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Implementation of Quality Indicators in Caring Patients with Acute Stroke

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Professional Background

Education

- **M.P.H.** (Epidemiology track), Haifa University, 2013.
- **M.P.A.** (Majoring in Health Care Systems), Clark University, 1998.
- **B.S.N.** Nursing, Hebrew University, 1996.

Professional Experience

- **2013 to date**: Health Services Research Department, Ministry of Health, Israel.
- **2014- to date:** Lecturer in nursing, quality assurance and risk management, Academic College of Israel, Ramat Gan.
- **1998-2013**, Intensive Cardiac Care Unit, Poria Medical Centre, Israel.

Research Background

- **Health** is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1946).
- **Quality of life** is an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (Diener, 2000).
- **'Disablism'** disables people from having equal opportunities to be part of society (Shakespeare & Watson, 2002).

Research Background

- **Stroke** (CVA) is the third most common cause of death and the first cause of disability in the western world and Israel (Streifler *et al.*, 2013).
- Early assessment, quick diagnosis, and early determination of the appropriate treatment are the main **care quality indicators** for stroke (Akka-Zohar *et al.*, 2015).
- **Stroke** can severely damage autonomy, self-image, social relationships and one's whole quality of life (Carod-Artal F.J & J.A, 2009).

The importance of this research: The knowledge gap (1)

- Using agreed indicators to measure quality of care is the most effective tool for improving quality of care at the national level (Hibbard *et al.*, 2005).
- This study is the first in Israel to measure the impact of quality indicators on the treatment process and clinical outcomes of acute stroke, and the post-discharge quality of life of stroke sufferers.
- This study maps the barriers to improving the care and treatment of stroke patients by means of instituting care quality indicators.

The importance of this research: The knowledge gap (2)

- This study generates a more informed and evidence-based understanding of the stroke experience and treatment process from the two points of view of the patient and the healthcare system
- The study also demonstrates how clinical and quality-of-life outcomes—separately and together—need to be measured in order to understand the patient's response to the stroke care and treatment system.
- It is hoped that the findings will result in a better care and treatment system for acute ischemic stroke and a reduction in the disability, physical and social, that the illness causes.

The Israel Program of Health Care Quality Indicators (IPHCQI)

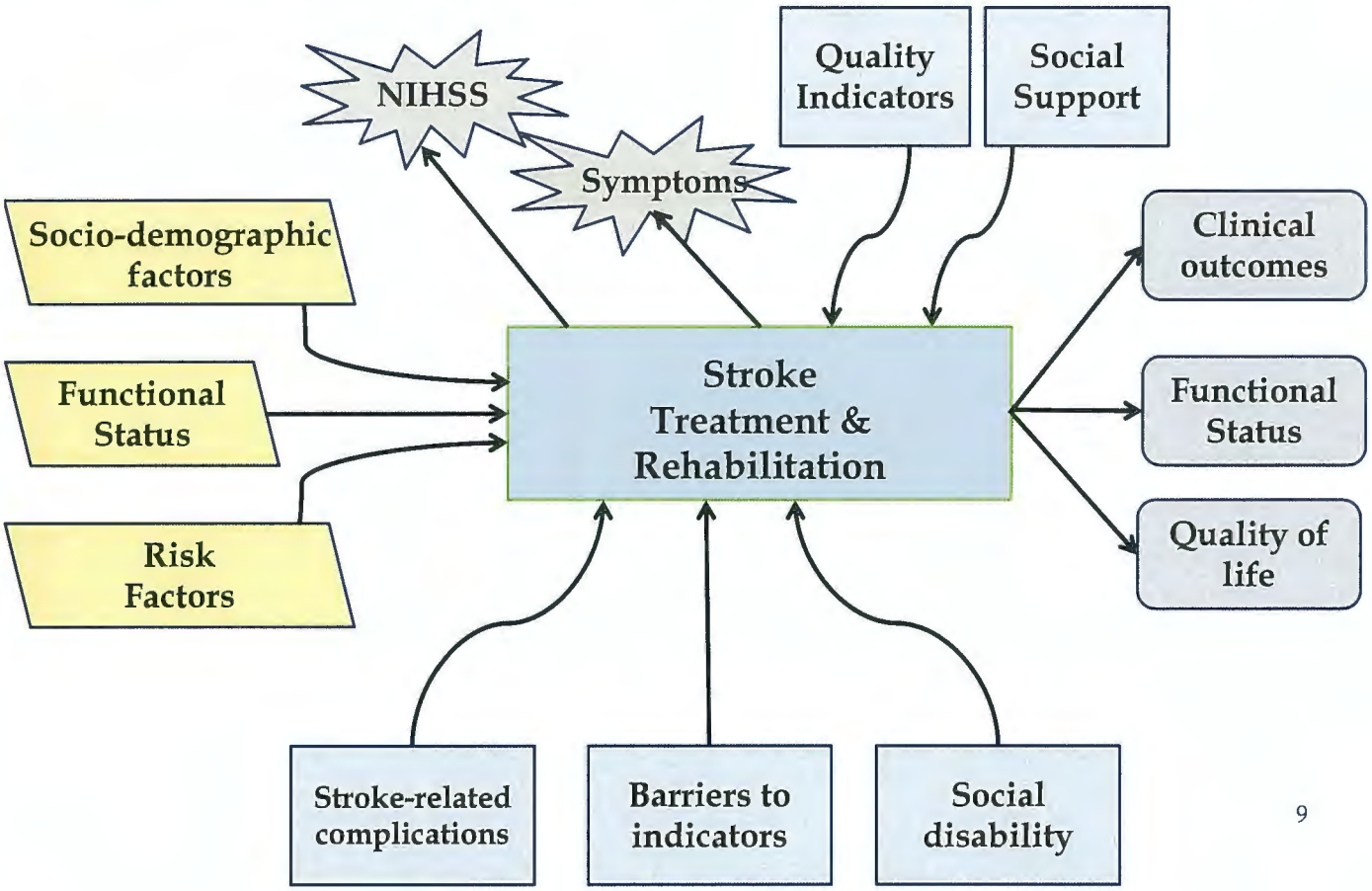
- Since 2013, five indicators of the quality of stroke care and treatment have been measured

1. Early assessment by ambulance crew.
2. Ambulance crew report symptoms to the hospital before the patient arrives.
3. On admission -- rapid diagnosis and determination of appropriate treatment.
4. Administration of optimal therapies.
5. Post-discharge rehabilitation care.

The main theories underpinning the present study

- **Measuring quality of life** (Diener & Suh, 1997).
- **Quality of life as an indicator of state of health** (Grad, 2002).
- **Social Disabilism** (Shakespeare & Watson, 2002).
- **Total Quality Management (TQM)** (Deming, 1982).
- **Continuous Improvement** (Deming, 1982;1986).
- **Organizational culture and the driving of system change** (Lohr, 1990).
- **Care quality management** (Donabedian, 1988).
- **Gender and cultural differences in patients' response to medical care and treatment** (Feldman-Idov, 2010).

Conceptual Framework



Research Aims

- **Overall aim:** To investigate the impact of implementing care quality indicators on the treatment of ischemic stroke and treatment outcomes.
- **Subsidiary aims:**

1. To evaluate to what extent the quality care indicators meet their objectives in the three care and treatment phases – pre-hospital, hospital, rehabilitation.
2. To quantify treatment outcomes (mortality, second stroke, complications) in the three months after the first stroke.
3. To evaluate post-discharge quality of life in relation to the meeting of care indicator objectives across all treatment phases.
4. To identify and map the barriers to the implementation of quality care indicators in the care and treatment of ischemic cerebral stroke (including sociodemographic and socioeconomic factors).

Research questions

1. What effect has the implementation of quality indicators had on the treatment process for ischemic stroke?
2. What effect has the implementation of quality indicators had on the post-discharge illness and functioning outcomes and quality of life of stroke sufferers?
3. What barriers obstruct the implementation of quality indicators in the treatment of ischemic stroke? To what extent do these barriers reflect socioeconomic and sociodemographic factors?

Research Hypotheses

- **Overall hypothesis:** The implementation of quality care indicators into the care and treatment of ischemic cerebral stroke will be associated with a positive effect on the treatment process and its outcomes.
- **Subsidiary hypotheses:**

1. After the implementation of quality care indicators into the three care and treatment phases—pre-hospital, hospital, rehabilitation—these phases will better meet their objectives.
2. Treatment outcomes will be better, the more firmly quality care indicators are implemented into the treatment process.
3. Post-discharge quality of life will be higher, the more the quality care indicators meet their objectives with respect to patient care and treatment.
4. The fuller the identification and mapping of the barriers to the implementation of quality care indicators into the care and treatment of ischemic cerebral stroke the more successfully these indicators will be implemented.

Research type and research paradigm

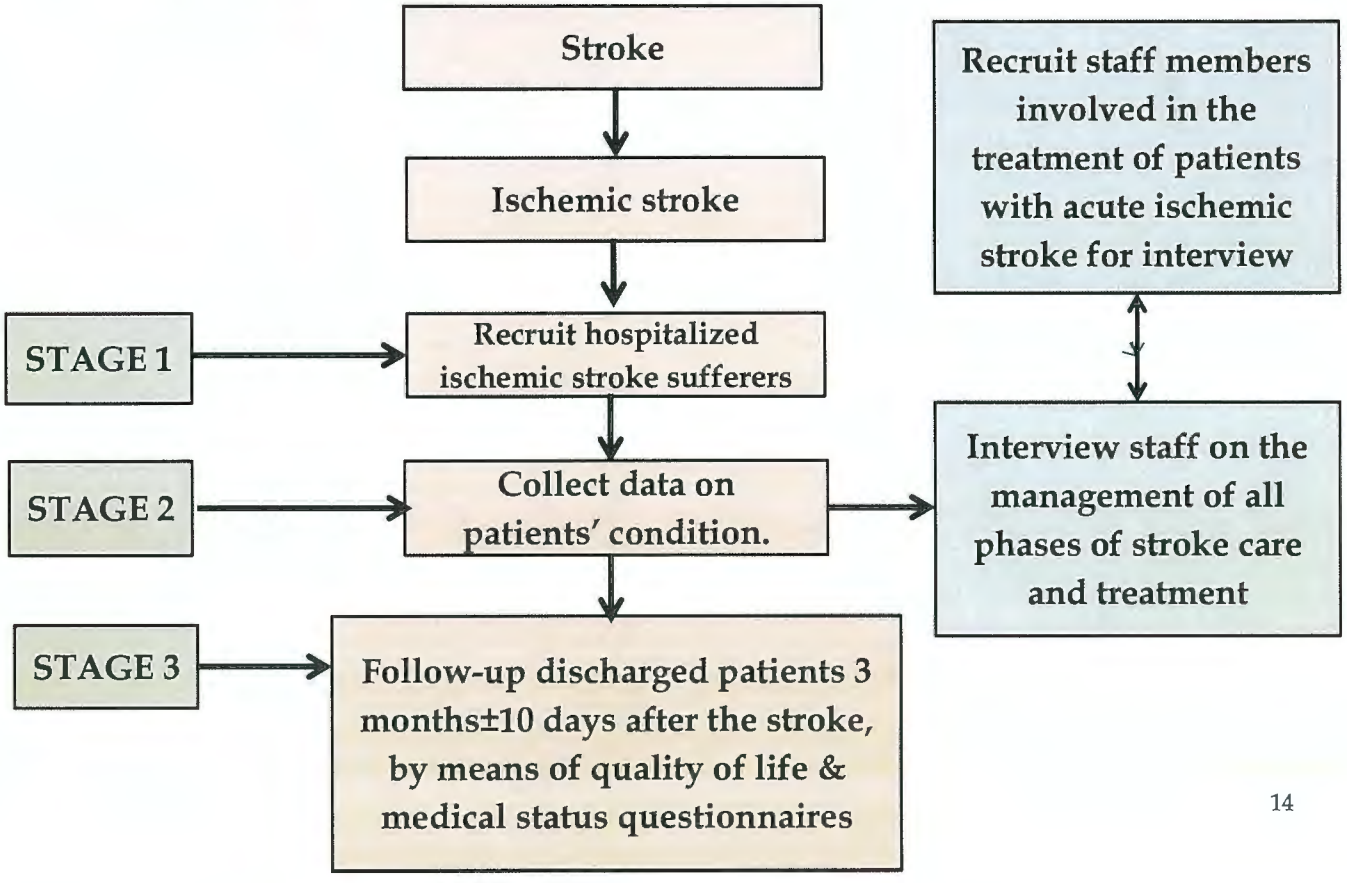
Process and outcomes evaluation project

To investigating the effect and effectiveness of treatment innovations on the patient experience and treatment outcomes.

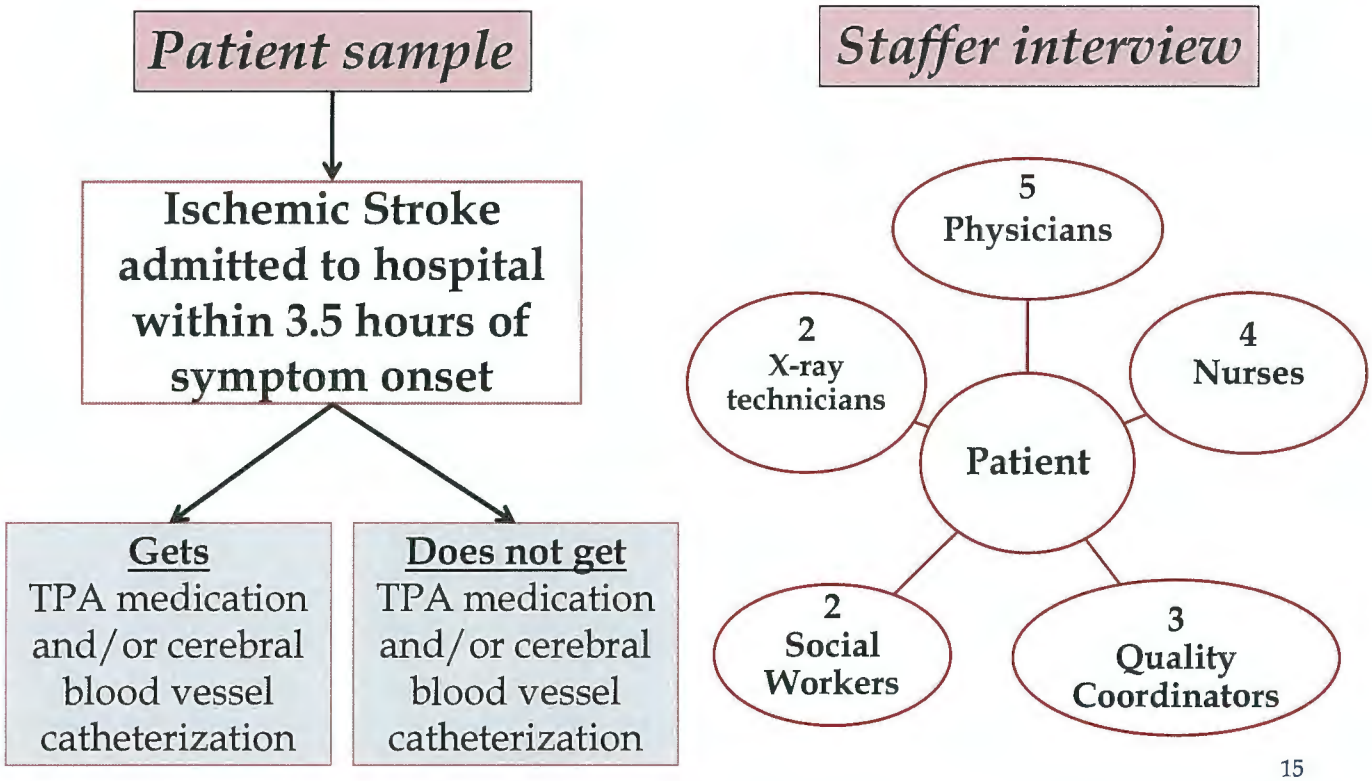
Mixed Methods approach

Combining quantitative and qualitative data collection methods

Research design



Research population and sampling



Research tools

- Questionnaire to hospitalized patients and/or family members
- Patient follow-up questionnaire
  - SF12 questionnaire on current quality of life
- Hospital staffer interview

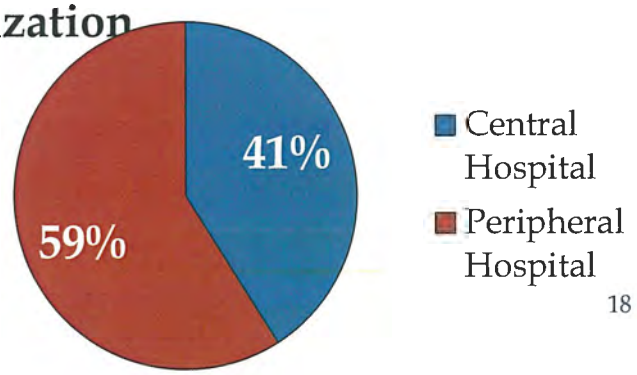
Ethical issues

Approval for the study:

- ✓ The Helsinki Committee in each hospital gave its approval to the type and structure of the proposed study.
- ✓ Each hospital gave its approval to conducting the research at the hospital.

Sampling and data collection process

- **120 patients** completed their first interview during their period of in-patient care and then a post-discharge follow-up interview.
  - **Group A: 77 were administered tPA and/or cerebral artery catheterization**
  - **Group B: 43 were not administered tPA and/or cerebral artery catheterization**



Quantitative findings

Findings emerging from Research Question 1

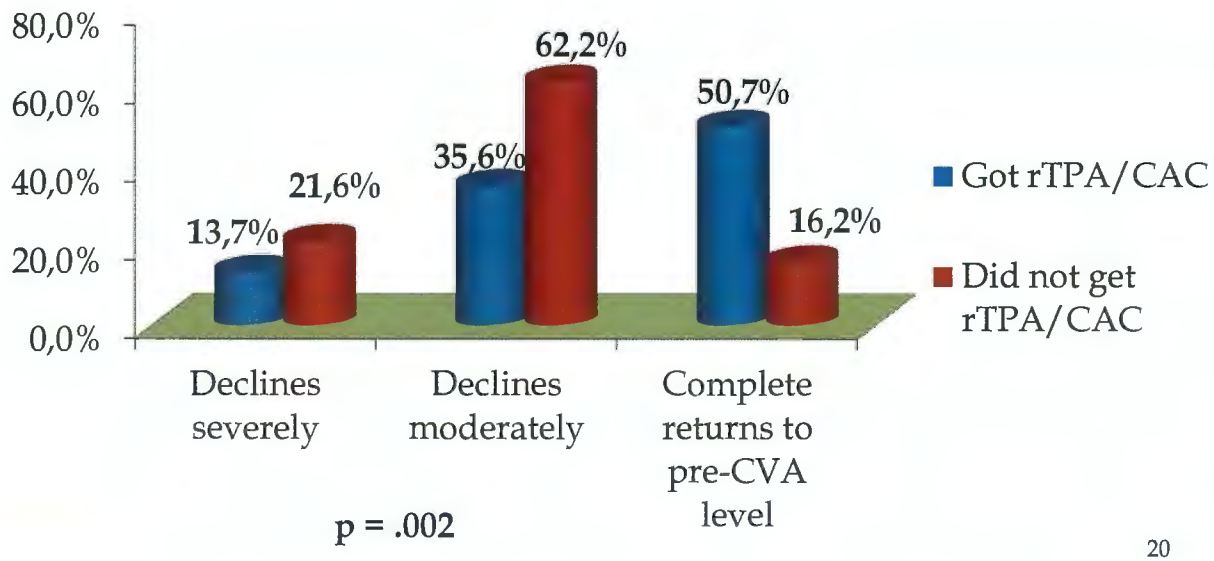
Patient sample by receipt/non-receipt of recommended therapies, and by relevant sociodemographic and treatment variables (Percentages only)

	Group A	Group B
Mean age (in years)	67	70
Male	67	33
Female	60	40
Central region	86	14
Peripheral region	49	51
Jewish	79	21
Non-Jewish	47	53
Brought to hospital by ambulance	53	35
Received preliminary FAST assessment	44	28
Hospital received warning of patient's imminent arrival	62	19
Mean time elapsed from admission to CT scan (in minutes)	32	68
Discharged from hospital to rehabilitation care	42	19

Quantitative findings

Findings emerging from Research Question 2

Functioning level change from pre-CVA to 3-month follow-up by receipt/non-receipt of rTPA/CAC

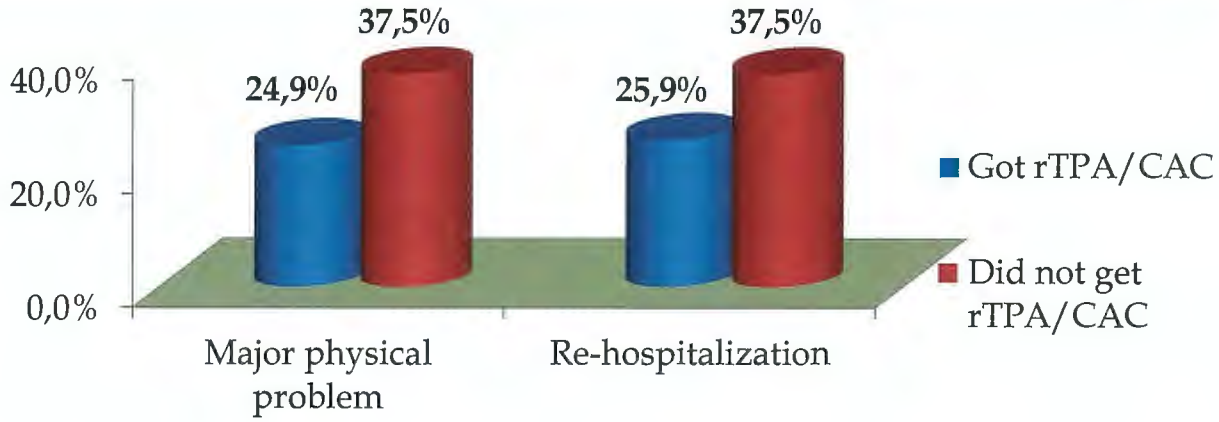


p = .002

Quantitative findings

Findings emerging from Research Question 2

Re-hospitalization and other physical problems during the 3 months after hospital discharge by receipt/non-receipt of rTPA/CAC



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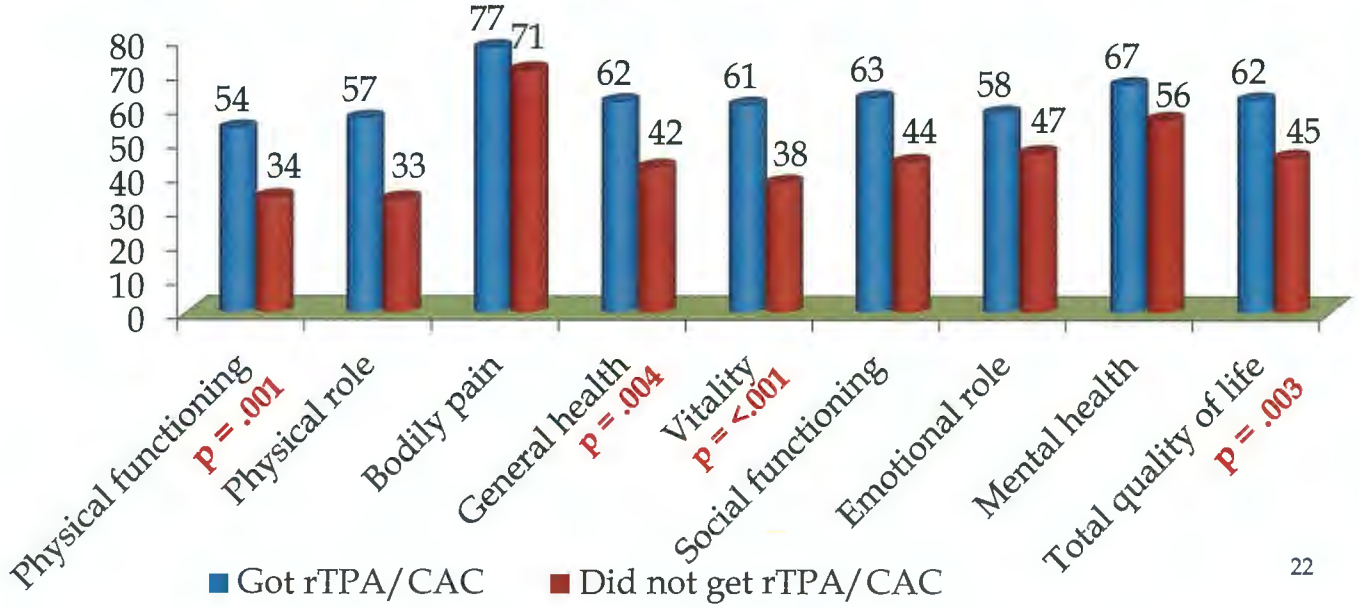
Quantitative findings

Findings emerging from Research Question 2

Quality-of-life components in the three months after hospital discharge by receipt/non-receipt of rTPA/CAC (Scores range from 1= Many difficulties, to 100=No difficulty)



Qualitative findings

Findings emerging from Research Question 3

Barriers to the implementation of care quality indicators in stroke care, by percentage of interviewed staffers citing them

1. **Awareness barriers:**
   a) In the general population: (87%)
   b) In medical staff: (31%)
2. **Professional practice and organization:**
   a) Professional practice: (31%)
   b) Organization of care: (94%)
3. **Coordination and communication:**
   a) Staff-patient: (31%)
   b) Staff-staff: (63%)
4. **Sociodemographic and socioeconomic factors**
   a) In patients: (62%)
   b) In staff and care facilities: (69%)

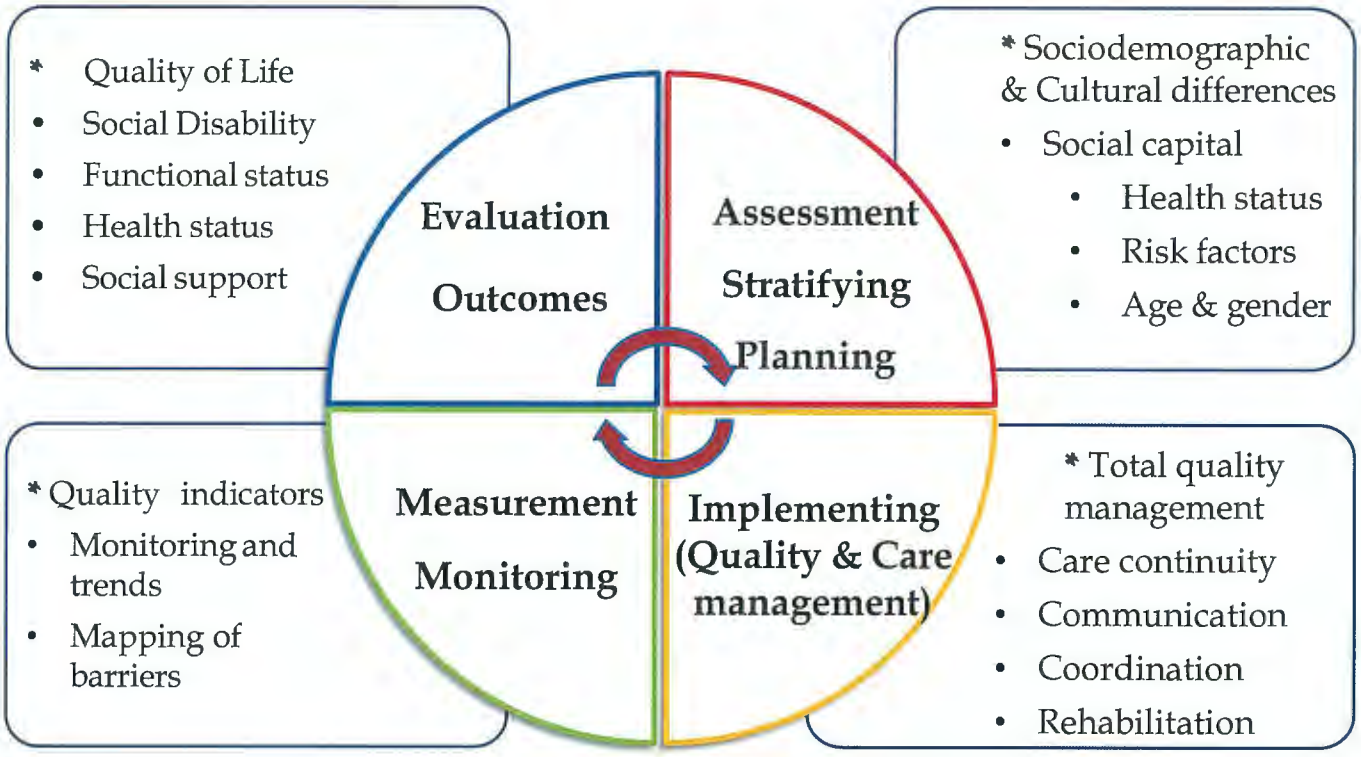
Qualitative findings

Examples of responses (staffer questionnaire)

Barriers	Examples of responses
Awareness barriers	
• In patients	*"Lots of patients don't understand their symptoms and arrive by car."*
• In staff.....	*"Some GPs miss the diagnosis of stroke"*
Practice barriers	
• In professional practice.....	*"There are a few instances where delays make you miss the treatment window"*
• Organizational	*"In my opinion you need to reinforce Emergency Room staff at every level"*
Coordination, Communication	
• Staff-patients	*"Some patients can't explain exactly what's happened to them"*
• Staff – staff.....	*"There are still breakdowns in coordination between team members"*
Sociodemographic, Socioeconomic	
• In patients	*"Women wait at home with their symptoms...."*
• In staff and care facilities.....	*".....facilities won't take people over 60."*

Conclusions:

A model for improving the treatment of ischemic stroke (ITIS) from a social and organizational perspective



Practical implications of the findings and recommendations for change (1)

- Raise patients' ability to identify stroke symptoms and their awareness of the urgency of getting to a hospital. Raise the quality and coverage of the ambulance services that can get them there.
- Provide the North an ambulance service and rehabilitation facilities of similar quality and coverage to that enjoyed by Central region residents.
- Patient-reported outcome indicators offer enormous potential to improve the quality and results of health services by providing validated evidence of health and functioning from the patient point of view.

Practical implications of the findings and recommendations for change(2)

- When three of the major barriers to improved stroke care are impacted by QIs only to a minor extent it is evident that policy makers have to step outside the box of care quality improvement.
- Israeli neurologists and ER doctors need to be (a) reminded of the national treatment guidelines with respect to older stroke patients, and (b) urged to put more effort into communicating with them in order to speed up diagnosis and treatment.

Research Limitations

- The study pays too little attention to the pre-hospital and post-hospital phases of stroke care. No ambulance or rehabilitation staff were interviewed and adding these is an obvious next step.
- Although the patient sample was technically a convenience sample it was large enough not to suffer from the shortcomings in generalizability of most convenience samples.
- Although staff from only three hospitals were interviewed there is no reason to doubt that the same disparities quantified here between the North and Central regions obtain between all peripheral regions and the center.

Contributions to knowledge

- The present study has made useful contributions to the application of two theories of management—Total Quality Management (Deming 1982) and Care Quality Management (Donabedian, 1988).
- It has also contributed usefully to the practical measurement of two concepts much in debate among contemporary researchers, Social Disablism (Shakespeare & Watson, 2002) and health-related quality of life (Diener, 1984).
- The findings of this study provide policy makers valuable feedback on the effectiveness of care quality indicators in improving care and outcomes in stroke care
- The study's findings and conclusions, if followed up, will reduce stroke-related disability and mortality rates, reduce social barriers to stroke victims with disability, improve their access to services and, in general, raise survivors' post-discharge quality of life.

Future Research

- Investigate this same issue based on a wider population
- Investigate this issue from the point of view of other care sectors and regions.
- Investigate the issues of gender and age discrimination.
- Carry out similar studies with respect to the treatment of other illnesses and conditions.

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