

A trial of a language and literacy intervention in Danish day care centers: The SPELL study

Submission date 06/02/2014	Recruitment status No longer recruiting	☐ Prospectively registered
		☐ Protocol
Registration date 17/02/2014	Overall study status Completed	☐ Statistical analysis plan
		☐ Results
Last Edited 17/02/2014	Condition category Mental and Behavioural Disorders	☐ Individual participant data
		☐ Record updated in last year

Plain English summary of protocol

Background and study aims

Childrens early language and literacy skills are key predictors of later educational outcomes. Children from low socio economic status (SES) backgrounds and immigrant backgrounds have elevated risk for adverse educational outcomes (delays in language and literacy). Research suggests that language and literacy interventions may have positive impact on childrens outcomes. However, the majority of this research has been done in the USA on a relatively small number of children from low-income homes. SPELL is a large study that will test systematic and explicit education in Denmark, under real-life circumstances, including all children in the participating day care centers.

Who can participate?

All children of age 3 and above (in practice up to age 6) in the participating day care centers. Centers to be invited will on purpose be selected to over-represent day care centres with a high concentration of children at risk.

What does the study involve?

SPELL is a 20-week intervention which uses storybook reading and provides an explicit scope and sequence of language and literacy education over 40 lessons (2 lessons a week).

Day care centers will be randomly allocated to one of three groups:

- SPELL Basic + Extra professional development group: educators implement the SPELL program and receive special training
- SPELL Basic + Learning activities in the home group: educators implement the SPELL program and parents also implement SPELL activities at home
- Business as usual also called control group: educators do not implement the SPELL program

What are the possible benefits and risks of participating?

All children, in particular those at risk for delays in language, can gain from participating in the study.

There are no risks involved.

Where is the study run from?

Day care centers are located in municipalities in the three main islands of Denmark (Zealand,

Jutland, and Funen). We intend to include 128 day care centers, each with on average three classes and 20 children/two day care educators in each class.

When is the study starting and how long is it expected to run for?
January 2013 to June 2014

Who is funding the study?
The Danish Council for Strategic Research (Denmark).

Who is the main contact?
Professor Dorthe Bleses
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Contact information

Type(s)
Scientific

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Study information

Scientific Title
A randomized controlled trial of a large scale systematic and explicit language and literacy intervention in Danish day care centers: The SPELL study

Study objectives
Our primary aim is to use a causally interpretable design (randomized controlled trial) to evaluate the impact of the SPELL intervention on childrens language and literacy development, particularly in children at-risk due to low socioeconomic or bilingual immigrant backgrounds, and on day care educators process quality. We hypothesize to achieve moderate to large effects on children's language and literacy outcomes. We hypothesize that those children whose day care educators receive extra professional development which emphasizes the use of strategies to differentiate education across the full range of child abilities, will make the greatest language and literacy gains. We hypothesize that children whose caregivers implement a SPELL home companion activities, featuring two weekly adult-child storybook reading lessons with targeted language and literacy activities twice weekly will make significantly increased language and literacy gains.

Ethics approval required

Old ethics approval format

Ethics approval(s)

The study is registered with the Danish Data Protection Agency. In Denmark, Ethics Committees only review biomedical research so there is no place where trials like SPELL can be reviewed.

Primary study design

Interventional

Study design

Cluster-randomised randomized trial of a language and literacy intervention.

Study type(s)

Quality of life

Health condition(s) or problem(s) studied

Language delay or language impairment in children aged 3-5

Interventions

SPELL is a 20-week intervention which provides an explicit scope and sequence of language and literacy education over 40 lessons implemented at an intensity of two per week. Each lesson is implemented in a small group format and lasts approximately 30 minutes. The same set of 10 high quality story books will be used repeatedly, i.e. each book will be read four times as the vehicle for instruction. Each lesson involves two components: 1) SPELL lesson plan, which soft-scripts a sequence of step-by-step education featuring a before-, during-, and after-reading activity as well as suggested language that day care educators can use to support childrens learning during each activity, and 2) Learners Ladder, which presents specific strategies to differentiate within the lesson on the basis of the individual childrens response to the lesson. In SPELL Basic + Extra professional development, day care educators will implement all SPELL Basic components and will receive an additional intensive two-day training to increase their substantive knowledge regarding the development and educational needs of children at risk for language and literacy. The educators will receive a language profile based on the pre-test data of each child in their groups, specific training in recognizing and practicing differentiation strategies by watching others and own video recordings of SPELL lessons; and a weekly refresher session in which the two educators working in each classroom conduct small assignments to assist implementation of this knowledge in class.

In SPELL Basic + Learning activities in the home, day care educators will implement all SPELL components and in addition, parents are asked to implement SPELL activities twice a week at home to complement the SPELL intervention that children receive in class. Parents will receive accompanying materials (the same 10 books, 20 lesson plans for each book reading that address the same learning domains and learning targets as in SPELL Basic) and the home activities will be aligned to day care activities.

In Business as usual (Control), day care educators will not receive the SPELL intervention materials or SPELL training. They will continue to provide the type of education that is typical of Danish day care centers.

Intervention Type

Other

Phase

Not Applicable

Primary outcome(s)

1. In children, language and literacy measures (vocabulary, narratives, phonological awareness, letter identification). These outcomes are measured pre-post intervention.
2. In educators, an instructional support measure (classroom assessment scoring system). This outcome is measured pre-post intervention.
3. In parents, quality of home learning (only arm with home-aligned activities). This outcome is measured pre-post intervention

Key secondary outcome(s)

In children, socio-emotional development measure (strengths and difficulties questionnaire). This outcome is measured pre and post intervention.

Completion date

01/07/2014

Eligibility

Key inclusion criteria

We will recruit children in 128 daycare centers.

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Child

Sex

All

Key exclusion criteria

The only exclusion criterion pertains to children with developmental delays that may be integrated in day care centers

Date of first enrolment

01/01/2013

Date of final enrolment

01/07/2014

Locations

Countries of recruitment

Denmark

Study participating centre
Campusvej 55
Odense
Denmark
5230

Sponsor information

Organisation
The Danish Council for Strategic Research (Denmark)

ROR
<https://ror.org/03ge1nb22>

Funder(s)

Funder type
Government

Funder Name
The Danish Council for Strategic Research (Denmark) (no. 11-115756)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Study website	Study website	11/11/2025	11/11/2025	No	Yes