Giorno 6

Quali studi per quali domande? La ricerca QUANTITATIVA e la ricerca QUALITATIVA







Michela Bozzolan

a.acc. 2016-17

In questa presentazione...

Ricerca quantitativa e qualitativa

RESEARCH RESEARCH METHODS + THEORY







© Can Stock Photo - csp11801714

"Quanto": ricerca quantitativa







"Cosa" (significa per le persone): ricerca qualitativa





Molti sono i fenomeni di potenziale oggetto di studio...



In generale potremmo essere interessati a capire:

- QUANTO è il fenomeno
 - es. Quanto grande è un miglioramento medio della disabilità a seguito di un intervento
- CHE COSA è il fenomeno
 - Es. Come si sente la persona effettuando quell'intervento
- Le due cose INSIEME



Il paradigma quantitativo di raccolta dei dati psico-sociali è adeguato?

Oggi l'esperienza personale del dolore, disabilità etc viene raccolta tramite questionari (vedi SF-36 etc..) di cui vengono testate le proprietà psicometriche.

Ma esistono significative limitazioni: variabilità e profondità dell'esperienza.

Inoltre si tende alla semplificazione in modo da rendere più rapida la somministrazione è più "trattabile" il dato.

The art and science of clinical knowledge: evidence beyond measures and numbers Kirsti Malterud

...Clinical knowledge consists of interpretive action and interaction—factors that involve communication, opinions, and experiences.

The traditional quantitative research methods represent a confined access to clinical knowing...

The tacit knowing of an experienced practitioner should also be investigated, shared, and contested.

Qualitative research methods ... the exploration of social events as experienced by individuals in their natural context.

Quali outcome?

La ricerca qualitativa si propone di comprendere i fenomeni riguardanti l'uomo partendo dal presupposto che l'uomo ed il suo corpo non possono essere separati dall'esperienza sociale che contribuisce a modellare le loro esperienze individuali di malattia, dolore o disabilità.

La ricerca qualitativa

- Parte dal presupposto che verità e realtà non sono assolute
- Si focalizza sulla comprensione del significato che le persone hanno costruito o come esse interpretano il mondo e le esperienze che sperimentano nella loro realtà



The Cochrane Qualitative Research Methods Group

The Cochrane Qualitative Research Methods Group (CQRMG) is one of ten international Cochrane Methods Groups. It consists of Co-Convenors, Members and Group Affiliates who have an interest and expertise in qualitative research approaches and in the science of qualitative systematic reviews and who wish to keep abreast of the work of the Group. The central concerns of the group relate to increasing an awareness of the role of qualitative evidence in guiding health care practices; the development of approaches suitable for systematically reviewing qualitative evidence; and the training of reviewers in qualitative meta-synthesis.

Metodi diversi

- Ricerca quantitativa e qualitativa hanno ciascuna propri DIVERSI paradigmi e metodi
- La ricerca con metodi misti (mixed methods research) li usa entrambi
 - Idealmente offrendo una visione globale
 - Potenzialmente MOLTO interessanti per le professioni sanitarie

Ricerca qualitativa

- Qualitative methods aim to make sense of, or interpret, phenomena in terms of the meanings people bring to them
- Qualitative research may define preliminary questions which can then be addressed in quantitative studies
- A good qualitative study will address a clinical problem through a clearly formulated question and using more than one research method (triangulation)
- Analysis of qualitative data can and should be done using explicit, systematic, and reproducible methods

BMJ 1997;315:740

Esempi di metodi di ricerca qualitativa

Examples of qualitative research methods

- Documents—Study of documentary accounts of events, such as meetings
- Passive observation Systematic watching of behaviour and talk in natural occurring settings
- Participant observation Observation in which the researcher also occupies a role or part in the setting, in addition to observing
- In depth interviews —Face to face conversation with the purpose of exploring issues or topics in detail. Does not use preset questions, but is shaped by a defined set of topics
- Focus groups Method of group interview which explicitly includes and uses the group interaction to generate data

Esempi di strumenti per la ricerca qualitativa

Analisi di DOCUMENTI- studio di resoconti documentari di eventi, quali i meeting, le cartelle etc...

OSSERVAZIONE - osservazione sistematica da parte del ricercatore di comportamenti e conversazioni che si svolgono nel loro ambiente naturale

OSSERVAZIONE PARTECIPATIVA - osservazioni in cui il ricercatore, oltre ad osservare, occupa anche un ruolo o è parte del setting

Esempi di strumenti per la ricerca qualitativa

INTERVISTE- conversazioni dirette (" a tu per tu") allo scopo di esplorare in dettaglio determinate tematiche. Non utilizza domande preconfezionate, ma prende forma grazie ad un definito set di argomenti

FOCUS GROUP- metodo di intervista di gruppo che prevede ed sfrutta l'interazione del gruppo per ottenere dati

SHADOWING- il ricercatore diventa "l'ombra" del soggetto

Qualitative versus quantitative research—the overstated dichotomy

	Qualitative	Quantitative
Social theory	Action	Structure
Methods	Observation, interview	Experiment, survey
Question	What is x? (classification)	How many xs? (enumeration)
Reasoning	Inductive	Deductive
Sampling method	Theoretical	Statistical
Strength	Validity	Reliability

[•]Reproduced with permission from Mays and Pope, Qualitative Research in Health Care

Ricerca qualitativa vs quantitativa

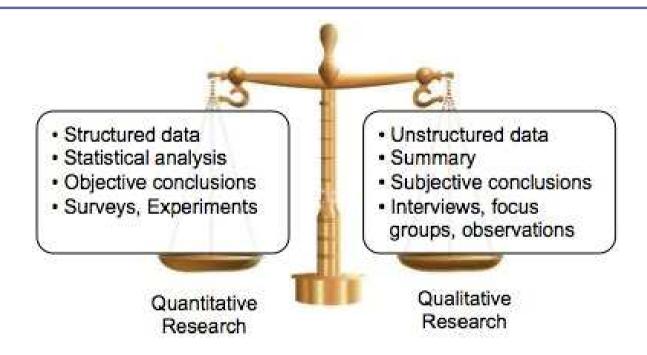
	Qualitativa	Quantitativa
Teoria sociale	Azione	Struttura
Metodi	Osservazione, intervista	Esperimento , survey
Domanda	Che cos'è X (classificazione)?	Quanti X (numerosità)?
Ragionamento	Induttivo	Deduttivo
Metodo di campionamento	Teorico	Statistico
Forza	Validità	Affidabilità

RIGORE!

- Come nella ricerca quantitativa, deve essere posta la stessa attenzione al
 - Rigore metodologico
 - Trasparenza dei metodi e risultati

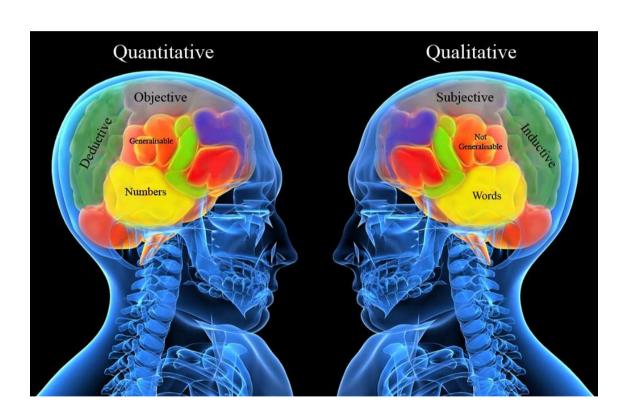


Metodi diversi



Ma complementari!





Verifichiamo se è chiaro

□ Il mal di schiena

Early Physical Therapy vs Usual Care in Patients With Recent-Onset Low Back Pain: A Randomized Clinical Trial

Low back pain (LBP) is common in primary care. Guidelines recommend delaying referrals for physical therapy.

- **OBJECTIVE:** To evaluate whether early physical therapy (manipulation and exercise) **is more effective** than usual care in improving disability for patients with LBP fitting a decision rule.
- **DESIGN, SETTING, AND PARTICIPANTS: Randomized clinical trial** with 220 participants recruited between March 2011 and November 2013. Participants with no LBP treatment in the past 6 months, aged 18 through 60 years (mean age, 37.4 years [SD, 10.3]), an Oswestry Disability Index (ODI) score of 20 or higher, symptom duration less than 16 days, and no symptoms distal to the knee in the past 72 hours were enrolled following a primary care visit.
- **INTERVENTIONS:** All participants received education. Early physical therapy (n = 108) consisted of 4 physical therapy sessions. Usual care (n = 112) involved no additional interventions during the first 4 weeks.
- **MAIN OUTCOMES AND MEASURES:** Primary outcome was change in the ODI **score** (range: 0-100; higher scores indicate greater disability; minimum clinically important difference, 6 points) at 3 months. Secondary outcomes included changes in the ODI score at 4-week and 1-year follow-up, and change in pain intensity, Pain Catastrophizing Scale (PCS) score, fear-avoidance beliefs, quality of life, patient-reported success, and health care utilization at 4-week, 3-month, and 1-year follow-up.
- ■RESULTS: One-year follow-up was completed by 207 participants (94.1%). Using analysis of covariance, early physical therapy showed improvement relative to usual care in disability after 3 months (mean ODI score: early physical therapy group, 41.3 [95% CI, 38.7 to 44.0] at baseline to 6.6 [95% CI, 4.7 to 8.5] at 3 months; usual care group, 40.9 [95% CI, 38.6 to 43.1] at baseline to 9.8 [95% CI, 7.9 to 11.7] at 3 months; between-group difference, -3.2 [95% CI, -5.9 to -0.47], P = .02). A significant difference was found between groups for the ODI score after 4 weeks (between-group difference, -3.5 [95% CI, -6.8 to -0.08], P = .045]), but not at 1-year follow-up (between-group difference, -2.0 [95% CI, -5.0 to 1.0], P = .19). There was no improvement in pain intensity at 4-week, 3-month, or 1-year follow-up (between-group difference, -0.42 [95% CI, -0.90 to 0.02] at 4-week follow-up; -0.38 [95% CI, -0.84 to 0.09] at 3-month follow-up; and -0.17 [95% CI, -0.62 to 0.27] at 1-year follow-up). The PCS scores improved at 4 weeks and 3 months but not at 1-year follow-up (between-group difference, -2.7 [95% CI, -4.6 to -0.85] at 4-week follow-up; -2.2 [95% CI, -3.9 to -0.49] at 3-month follow-up; and -0.92 [95% CI, -2.7 to 0.61] at 1-year follow-up). There were no differences in health care utilization at any point.
- **CONCLUSIONS AND RELEVANCE:** Among adults with recent-onset LBP, early physical therapy resulted in **statistically significant improvement** in disability, but the improvement was modest and did not achieve the minimum clinically important difference compared with usual care.

 24

BMJ Open. 2015 Oct 19;5(10):e008847.

Beliefs underlying pain-related fear and how they evolve: a qualitative investigation in people with chronic back pain and high pain-related fear.

Bunzli et al

OBJECTIVES: The **fear-avoidance model** describes how the belief that pain is a sign of damage leads to pain-related fear and avoidance. But other beliefs may also trigger the fear and avoidance responses described by the model. Experts have called for the next generation of fear avoidance research to explore what beliefs underlie pain-related fear and how they evolve. We have previously described damage beliefs and suffering/functional loss beliefs underlying high pain-related fear in a sample of individuals with chronic back pain. The aim of this study is to identify common and differential factors associated with the beliefs in this sample. DESIGN: A qualitative study employing **semistructured interviews**. SETTING: Musculoskeletal clinics in Western Australia. PARTICIPANTS: 36 individuals with chronic back pain and high scores on the Tampa Scale (mean 47/68). RESULTS: The overarching theme was a pain experience that did not make sense to the participants. The experience of pain as unpredictable, uncontrollable and intense made it threatening. Attempting to make sense of the threatening pain, participants with damage beliefs drew on past personal experiences of pain, societal beliefs, and sought diagnostic certainty. Met with diagnostic uncertainty, or diagnoses of an underlying pathology that could not be fixed, they were left fearful of damage and confused about how to 'fix' it. Participants with suffering/functional loss beliefs drew on past personal experiences of pain and sought help from healthcare professionals to control their pain. Failed treatments and the repeated failure to achieve functional goals left them unable to make 'sensible' decisions of what to do about their pain. CONCLUSIONS: The findings raise the suggestion that sense-making processes may be implicated in the fear-avoidance model. Future research is needed to explore whether fear reduction may be enhanced by considering beliefs underlying fear and providing targeted intervention to help individuals make sense of their pain.

Si possono unire i due approcci (quantitativo e qualitativo?)

Advancements in Contemporary Physical Therapy Research: Use of Mixed Methods Designs

Lauren Rauscher, Bruce H Greenfield

The purpose of this article is to advocate for the use of mixed methods designs in contemporary physical therapist research. Mixed methods designs are used for collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies to both explain and explore specific research problems, thereby enriching the breadth and depth of understanding phenomena. These designs are particularly well suited for physical therapist researchers to reveal the complexity of disablement, rehabilitation, and recovery processes. Although contextual factors influence a person's health condition and recovery, they remain empirically less understood and underexplored by physical therapist researchers. To address this gap, the authors describe various combinations of quantitative and qualitative methods and data within a single study or set of related studies and the decisions that underlie the uses of these combinations. They include examples from current physical therapist research and applications from the International Classification of Functioning, Disability and Health (ICF) model. They argue that the rigorous application of quantitative and qualitative methods and data can propel physical therapist research and practice forward by stimulating new research questions, creating a holistic understanding of patient injury and rehabilitation, and contributing to innovative, complex treatment interventions.

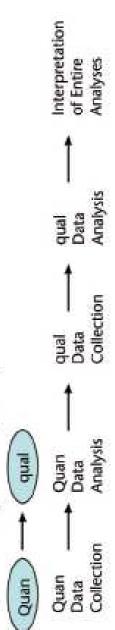
L Rauscher, PhD, is Assistant Professor (Sociology), Department of Human Development, California State University–Long Beach, Long Beach, California.

BH Greenfield, PT, PhD, OCS, is Assistant Professor, Division of Physical Therapy, Department of Rehabilitation Medicine, Emory University School of Medicine, 1441 Clifton Rd NE, Atlanta, GA 30322 (USA). Address all correspondence to Dr Greenfield at: bgreenf@emory.edu.

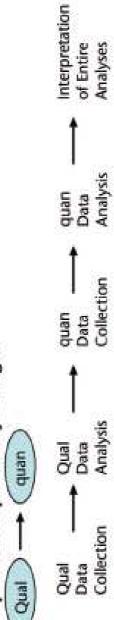
[Rauscher L, Greenfield BH. Advancements in contemporary physical therapy research: use of mixed methods designs. *Phys Ther.* 2009; 89:91–100.1

© 2009 American Physical Therapy Association

Sequential Explanatory Design



Sequential Explanatory Design



Concurrent Triangulation Design

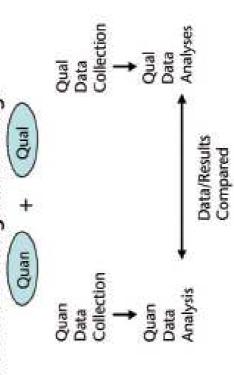
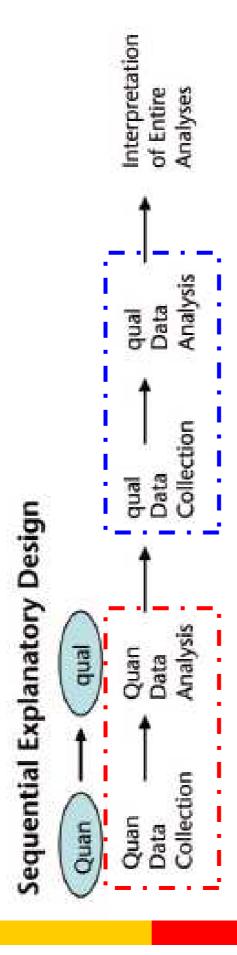
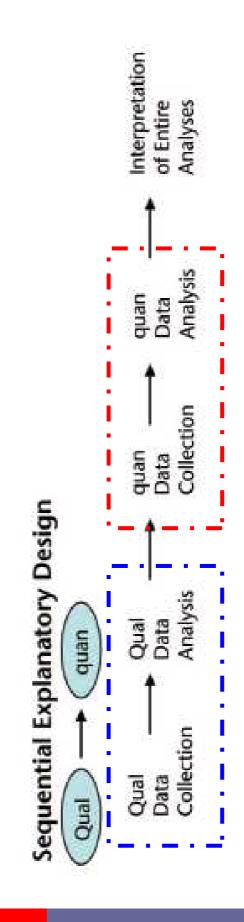


Figure.

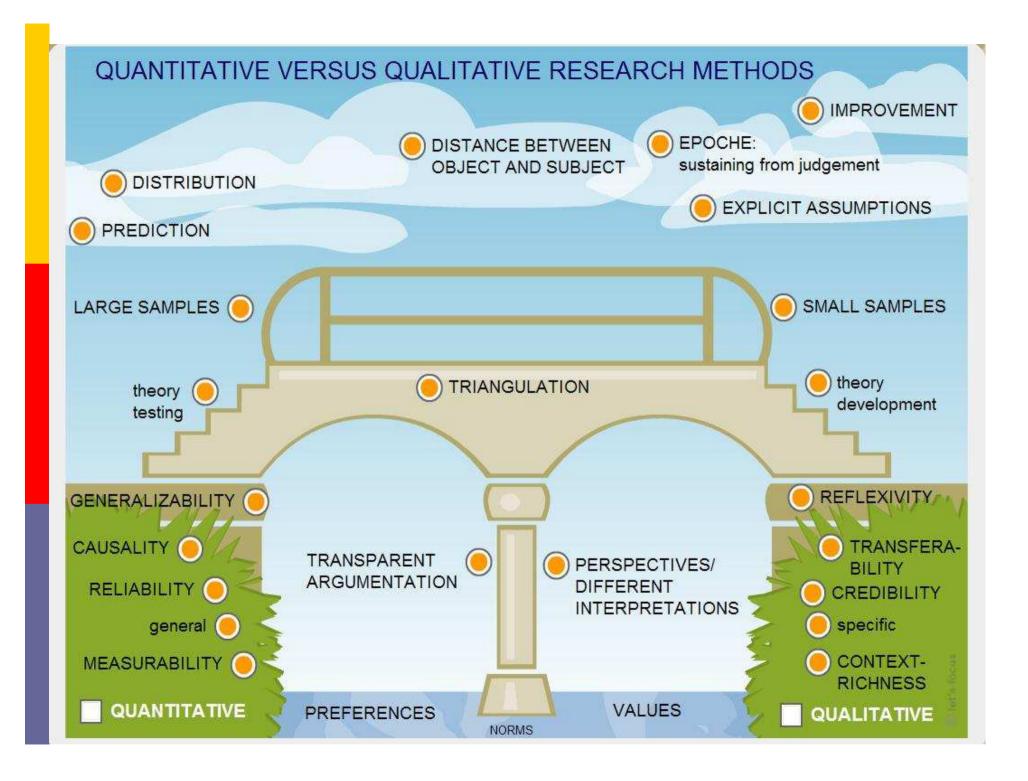
to denote priority in research design maps to specify the researcher's intentions con-Mixed methods designs. Quan=quantitative, qual=qualitative. Capital letters are used cerning which type of data has priority in a given study (ie, Quan-qual, Qual-quan, Quan-Qual).



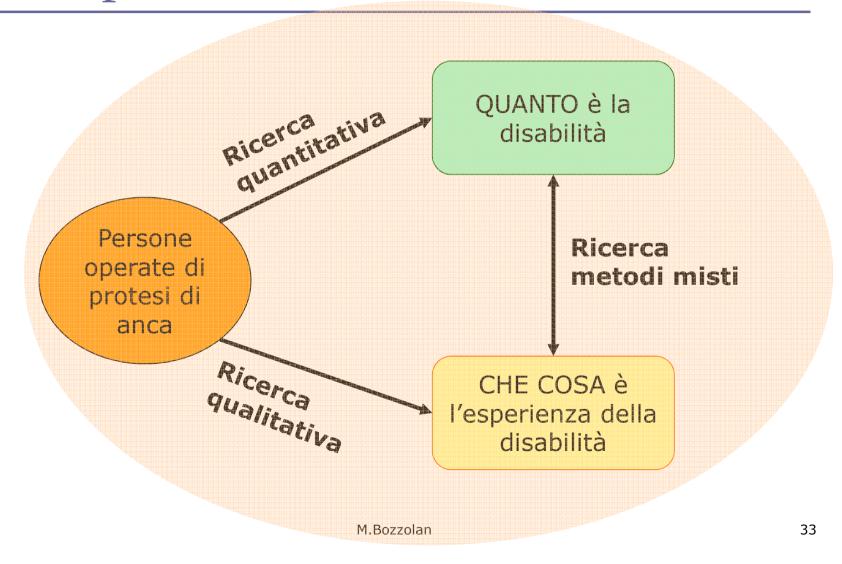


Qual Data Collection ◆ Qual Data Analyses Concurrent Triangulation Design Qual Data/Results Compared Quan Quan Data Collection Quan Data Analysis

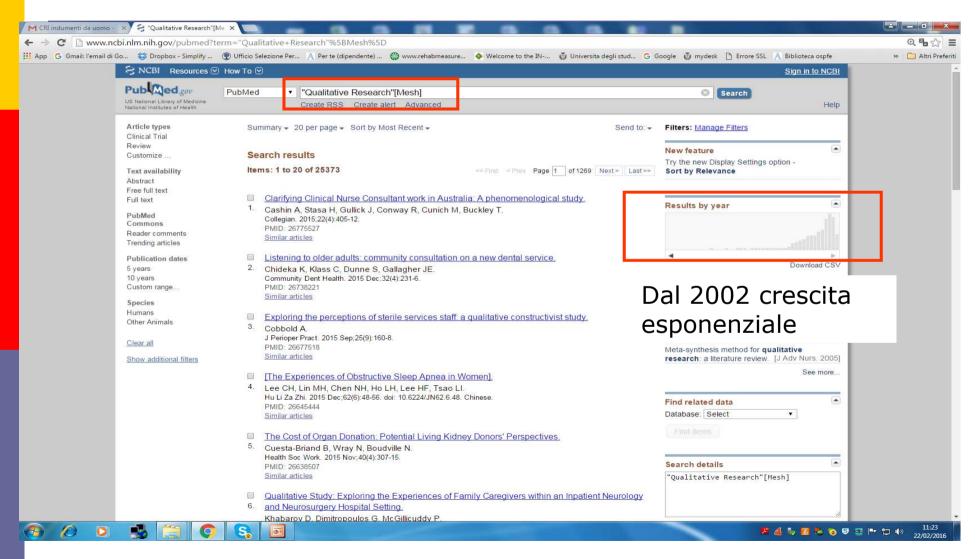
advocate that these designs offer physical therapists a tool to stimulate new research questions, create a holistic understanding of patient injury and rehabilitation, and contribute to innovative, complex treatment interventions. More specifically, we suggest that the complexity of the disablement experience in the current ICF model is better understood through the examination and exploration of the interactions of physical, personal, and environmental factors through mixed methods.



Esempio



Usando il mesh in Pubmed



J Physiother. 2015 Oct; 61(4):210-6.

Public sector physiotherapists believe that staff supervision should be broad ranging, individualised, structured, and based on needs and goals: a qualitative study.

Redpath AA(1), Gill SD(2), Finlay N(1), Brennan F(1), Hakkennes S(3).

QUESTION: What do physiotherapists consider to be the structure and content of an effective clinical supervision program for public sector staff? DESIGN: Qualitative study using emergent-systematic **focus group** design. PARTICIPANTS: 46 physiotherapists and six physiotherapy assistants from a large, regional, Australian health service participated in one of seven focus groups. RESULTS: Data were represented by three major categories: the content of supervision; the structure of supervision; and participants' roles and attributes. The content of supervision should encompass all issues affecting workplace experience and performance; supervision should be individualised and needs based. For the structure of supervision, a variety of methods and formats should be available, including: scheduled and unscheduled supervision (unscheduled supervision addresses needs as they arise but its usefulness can be restricted by supervisor availability); the environment should be organised to facilitate supervision; supervision should be integrated into existing practices; and supervision should be adequately prioritised and resourced to enable sustainability. In relation to participants' roles and attributes, respondents recommended: clearly defined supervisor and supervisee roles, responsibilities, skills and attributes are required to facilitate a constructive relationship on which successful supervision depends; the supervisee should take primary responsibility for leading and organising their supervision; the supervisor provides support and accountability and assists with goal setting and attainment; and successful supervision requires considerable knowledge and skills from the supervisee and supervisor (supervision education and training might be necessary). CONCLUSION: The physiotherapists' perspectives that were identified in this study are important to consider when assessing current clinical supervision models, as well as when designing and implementing effective physiotherapy supervision programs. [Redpath AA, Gill SD, Finlay N, Brennan F, Hakkennes S (2015) Public sector physiotherapists believe that staff supervision should be broad ranging. Fratividualised, structured, and based on needs and goals: a qualitative study. Journal of Physiotherapy 61: 210-216].

The use of clinical practice guidelines in primary care: professional mindlines and control mechanisms.

OBJECTIVE:

To identify the **relevant barriers and enablers perceived** by primary care professionals in implementing the recommendations of clinical practice guidelines (CPG).

METHODS:

Two **focus groups** were conducted with primary care physicians and nurses in Catalonia (Spain) between October and December 2012. Thirty-nine health professionals were selected based on their knowledge and daily use of CPG. Finally, eight general practitioners and eight nurses were included in the discussion groups. Participants were asked to share their views and beliefs on the accessibility of CPG, their knowledge and use of these documents, the content and format of CPG, dissemination strategy, training, professional-patient relationship, and the use of CPG by the management structure. We recorded and transcribed the content verbatim and analysed the data using qualitative analysis techniques.

RESULTS:

Physicians believed that, overall, CPG were of little practical use and frequently referred to them as a largely bureaucratic management control instrument that threatened their professional autonomy. In contrast, nurses believed that CPG were rather helpful tools in their day-to-day practice, although they would like them to be more sensitive to the current role of nurses. Both groups believed that CPG did not provide a response to most of the decisions they faced in the primary care setting.

CONCLUSIONS:

Compliance with CPG recommendations would be improved if these documents were brief, non-compulsory, not cost-containment oriented, more based on nursing care models, sensitive to the specific needs of primary care patients, and integrated into the computer workstation.

Gac Sanit. 2016 Feb 16. pii: S0213-9111(16)00007-8

The psychosocial experience of individuals living with osteogenesis imperfecta: a mixed-methods systematic review.

PURPOSE:

Osteogenesis imperfecta (OI) is a genetic disorder (prevalence: 1:10,000), leading to bone fragility, frequent fractures, and varying degrees of physical limitations. Despite a substantial amount of research on the genetics, pathophysiology, and treatments related to OI, there remains a paucity of knowledge concerning the lived psychosocial experience of the OI population. This mixed-methods systematic review aimed to review, appraise, and synthesize the literature on the psychosocial experience of children and adults with OI with the goal of identifying implications forresearch, practice, and policy-making.

METHODS:

Using a systematic methodology, **quantitative**, **qualitative**, **and mixed-methods studies** were accessed through database searching, screened, assessed for eligibility, and appraised. Data from the selected studies fulfilling the eligibility and quality criteria were extracted and synthesized using thematic analysis with an inductive approach.

RESULTS:

A total of four qualitative and 20 quantitative studies, with various study designs and methodologies ranging in quality, were included in the review (n = 800; comprising 610 children and 175 adults with OI types I, III, IV, and V, ten parents and five healthcare professionals). Six themes were identified: intellectual feats, isolation and feeling different, fear of fractures, coping with challenges, adapting by learning new skills, and social relationships.

CONCLUSION:

These findings highlighted key aspects of the experiences of children and adults with OI and will be essential for improving the quality and direction of research, tailoring clinical interventions addressing the psychosocial needs and quality of life of individuals with OI, and raising awareness among caregivers, healthcare professionals, administrators, and policy-makers associated with the OI population.

Tsimicalis A et al, Qual Life Res. 2016 Feb 19. [Epub ahead of print]

Bio-psycho-social effects of a coordinated neurorehabilitation programme: A naturalistic mixed methods study.

PURPOSE:

Best practice guidelines for neurorehabilitation recommend coordinated rehabilitation programmes to ensure seamless service transitions and comprehensive rehabilitation practices. However, this recommendation for practice and the evidence informing its advancement is based on unexamined assumptions. Therefore, this study investigates bio-psycho-social outcomes and perceptions of a coordinated rehabilitation programme.

METHOD:

In a prospective, naturalistic mixed methods study, rehabilitation outcomes for 82 adults (18-66 years) with moderate to severe acquired brain injury were investigated. Clients who received the coordinated rehabilitation programme KORE (n=27) were compared to clients from the same area who received standard rehabilitation prior to the implementation of the KORE programme (n=37) and clients who received other coordinated efforts elsewhere (n=18). The study employed **quantitative data** from standardized tests (Functional Independence Measure, Major Depression Inventory, Quality of life, and Impact on Participation and Autonomy Questionnaire, as well as information on return to work and **qualitative interviews** with clients (n=82) and their relatives (n=40).

RESULTS:

Outcomes did not improve from hospital discharge to two years later. Notably, physiological recovery had probably been achieved to the extent possible, but depression and reduced psychological well-being remained prevalent across groups. Qualitative interviews suggested several barriers to improvement, such as identity dilemmas and unmet needs for psychological support, while rehabilitation services focused on physical and practical training.

CONCLUSION:

 Coordinated interventions do not guarantee comprehensive rehabilitation and better outcomes for clients with acquired brain injury. Psychological support seems to be important and largely unaddressed.

Multiple sclerosis patients' experiences in relation to the impact of the kinect virtual home-exercise programme: a qualitative study

BACKGROUND:

Neurorehabilitation programs are among the most popular therapies aimed at reducing the disabilities that result from multiple sclerosis. Video games have recently gained importance in the rehabilitation of patients with motor neurological dysfunctions. Currently, the studies describing the perspective of patients with multiple sclerosis who have participated in rehabilitation programmes via home-based video games are almost inexistent.

AIM:

To explore the experiences of multiple sclerosis patients who performed a virtual home-exercise programme using Kinect.

DESIGN:

A qualitative research enquiry was conducted as part of a study that examined postural control and balance after a 10-week Kinect home-exercise programme in adults with multiple sclerosis.

SETTING:

Patients were recruited from the Neurology Unit of San Carlos University Hospital.

POPULATION:

The inclusion criteria were: subjects aged between 20 and 60 years, diagnosed with multiple sclerosis for over 2 years based on the McDonald Criteria; with an EDSS score ranging from 3 to 5.

METHODS:

Purposeful sampling method was implemented. The data collection consisted of unstructured interviews, using open questions, and thematic analysis was conducted. Guidelines for conducting qualitative studies established by the Consolidated Criteria for Reporting Qualitative Research were followed.

RESULTS:

Twenty-four patients with a mean age of 36.69 were included. Four main themes emerged from the data: a) Regaining previous capacity and abilities. The patients described how, after the treatment with Kinect they felt more independent; b) sharing the disease. The patients sharing the experience of living with MS with their family, thanks to the use of Kinect; c) adapting to the new treatment. This refers to how the use of the videogame console incorporated novelties to their rehabilitation programme; and d) comparing oneself. This refers to the appearance of factors that motivate the patient during KVHEP.

CONCLUSIONS:

The patients' experiences gathered in this study highlight perceptions of unexpected improvement, an eagerness to improve, and the positive opportunity of sharing treatment with their social entourage thanks to the games.

CLINICAL REHABILITATION IMPACT:

These results can be applied to future research using video consoles, by individualizing and adapting the games to the patient's abilities, and by developing a new field in rehabilitation

A Study of the Amputee Experience of Viewing Self in the Mirror.

PURPOSE:

To describe the trajectory of viewing self in a mirror after an amputation and participants' perceptions of what health care professionals should know about mirrors.

DESIGN:

 Hermeneutic phenomenology METHODS: Focus groups were conducted to collect the research data.

FINDINGS:

The mirror experience had three key moments: decision, seeing, and consent. The trajectory of viewing self in a mirror had four key themes: mirror shock, mirror anguish, recognizing self, and acceptance: a new normal. Participants' recommendations for introducing the mirror after an amputation and using a mirror to avoid skin breakdown and infection, and correct gait and balance are described.

CONCLUSIONS:

This study provides a unique viewpoint into the world of those who have suffered amputation of a limb.

CLINICAL RELEVANCE:

Rehabilitation nurses and other health care professionals are encouraged through these participants to consider the effect and value of mirrors when caring for those who have had an amputation.

Organisational support for evidence-based practice: occupational therapists perceptions

BACKGROUND:

Barriers to the use of evidence-based practice extend beyond the individual clinician and often include organisational barriers. Adoption of systematic organisational support for evidence-based practice in health care is integral to its use. This study aimed to explore the perceptions of occupational therapy staff regarding the influence of organisational initiatives to support evidence-based practice on workplace culture and clinical practice.

METHODS:

This study used semi-structured interviews with 30 occupational therapists working in a major metropolitan hospital in Brisbane, Australia regarding their perceptions of organisational initiatives designed to support evidence-based practice.

RESULTS:

Four themes emerged from the data: (i) firmly embedding a culture valuing research and EBP, (ii) aligning professional identity with theResearch and Evidence in Practice model, (iii) experiences of change: pride, confidence and pressure and (iv) making evidence-based changes to clinical practices.

CONCLUSION:

Organisational initiatives for evidence-based practice were perceived as influencing the culture of the workplace, therapists' sense of identity as clinicians, and as contributing to changes in clinical practice. It is therefore important to consider organisational factors when attempting to increase the use of evidence in practice.

Bennet et al, Aust Occup Ther J. 2016 Feb;63(1):9-18.

Mission impossible?



No....infatti...

Undergraduate physiotherapy students' competencies, attitudes and perceptions after integrated educational pathways in evidence-based practice: a mixed methods study.

Abstract

This mixed methods study aimed to explore perceptions/attitudes, to evaluate knowledge/ skills, to investigate clinical behaviours of undergraduate physiotherapy students exposed to a composite education curriculum on evidence-based practice (EBP). Students' knowledge and skills were assessed before and after integrated learning activities, using the Adapted Fresno test, whereas their behaviour in EBP was evaluated by examining their internship documentation. Students' perceptions and attitudes were explored through four focus groups. Sixty-two students agreed to participate in the study. The within group mean differences (A-Fresno test) were 34.2 (95% CI 24.4 to 43.9) in the first year and 35.1 (95% CI 23.2 to 47.1) in the second year; no statistically significant change was observed in the third year. Seventy-six percent of the second year and 88% of the third year students reached the pass score. Internship documentation gave evidence of PICOs and database searches (95-100%), critical appraisal of internal validity (25-75%) but not of external validity (5-15%). The correct application of these items ranged from 30 to 100%. Qualitative analysis of the focus groups indicated students valued EBP, but perceived many barriers, with clinicians being both an obstacle and a model. Key elements for changing students' behaviours seem to be internship environment and possibility of continuous practice and feedback. Studenti LMag e triennale (tesi!)

Bozzolan M, Simoni G, Balboni M, Fiorini F, Bombardi S, Bertin N, Da Roit M. Physiother Theory Pract. 2014 Nov;30(8):557-71.