

Intervention Component Analysis

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Occupational therapy interventions
to increase Time-use, activity and
participation and promote health:
A systematic review

Overview of Presentation

- Outline of ICA

How we used it in our review

Summary of its utility

Intervention Component Analysis

- Developed by EPPI-Centre, UCL. (Evidence for Policy and Practice Information)

<https://eppi.ioe.ac.uk/cms/>

- Developed to bridge the gap between evidence of effectiveness of interventions and Practical application of the interventions (clear procedural details)

Two stages of method

First stage

Aims to identify how interventions differ from one another

Two distinct and parallel processes

Effectiveness synthesis

Assessment of risk of bias
narrative analysis

Detailed understanding of the characteristics of included studies

Line-by-line coding of descriptions of interventions

Similar concepts categorised to “map” presence or absence of feature

Capturing informal evidence on the experience of developing and “real-world” experience of using the intervention.

Inductive thematic analysis used to identify emergent themes.

Second stage

Explaining differences in outcomes

- Which intervention features appear to be important in successful outcomes.
- Were studies with negative outcomes qualitatively different from those with positive outcomes

Interventions to reduce paediatric medication error

key features of effective interventions

Electronic prescribing interventions achieving positive outcomes were typically customised for use with children and incorporated extensive decision support; in the three EP studies with negative findings (e.g. increased mortality) these features were largely absent.

Use of ICA

Occupational therapy interventions to increase time-use, activity and participation, and promote health:

A systematic review

- Public health
- Occupational therapy: participation in occupations and its relationship to health
- “Do-Live-Well” framework

To what extent do existing interventions reflect “Do-Live-Well” framework

Objectives of review

- To identify and determine the characteristics of occupational therapy interventions that use time-use and/or activity patterns and/or participation with adults to promote health.
- To ascertain which intervention features were important for successful outcomes.
- To determine the extent to which the content of the interventions reflect the components of the Do-Live-Well framework.
- To assess the effectiveness and cost effectiveness of these interventions in increasing times-use, participation and activity pattern and promoting health.

Methods

- Participants: working age and older adults, aged 18 and over
- Intervention: Descriptions and/or evaluations of occupational therapy interventions that focus on promoting participation in occupation, or aspects of time-use, that is, routine of meaningful occupations, or balancing occupations
- Comparator: usual care or an active control intervention
- Outcome: participation AND wellbeing, wellness or health status

Methods (continued)

- Economic component

Studies involving cost effectiveness, cost benefit, cost minimization, and cost utility.

Limit: January 2000 until June 2016

Search strategy

Electronic databases

CINAHL, Medline, AMED, PsycInfo, EMBASE, E-thos, and Conference Proceedings Citation Index- Web of Science.

Hand search eight Occupational therapy journals

Quality assessment of effectiveness studies

- Quality assessment tool for quantitative studies developed by Effective Public Health Practice Project (2009).
- Studies rated as moderate to high quality, that is, scoring two and above were included in effectiveness synthesis

Synthesis of results

Intervention Component Analysis

Stage One

Effectiveness synthesis

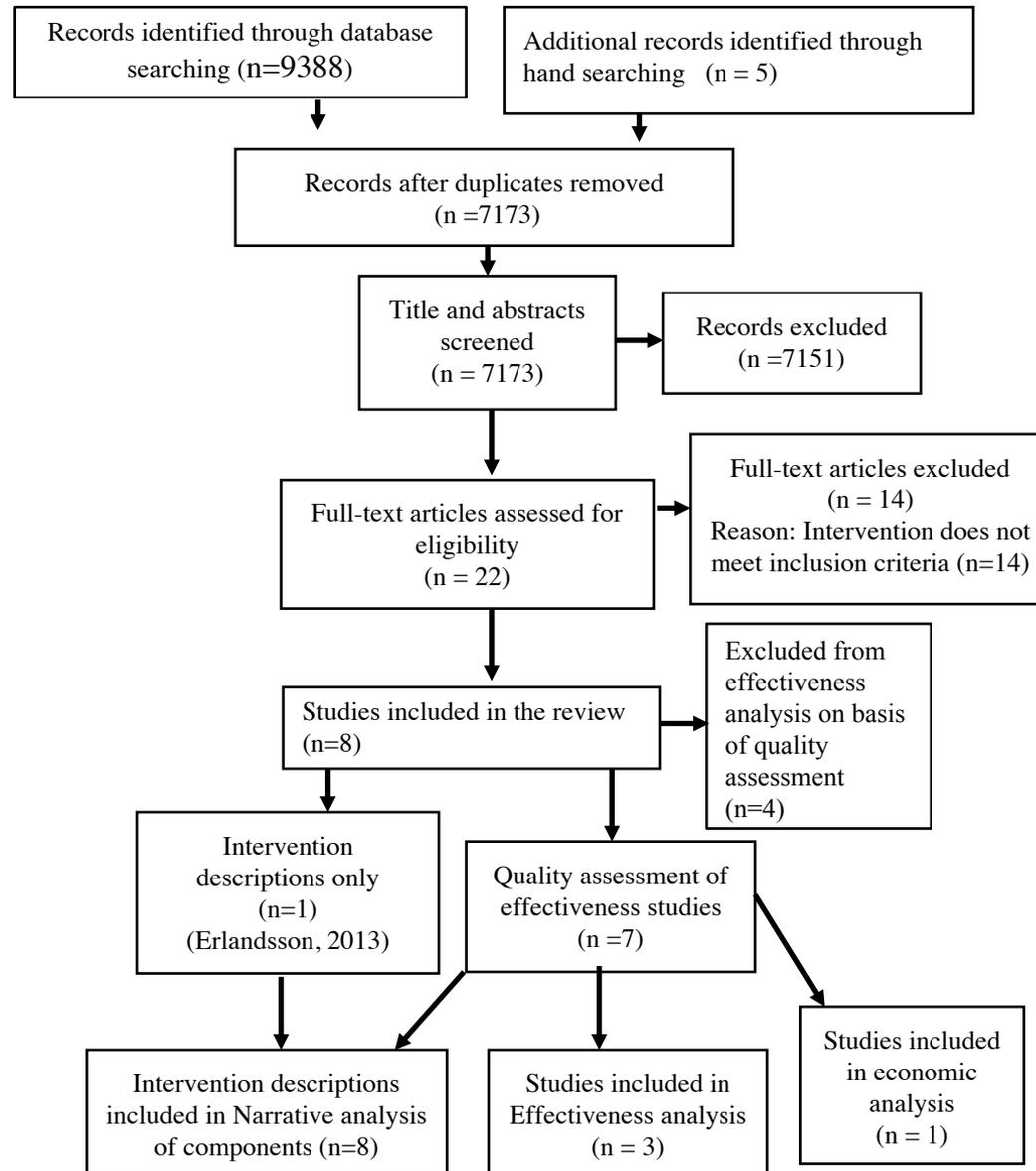
Assessment of risk of bias
narrative analysis

Intervention components for each intervention were extracted ,and compared to the components of the do-live-well framework.

Stage Two

For interventions with evidence of effectiveness the categories and themes identified per intervention will be compared

Study flow diagram for the study selection process (following PRISMA)



Summary of Intervention Features

Intervention, First Author and publication year	Theoretical Framework	Who carried out intervention	Format			Components								
			Group	Individual	Group & individual	Didactic educational presentation	Peer exchange/discussion	Handouts/workbook / homework	Self-analysis tools used	Participating in activities	Rehearsal of changes to everyday activities	Planning goal setting	Community outings	Home modifications
Target group: Adults over 60														
Lifestyle Redesign (Clark, 2012)	None Specified	Occupational Therapists			✓	✓	✓	X	X	✓	✓	✓	✓	✓
Occupational therapy lifestyle redesign (Horowitz, 2004)	Bandura's self-efficacy theory	Occupational Therapist			✓	✓	✓	Handouts	X	✓	X	X	X	✓
Active Lifestyle All your Life (Johansson, 2015)	The view of occupation as a prerequisite for health	Occupational Therapists, Physiotherapists, Dietician, Nurse and Social Worker			✓	✓	✓	Handouts & homework	X	✓	✓	X	✓	X
Designing a life of wellness program (Matsuka, 2003)	None Specified	Occupational Therapists and Occupational Therapy students	✓			✓	✓	Handouts & homework	✓	✓	✓	X	✓	X
Target group: Adults with serious mental illness														
Action Over Inertia (Edgelow, 2011)	CMOP-E Recovery principles –exhorting to action“	Occupational Therapist		✓			X	X	Workbook	✓	X	X	✓	X X
Target group: women with stress-related disorders														
Re-Do (Erlandsson, 2013)	ValMO-Model An empowerment approach	Occupational Therapists	✓			✓	✓	Homework	✓	✓	X	✓	X	X
Target Group: Adults living with HIV/AIDS														
Enabling Self-Determination (Kielhofner, 2008)	Model of Human occupation Social Disability Model	Occupational Therapists Peer Mentors			✓	✓	✓	X	✓	X	X	✓	X	X
Target group: Parents of children aged 4-6 years old who are morbidly obese.														
Lighter living program (Orban, 2014)	Complexity and organisation of daily occupations ValMo model	Occupational Therapists	✓			✓	✓	X	✓	X	X	✓	X	X

Effectiveness Synthesis

None of the studies showed overall statistically significant differences in outcomes between intervention and control group

Stage two of ICA not carried out as no evidence of effectiveness of studies included.

Intervention components compared to the components of the do-live-well framework.

Do-Live-Well constructs

Dimensions of experience

Activating your body, mind and senses
(vision, hearing, smell, taste and touch)
(e.g. physical exercise and listening to music)
Connecting with others
Contributing to community and society
Taking care of yourself
Building security/prosperity
Developing and expressing identity
Developing capabilities and potential
Experiencing pleasure and joy

Activity Pattern

Engagement (in activity)
Meaning
Balance
Control/choice
Routine

Summary of utility of ICA

- Reduces bias of narrative synthesis
- Implementation of interventions
- Comparison of effective interventions
- Theoretical underpinning of intervention
- Identifying effective components to develop intervention

References

Moll, S. E., Gewurtz, R.E., Krupa, T. M., Law, M., Larivière, N and Levasseur, M. (2015) “Do-Live-Well”: A Canadian framework for promoting, occupation, health, and well-being. *Canadian Journal of Occupational Therapy*. **82**, 9-23.

Sutcliffe, K., Thomas, J., Stokes, G., Hinds, k. and Bangpan, M. (2015) Intervention Component Analysis (ICA): a pragmatic approach for identifying the critical features of complex interventions. *Systematic Reviews*, **4**, 140

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