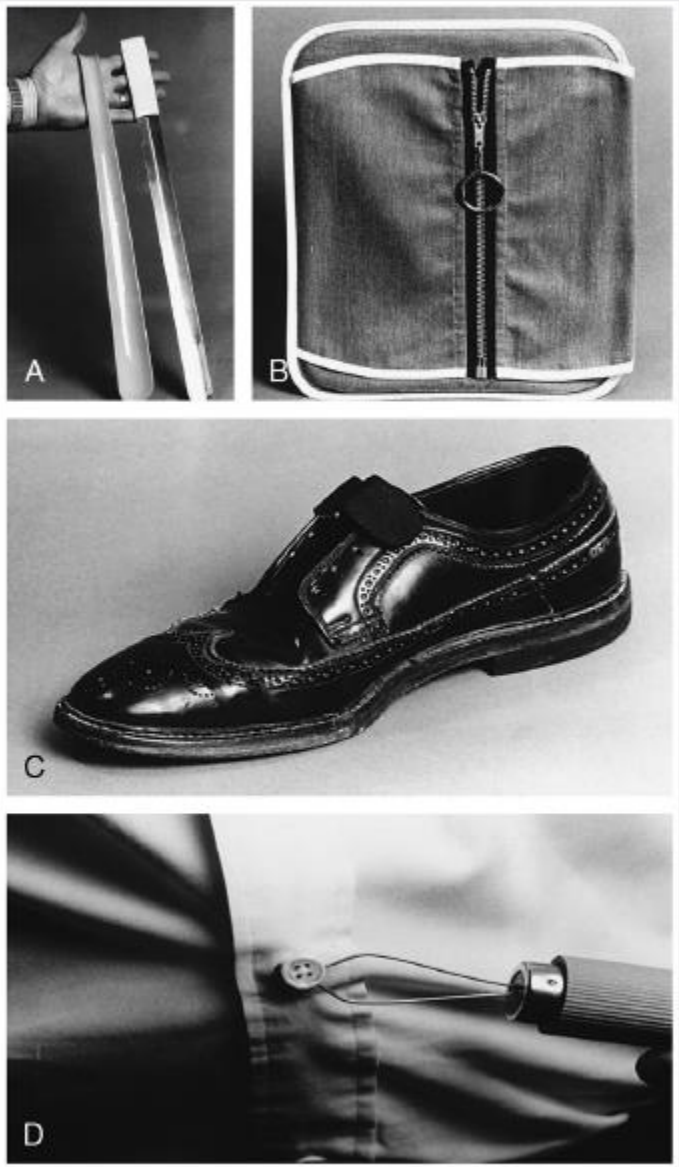

FIGURE 8-11 Adaptive devices to assist with dressing. *A*, long-handled shoe horns, *B*, "ring" zipper, *C*, Velcro shoe closure, and *D*, button hook.

FIGURE 8-12 Two examples of equipment for home use. *A*, bathtub bench (which could also be used as a commode). Note several bathtub adaptations including several types of grab bars and a handheld shower nozzle. *B*, light-weight commode constructed with plastic tubing.

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Power wheelchair

FIGURE 8-13 A wheelchair with standard foam cushion and commonly prescribed features, including swing-away leg rests, wheel grips to facilitate propulsion, and pneumatic tires.

FIGURE 8-14 Nonambulatory patient with right hemiparesis who uses a power wheelchair. Note arm trough for support of paretic arm.

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Home adaptation

TABLE 8-2 Home Adaption

Adaptation	Details
Ramps	1-inch grade for each 1 foot of length
Doors	2-inch clearance on each side for wheelchairs (30 inches to 36 inches wide)
	Handle adaptations (door knob covers or lever type)
Bathroom	5 feet to 6 feet wide for wheelchair turning
	Elevated toilet seat
	Grab bars
Other rooms	Rearrange furniture and rugs

Physiotherapy and Occupational therapy

- CIMT
- Mental practice
- Neuronavigated tcMS
- tcDC stimulation
- Robot assisted therapy
- Body weight supported treadmill
- Spasticity treatment
- Amphetamines,

Occupational therapy

- Occupational therapy - *a treatment that focuses on helping people achieve independence in all areas of their lives* .

- Can provide stroke patients with various needs with positive, fun activities to improve their cognitive, physical, and motor skills and enhance their self-esteem and sense of accomplishment.

- According to the American Occupational Therapy Association (AOTA), in addition to dealing with an individual's physical well-being, occupational therapy practitioners address psychological, social, and environmental factors that may hinder an individual's functioning in different ways

Ergotherapy

- Self-sufficiency training of casual daily activities, training of smooth acral mobility at limbs paresis.
- The training of kitchen skills and workshop skills belongs to the classical methods used in ergotherapy.

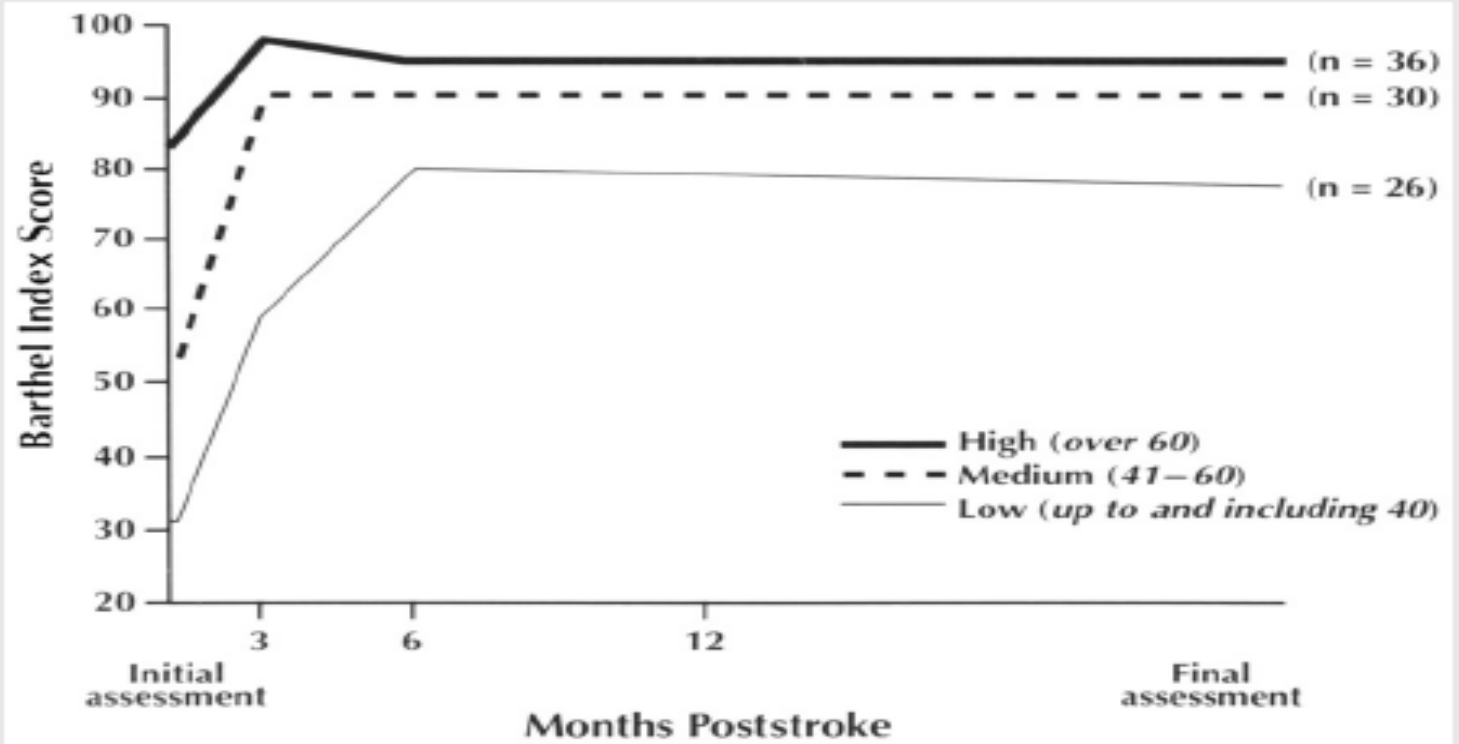

FIGURE 8-1 Recovery of ability to perform activities of daily living following stroke. The Barthel Index is a multifaceted assessment scale with a maximum score of 100. Note that patients with higher initial scores have better final outcomes than those with lower initial scores. Patients with lower initial scores (greater disability) improve more slowly.

Reprinted from Wade DT, Skilbeck CE, Hewer RL. Predicting Barthel ADL score at 6 months after an acute stroke. Arch Phys Med Rehabil 1983;64(1):24–28. Copyright © 1983, with permission from Elsevier.

SALT

- Dysphasias, dysarthrias
- Intense therapy more eefective
- Voice activated speech recorder
- Artefacts
- Brain Computer Interface Systems
- Speech synthesizers
- Piracetam as adjunct

Culturally responsive Artefacts used to initiate spontaneous speech from patients at the Blossom rehab center

Psychotherapy

- Post-stroke cognitive disorder common
- Mood disorders and depression common
- Depression associated with worse outcome

Cognitive rehabilitation

- **Language & Communication:** Language and communication problems can keep improving for a long time after the injury. Speech therapists can help people with TBIs see which areas they are good at and which areas need more practice. They can also teach ***compensations***. The practice and ***feedback*** that speech therapists give in therapy sessions can lead to better conversation skills in social situations too.
- **Memory:** For memory problems, the researchers found that many of the treatments that are used only help in the short term. For longer-term memory improvement, they found that real-life compensations worked best. This included things like *computers, pagers, notepads, reminders, palm pilots* or *notebooks*. When therapists and families help train and remind people with stroke to use these things, they work even better.

Cognitive rehabilitation

- **Problem Solving:** Teaching people with stroke strategies to solve problems works. For example, they could be asked to think of a particular problem they've had -- like finding transportation or housing in their community. Next, they can be encouraged to think of all possible ways to solve their problem. Then, they could choose one solution and think about how well it worked in a real life situation.
- **Attention problems:** *Practice, repetition, and feedback* all can help you learn to be more attentive, especially for complex, real-life tasks.
- **Visual Information Processing, Motor Function.**
- Elemental Driving Simulator (EDS) and the functional visual fields programs (PERFIELD) from COGREHAB.

Supportive/ Adjunctive

- comorbities: htn, dm, decubitus ulcers, BPH
- Shoulder support
- Pain control
- Secondary prevention
- Seizure control
- DVT prophylaxis
- Bowels and bladder (communication, detrusor hyperreflexia)

Supportive/ Adjunctive

- Feeding (silent aspiration, FEES, NGT, PEG)
- Spasticity treatment
- Prevention of falls (hemineglect, visual, cognitive impairment)
- Management of Neglect (clock, line bisection test
- Visual rehab
- Sexual rehab
- Care giver burnout

Others

- Biofeedback
- Music therapy
- Hydrotherapy
- Relaxation therapy, psychotherapy, SSRIs
- Recreational therapy
- Vocational therapy
- SALT -speech synthesizers
- FEES, PEG, videofluoroscopy
- Pneumatic mattress , Water bed
- intermittent pneumatic compressive devices, NMES for DVT prevention
- Neuro-orthopedics
- Acupuncture, TENS
- Visual rehabilitation

Common information needs of stroke patients and their families

- **Risk factors** and causes of stroke
- Availability of **local services** and **support groups**
- **Financial** advice
- Guidance on driving and **transport**
- Medication and **secondary prevention**
- Understanding of an agreed care plan
- Advice on returning to **work** and participation in **leisure** activities
- Discussion of **sexual** issues

Community reentry

Safe driving

Successful return to work easier in those with white collar job and preserved cognitive function and mobility

Energy therapy

Revolutionary and evolutionary thinking needed for holistic, integrative and energy medicine

'To reach the source, one has to swim against the current' Martin Luther

' The significant problems we have cannot be solved at the same level of thinking that created them' Albert Einstein

Logotherapy

Victor Frankl

Fabry defn : Therapy through meaning, existential therapy, ontological therapy

Disability paradox

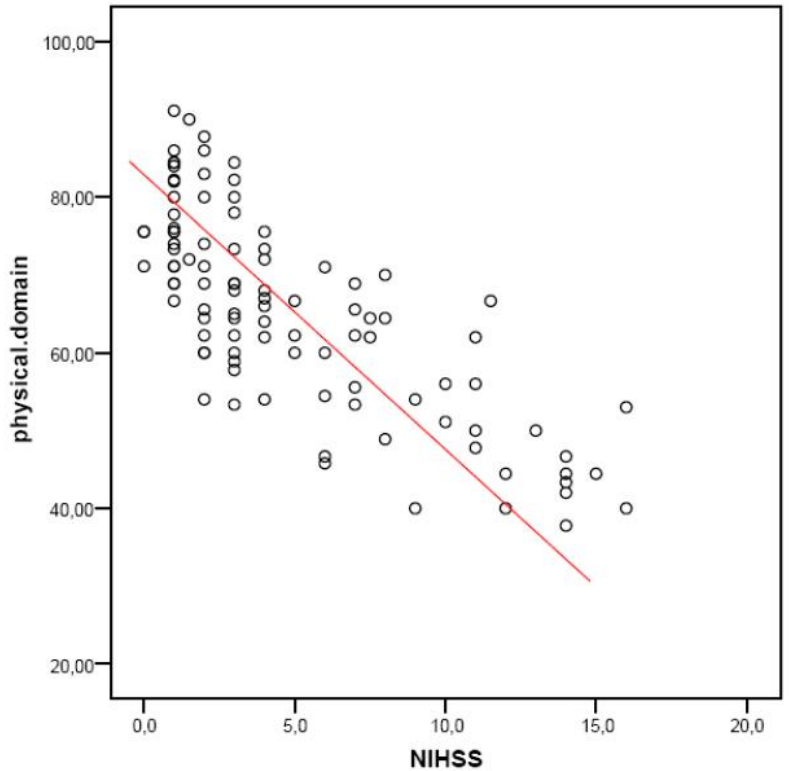

Figure 3. Scatter plot of physical domain score of HRQOL versus NIHSS in stroke survivors in Berlin. NIHSS = N of Health Stroke (Severity) Scale. p (two-tailed) = 0.000, r = -0.777 n = 103.

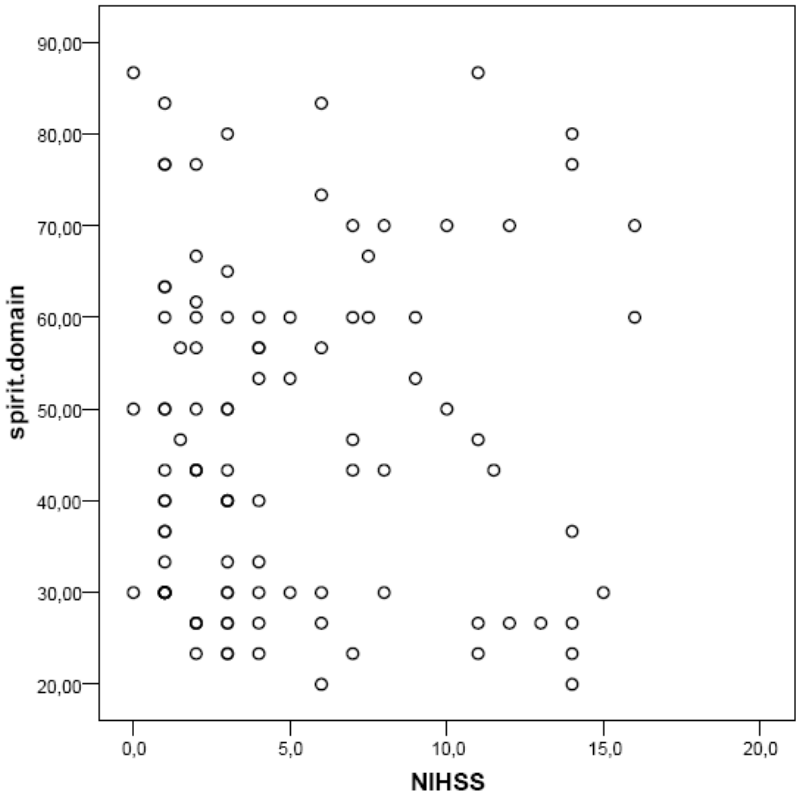

FIGURE 3B: SCATTERPLOT OF SPIRIT DOMAIN VERSUS STROKE LEVITY.

(BERLIN)

Holistic therapy

- Disability paradox vs disability disparity
- **'A paradox is not a conflict with reality. It is a conflict between reality and your feelings of what reality should be like**' Richard Feyman
- Systemic interconnectedness
- Intuition and insight

From philosophy to metrics- Soren Ventegodt

Seven Criteria or Requirements for a Quality-of-Life Concept that can Provide a Sound Basis for Scientific Investigation by Questionnaire

A definition of quality of life

An embedding philosophy of human life

A theory that operationalizes this philosophy by deriving questions that are unambiguous, nonoverlapping, and jointly exhaustive, and assigning relative weights to these questions

Quantifiable response alternatives

Technical checks (reproducibility, sensitivity, well scaledness, etc.)

Validation through meaningfulness to investigators, respondents, and users

Aesthetic appeal of the questionnaire

Psychometric Properties of the HRQOLISP-40: A Novel, Shortened Multiculturally Valid Holistic Stroke Measure

Neurorehabilitation and
Neural Repair
24(9) 814–825

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SAGE

Mayowa Ojo Owolabi, MBBS, MWACP, FMCP, DM, Cert Epid & Glob.Health.[1]

Abstract

Background. A recent review showed that no existing instrument measured the entire spectrum of health-related quality of life (HRQOL) in stroke patients. However, the HRQOL in stroke patients (HRQOLISP) questionnaire is valid and exceptionally comprehensive. Founded on a holistic model of human life, it comprises both physical and spiritual spheres. However, its 102-item length may discourage routine use. Therefore, the aim was to determine the psychometric attributes of a shortened version based on a multicultural transnational study. *Methods*. HRQOLISP was administered to 100 stroke patients in Ibadan, 103 in Berlin, and control groups of 100 apparently healthy adults in Ibadan and 50 in Berlin. Analyzing data from both cities, items were reduced to 40. Construct validity of the resulting HRQOLISP-40 was assessed by comparison with the National Institutes of Health Stroke Scale (NIHSS), Stroke Levity Scale (SLS), modified Rankin Scale (mRS), and Short Form 36 (SF-36) Health Survey. *Results*. In multicultural settings, the HRQOLISP-40 showed good internal consistency ($\alpha = .76, .86$) and test-retest reliability. It retained its discriminant validity between stroke and healthy

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ACTA NEUROLOGICA SCANDINAVICA

Table 2 Health-related quality of life in stroke patients (HRQOLISP*) profile in Ibadan and Berlin

Domains	Constructs assessed
Physical sphere (1–4)*	
1. Physical	Motor, sensory, sphincteric, sexual function after stroke
2. Psycho-emotional	Mood after stroke
3. Cognitive	Memory and executive functioning after stroke
4. Ecosocial interaction	Interpersonal and ecological interactions after stroke
Spiritual sphere (a–c)*	
a. Soul	Self-determination, self-esteem, personal growth and autonomy after stroke
b. Spirit	Transcendental and idealistic aspects of life, the supreme meaning and purpose of life after stroke
c. Spiritual interaction	Meditation, interactions with people of the same faith after stroke

*The 7 domains are further grouped into two 'spheres' (supported by Hartmann's terminology): 'physical' and 'spiritual'; based on the reliability and factorial validity (6, 22).

†The score for each domain, sphere and global HRQOL ranges from 0 (worst) to 100 (best HRQOL).

Original Paper

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epidemiology

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Which Is More Valid for Stroke Patients: Generic or Stroke-Specific Quality of Life Measures?

Mayowa Ojo Owolabi

Department of Medicine, University College Hospital, Ibadan, Nigeria

Original Article J Neurol Res. 2017;000(000):000-000

Health-Related Quality of Life in Stroke Survivors at the University Hospital of the West Indies

Jodian A. Pinkney[a, b, d, e], Francene Gayle[a, b, d], Kathryn Mitchell-Fearon[c, d], Jasneth Mullings[b, d]

Abstract

Background: Stroke remains a major contributor to mortality and morbidity both locally and globally. To date, there has been no study examining the impact of stroke on quality of life (QOL) in the Jamaican population. Our study was the first to look at QOL among Jamaican stroke survivors across the vast spectrum of stroke severity

Conclusions: In Jamaica, HRQOL among stroke survivors at the UHWI is consistently and significantly lower than that of healthy adults. Strategic interventions that target stroke severity, depression and non-adherence to secondary prevention regimens must be implemented in order to improve patient outcomes.

Keywords: Quality of life; Stroke; Stroke survivors; Jamaica;

Guzmán Sabogal et al. BMC Neurology (2016) 16:246
DOI 10.1186/s12883-016-0770-5

BMC Neurology

RESEARCH ARTICLE Open Access

Health-related quality of life in stroke patients questionnaire, short version (HRQOLISP-40): validation for its use in Colombia

Yahira Rossini Guzmán Sabogal[1*], Jorge Pla Vidal[2], Ricardo Sánchez Pedraza[3], Felipe Ortuño Sánchez-Pedreño[2] and María Catalina Gómez Guevara[4]

Abstract

Background: The health-related quality of life in stroke patients (HRQOLISP-40, short version) survey was developed in Nigeria and constitutes a 40 item, multidimensional, self-administrated questionnaire. We assessed the validity and reliability of the HRQOLISP-40 Spanish version for stroke patients in Colombia.

Clinical Interventions in Aging

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ORIGINAL RESEARCH

Profile and health-related quality of life of Ghanaian stroke survivors

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Clinical Interventions in Aging
8 October 2014
Number of times this article has been viewed

Eric S Donkor[1,2]
Mayowa O Owolabi[3]
Patrick O Bampoh[4]

Background: Stroke is a leading cause of mortality with a major effect on health-related quality of life (HRQoL). There are no previous studies exploring HRQoL among stroke survivors in Ghana, despite the increasing public health significance of the disease in this country. Here we

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DOI:10.3233/NRE-130951
IOS Press

Psychometric properties of the German version of the health-related quality of life in stroke patients (HRQOLISP) instrument

Mayowa Ojo Owolabi[a,b,*]
[a]*Department of Medicine, University College Hospital, Ibadan, Nigeria*
[b]*WFNR-Blossom Center for Neurorehabilitation, Ibadan, Nigeria*

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healthcare

RESEARCH ARTICLE

Sensitivity and responsiveness of the health-related quality of life in stroke patients-40 (HRQOLISP-40) scale

Grace O. Vincent-Onabajo[1], Mayowa O. Owolabi[2], and Talhatu K. Hamzat[3]

[1]*Department of Medical Rehabilitation (Physiotherapy), University of Maiduguri, Borno State, Nigeria,* [2]*Neurology Unit, Department of Medicine, and* [3]*Department of Physiotherapy, University of Ibadan, Ibadan, Oyo, Nigeria*

Abstract

Purpose: To investigate the sensitivity and responsiveness of the Health-Related Quality of Life in Stroke Patients-40 (HRQOLISP-40) scale in evaluating stroke patients from onset to 12 months. *Methods*: Fifty-five patients with first-incidence stroke were followed-up for 12 months. The HRQOLISP-40 scale was used to assess health-related quality of life (HRQOL) while stroke severity was assessed with the Stroke Levity Scale. Sensitivity to change was assessed by analyzing changes in the HRQOLISP-40 scores between pairs of months with paired samples *t*-test. Standardized effect size (SES) and standardized response mean (SRM) were used to express responsiveness. *Results*: Overall HRQOL and domains in the physical sphere of the HRQOLISP-40 were sensitive to change at different time intervals in the first 12 months post-stroke. Marked responsiveness (SES and SRM >0.7) was demonstrated by the overall scale, and the physical, psycho-emotional and cognitive domains at varying time intervals. For instance, SRM was greater than 0.7 between 1 and 6, 3 and 12, 1 and 9, and 1 and 12 months for both the physical and psycho-emotional domains. *Conclusion*: The HRQOLISP-40 is a sensitive and responsive stroke-specific quality of life measure that can be used to evaluate the outcome of stroke rehabilitation.

Keywords

Health-related quality of life, health-related quality of life in stroke patients-40 scale, HRQOLISP-40, responsiveness, sensitivity, stroke

History

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Original Paper

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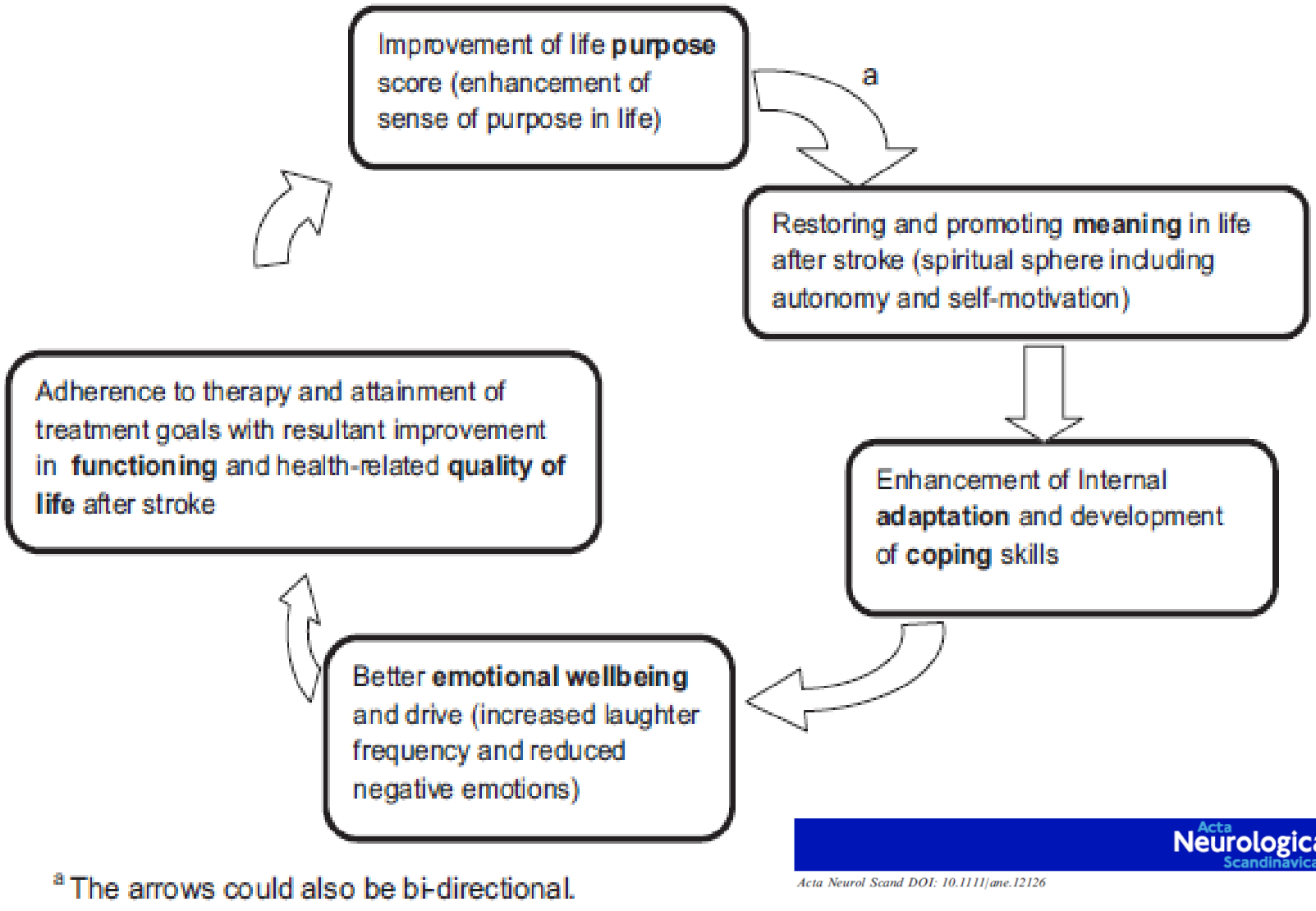
What Are the Consistent Predictors of Generic and Specific Post-Stroke Health-Related Quality of Life?

Mayowa Ojo Owolabi

Department of Medicine, University College Hospital, Ibadan, Nigeria



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ACTA NEUROLOGICA SCANDINAVICA

Figure 1. The stroke recovery cycle: a therapeutic model based on the constant determinants of post-stroke health-related quality of life across diverse cultures.

ORIGINAL ARTICLE

Effect of Purpose in Life on the Relation Between Alzheimer Disease Pathologic Changes on Cognitive Function in Advanced Age

Patricia A. Boyle, PhD; Aron S. Buchman, MD; Robert S. Wilson, PhD; Lei Yu, PhD; Julie A. Schneider, MD; David A. Bennett, MD

Context: Purpose in life is associated with a substantially reduced risk of Alzheimer disease (AD), but the neurobiologic basis of this protective effect remains unknown.

Objective: To test the hypothesis that purpose in life reduces the deleterious effects of AD pathologic changes on cognition in advanced age.

Design: A longitudinal, epidemiologic, clinicopathologic study of aging was conducted that included detailed annual clinical evaluations and brain autopsy.

Participants: Two hundred forty-six community-based older persons from the Rush Memory and Aging Project participated.

Main Outcome Measures: Purpose in life was assessed via structured interview, and cognitive function was evaluated annually and proximate to death. On postmortem examination, 3 indexes of AD pathologic features were quantified: global AD pathologic changes, amyloid, and tangles. The associations of disease pathologic changes and purpose in life with cognition were examined using linear regression and mixed models.

Results: Purpose in life modified the association between the global measure of AD pathologic changes and cognition (mean [SE] parameter estimate, 0.532 [0.211]; $P=.01$), such that participants who reported higher levels of purpose in life exhibited better cognitive function despite the burden of the disease. Purpose in life also reduced the association of tangles with cognition (parameter estimate, 0.042 [0.019]; $P=.03$), and the protective effect of purpose in life persisted even after controlling for several potentially confounding variables. Furthermore, in analyses examining whether purpose in life modified the association between AD pathologic effects and the rate of cognitive decline, we found that higher levels of purpose in life reduced the effect of AD pathologic changes on cognitive decline (parameter estimate, 0.085 [0.039]; $P=.03$).

Conclusion: Higher levels of purpose in life reduce the deleterious effects of AD pathologic changes on cognition in advanced age.

Arch Gen Psychiatry. 2012;69(5):499-506

Purpose in life

- **Purpose in life modified the association between** the global measure of AD pathologic changes and cognition (mean [SE] parameter estimate, 0.532 [0.211]; *P=.01), such that participants who reported higher levels of purpose in life exhibited better cognitive function despite the burden of the disease.*
- Purpose in life also reduced the association of tangles with cognition (parameter estimate, 0.042 [0.019];*P=.03), and the protective effect of purpose in life persisted* even after controlling for several potentially confounding variables.

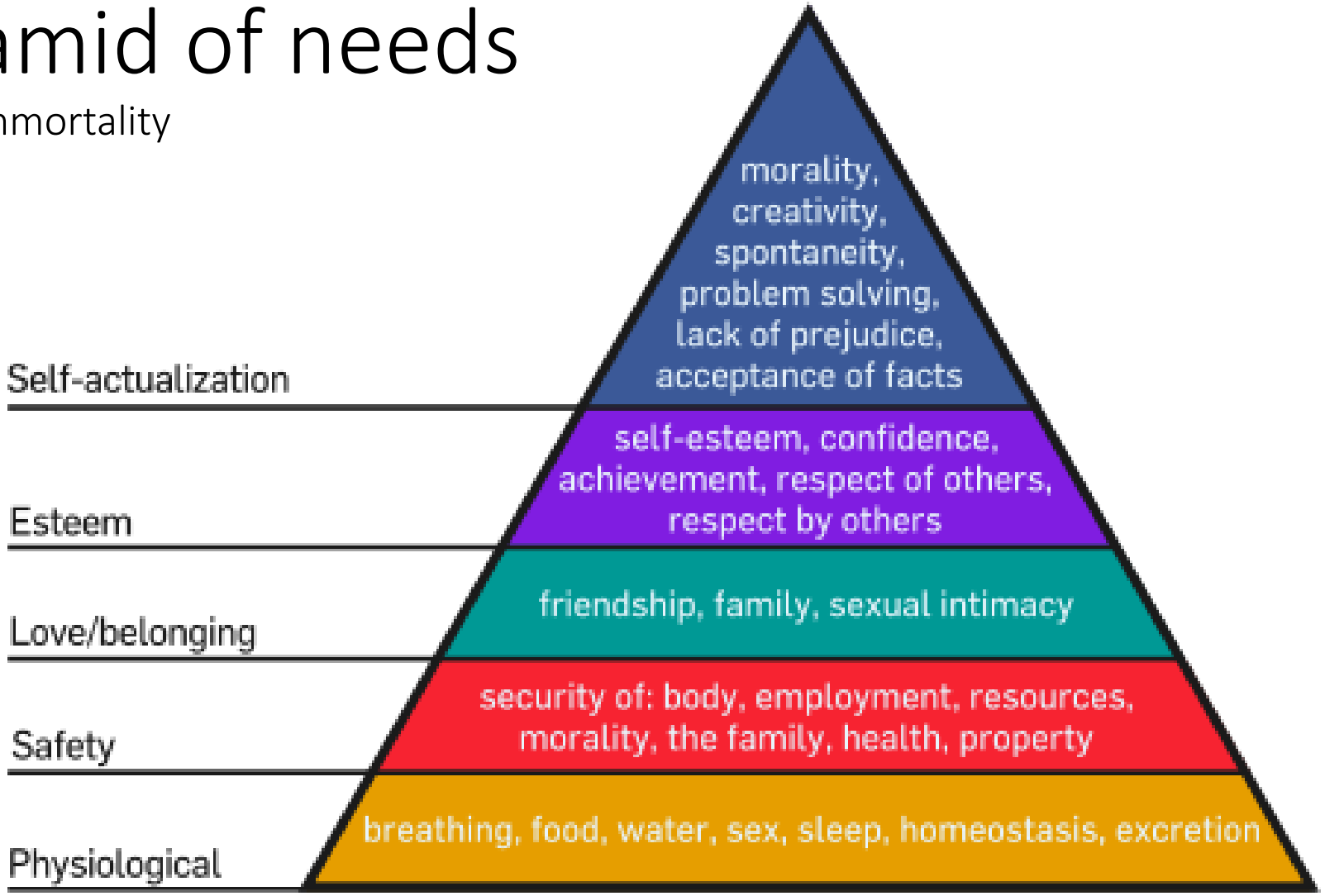
Purpose of life

- Sense of purpose in life is the possession of a principle of intentionality and central life mission that commands and energizes behaviour with a tendency to derive meaning from life's experiences. (Owolabi 2012)
- The supreme purpose of life is to achieve true and perpetual life, freedom and joy, purity and perfection through resonance of being to Life-within and the evolution, growth, flourishing and fruition of the seed of Life within.

  (Owolabi 2009, based on the SOLT)

Maslow’s pyramid of needs

peak: self-transcedence and immortality



The Future

- This stems from the fact that to maximize patients' recovery and wellbeing, interventions modeled to target the consistent determinants of HRQOL from the patients' perspective are more likely to be effective.
- Perhaps as proposed by Kalra, now ' is the time to expand the philosophy of rehabilitation and investigate interventions beyond healing the body to healing the spirit.'

Kalra L Faith Under the Microscope. *Stroke 2007;38:848-849*

AHA/ASA Guideline

Guidelines for Adult Stroke Rehabilitation and Recovery

A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association

Endorsed by the American Academy of Physical Medicine and Rehabilitation and the American Society of Neurorehabilitation

The American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists and the American Congress of Rehabilitation Medicine also affirms the educational value of these guidelines for its members

Accepted by the American Speech-Language-Hearing Association

Carolee J. Winstein, PhD, PT, Chair; Joel Stein, MD, Vice Chair;
Ross Arena, PhD, PT, FAHA; Barbara Bates, MD, MBA; Leora R. Cherney, PhD;
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Richard D. Zorowitz, MD; on behalf of the American Heart Association Stroke Council, Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, and Council on Quality of Care and Outcomes Research

- WHO-WSO- *Lancet Neurology* Commission on Stroke
- African Stroke Organization

Panorama

International Journal of Stroke WSO

Conceptual framework for establishing the African Stroke Organization

Rufus Akinyemi[1,2,3], Fred Sarfo[4], Foad Abd-Allah[5], Yomi Ogun[6], Mofou Belo[7], Patty Francis[8], M Bettencourt Mateus[9], Kathleen Bateman[10], Pamela Naidoo[11], Augustina Charway-Felli[12], Albert Akpalu[13], Kolawole Wahab[14], Christian Napon[15], Oyedunni Arulogun[16], Ad Adams Ebenezer[17], Gloria Ekeng[18], George Scola[19], Kolapo Hamzat[20], Stanley Zimba[21], Paul Macaire Ossou-Nguiet[22], Julius Ademokoya[23], Philip Adebayo[24], Biniyam Alemayehu Ayele[25], Deise Catamo Vaz[26], Godwin Ogbole[27], Patrice Barasukan[28], Rita Melifonwu[29], Ikenna Onwuekwe[30], Sarah Belson[31], Albertino Damasceno[32], Njideka Okubadejo[33], Alfred K Njamnshi[34], Julius Ogeng'o[35], Richard W Walker[36], Amadou Gallo Diop[37], Adesola Ogunniyi[1,3], Rajesh Kalaria[38], Peter Sandercock[39], Stephen Davis[40], Michael Brainin[41], Bruce Ovbiagele[42] and Mayowa Owolabi[2,3,43]

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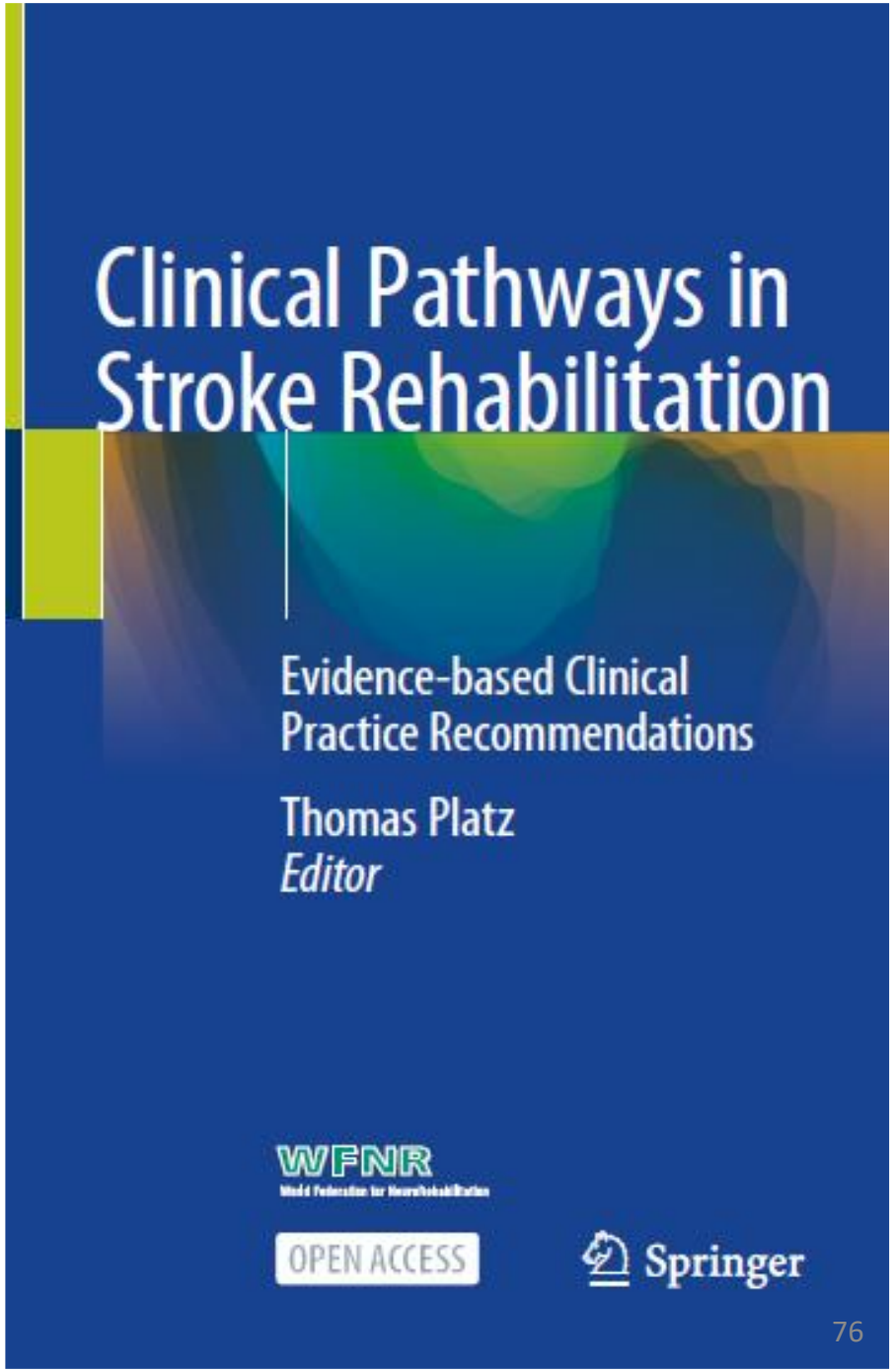

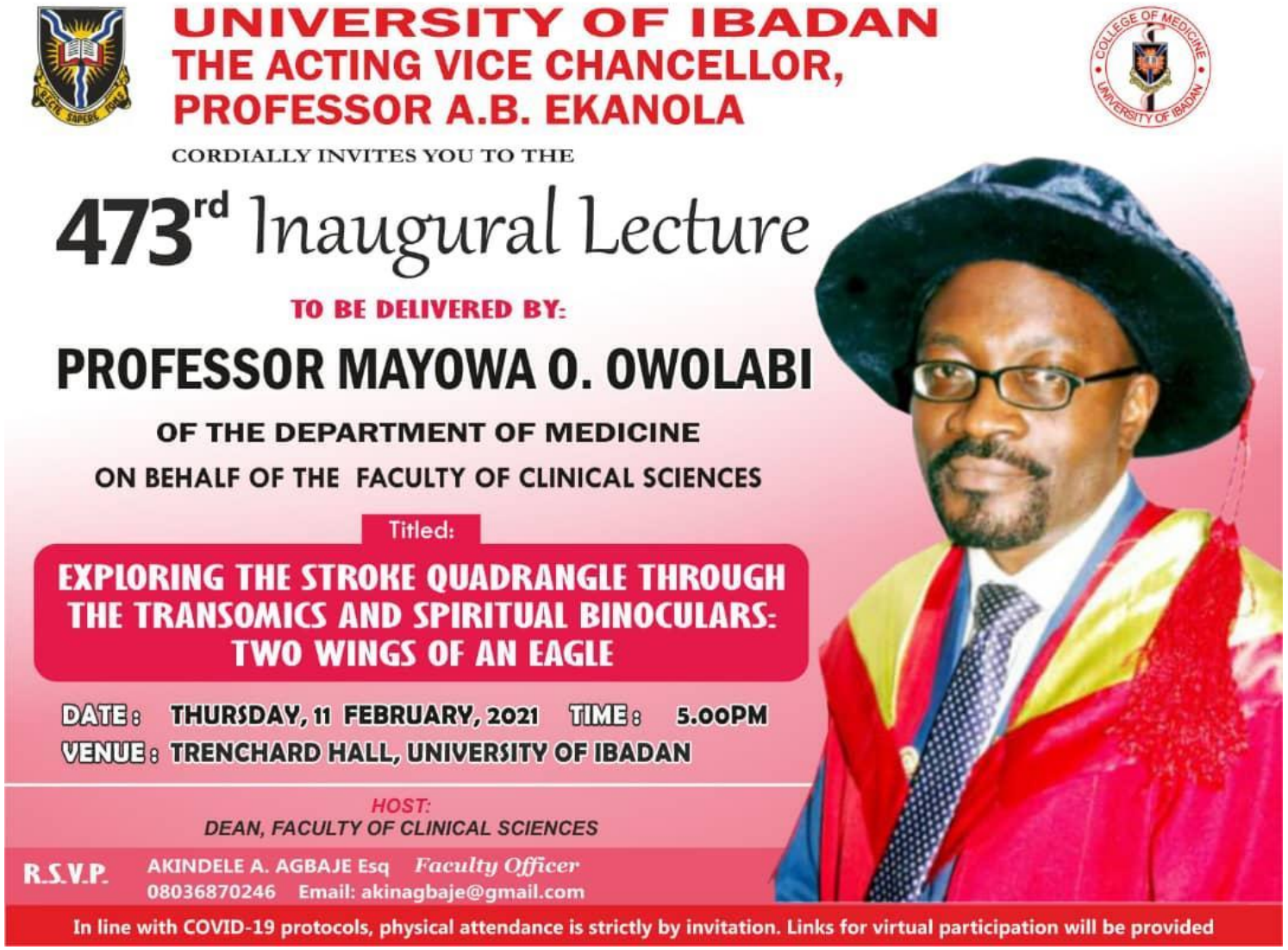

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frontiers in Neurology

SYSTEMATIC REVIEW
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Pragmatic Solutions for Stroke Recovery and Improved Quality of Life in Low- and Middle-Income Countries—A Systematic Review

Echezona Nelson Dominic Ekechukwu[1,2†], *Paul Olowoyo*[3,4†], *Kingsley Obumneme Nwankwo*[5,6], *Olubukola A Olaleye*[7], *Veronica Ebere Ogbodo*[8], *Talhatu Kolapo Hamzat*[7] *and Mayowa Ojo Owolabi*[9,10,11*]

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Katharina Stibrant Sunnerhagen,
University of Gothenburg, Sweden

Background: Given the limited healthcare resources in low and middle income countries (LMICs), effective rehabilitation strategies that can be realistically adopted in such settings are required.

Ibadan City of ‘firsts

- First Skyscraper in Africa
- First TV station in Africa NTA Ibadan 1959
- First University in Nigeria (1948)
- Premier teaching hospital in Ibadan
- First stadium in Africa Liberty stadium
- Produced the First Nobel Laureatte in Africa 1986
- First Neurorehab Center in EWC Africa 2010
- **First Training Workshop on Neurorehab in East, West, Central Africa, 2017**
- **First Neurorehab Conference East, West, Central Africa, 2017**

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To become and remain the leading centre of excellence for Neurorehabilitation in Africa

THE MISSION

Pioneering excellent research, training, advocacy and efficient efficacious individualised services in rehabilitation

THE GOAL

To become the training hub for Neurorehabilitation therapists and policy makers in Africa

THE MOTTO

'Blossom and be fruitful'

THE PHILOSOPHY

"Blossoming flower of rehabilitation" a multifaceted multidimensional rehabilitation model based on the seed of life model

INTUITION

inspired ideas, ingenious insight

INNOVATION

new thinking, better outcome

INTEGRITY

wholesomeness, truthfulness

EXCELLENCE

perfection, unrivalled distinction

HOLISTIC CARE

total care, integrative Medicine

'With extraordinary Intuition, cre8tive Innovations and untainted Integrity, We shall give excellent holistic Care, Abundant life, and boundless Love'

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AFRICAN STROKE ORGANISATION

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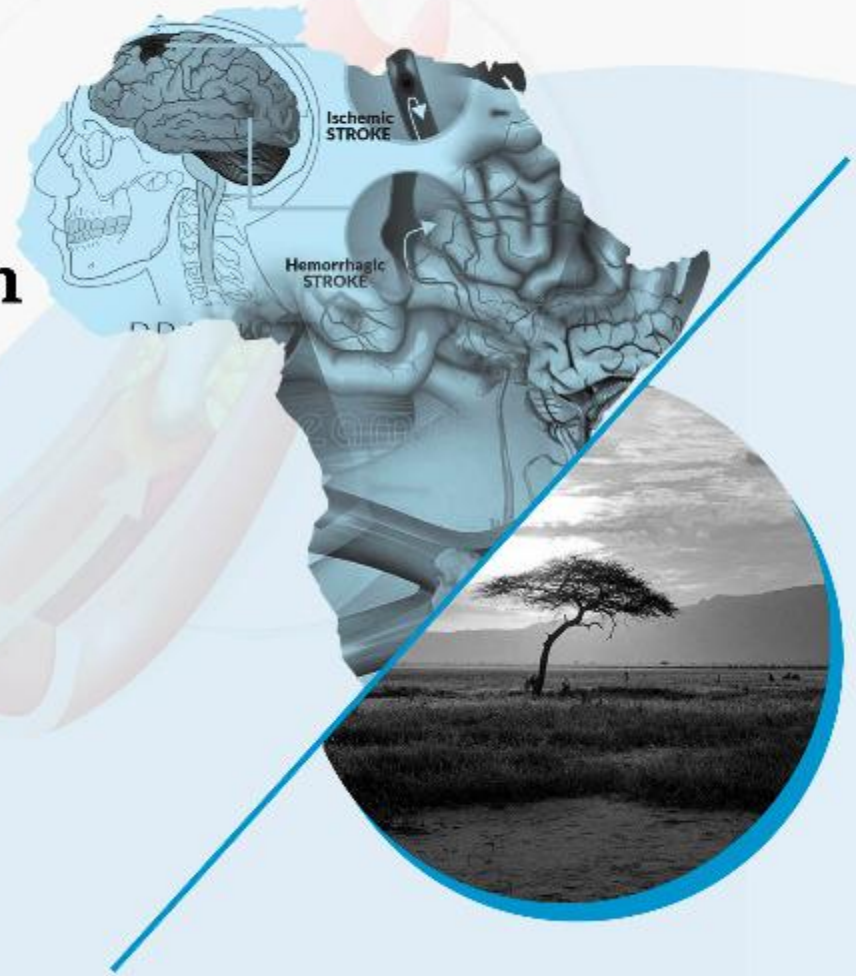

- **Virtual Pre-Conference Workshop**
  10am-12pm GMT
- **Deadline for Abstract Submission**
  August 31, 2021
- **Deadline for Abstract Acceptance Notification**
  September 30, 2021
- **Deadline for Registration:**
  September 30, 2021

Acknowledgement

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Thank you