ISRCTN14058106 https://doi.org/10.1186/ISRCTN14058106

Physical Literacy in the Early Years (PLEY) project : A loose parts intervention to promote active outdoor play in preschool aged children

Submission date
05/09/2017

Recruitment status
No longer recruiting

Registration date
20/10/2017

Overall study status
Completed

Last Edited
05/11/2024

Condition category
Other

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
The mental and physical health and wellbeing of children in Nova Scotia (NS) is in jeopardy, as a result of rates of chronic diseases that are among the highest in Canada. A modifiable risk factor in chronic disease prevention is physical activity (PA). Currently, only 7% of children achieve the recommended amount of PA. Historical declines in outdoor play, and in quality outdoor play experiences, have contributed to these trends. Changes in outdoor play spaces in early learning centres have restricted children's opportunities to engage in unstructured, self-directed and "risky" play, movements necessary for children to develop physical literacy. Physical literacy is the confidence, physical competence, knowledge, and understanding to be physically active for life. For children's curiosity to be sparked and heightened, they require environments that offer freedom, wonderment, and access to open-ended and natural materials like logs, sticks, rocks or leaves ("loose parts"). These loose parts can be moved, manipulated, stacked, carried or combined in various ways to encourage creative thinking, help children develop sensory awareness, and provide an opportunity for children to discover and master their environments. Loose parts can help children learn complex problem solving skills, provoke questions about scientific processes and concepts and encourage fine and gross motor skill development, balance and coordination, by manipulating, pushing, pulling, lifting and rolling objects. While there is evidence to support the effectiveness of embedding loose parts into school outdoor settings, there is limited published literature on whether this type of intervention could be applied to settings with younger children, such as early learning centres. The aim of this study is to determine if children who participate in active outdoor play, facilitated by educators trained in embedding loose parts into outdoor play spaces, develop greater physical literacy.

Who can participate?
Children aged three to five years old that attend one of the participating early childcare centres.

What does the study involve?
Participating schools are randomly allocated to one of two groups. Those in the first group receive the loose part kits (including items such as balls, wood planks, buckets and tubing) for use in their outdoor play equipment. Educators are instructed to encourage the use of these

loose parts to their children but let them use it as they choose. After six months, the loose parts remain a part of the centres. Those in the second group receive similar loose part it's after the six months. Participants are followed up to measure their physical activity and movement skills before study, and at three and six months.

What are the possible benefits and risks of participating?
There are no direct benefits to participating in this study. Indirect benefits for participating include an improved understanding of loose parts materials and their use in outdoor settings. For the children, this will provide an opportunity to use loose parts that may not have been part of the outdoor play setting prior to this intervention. Early childhood educators from across NS will have an opportunity to develop their knowledge and skills around promoting outdoor play, and will be able to support other educators in the province to achieve this goal. It may also contribute to the long-term health and development of young children, improve relationships within a community, and improve the supports available to families while parenting children between the ages of 3-4 years. There are no anticipated risks or safety concerns for participants. All of the movement assessment activities for the study are similar to what children would perform in their regular outdoor play at the centre. There are no invasive procedures. However, as with any type of physical activity, there is a small risk of a child falling or getting hurt. All of the research equipment is similar to what the children would use in their own centres' play activities. In the event of an injury, standard organizational policies will be followed. Educators participating in focus groups and completing the questionnaire may feel uncomfortable sharing specific information and images (through photovoice) about planning and implementing the programs and services in the EYC site to which they are associated. In order to minimize the risk associated with the evaluation interviews, informed consent will be required from the educators. Interviews will be conducted in an environment comfortable to the participant. We will ensure focus group participants are aware that they are not obligated to respond to any questions they are not comfortable answering and may withdraw from the study at any time up to the point that data are analyzed. All identifying information will be removed and replaced with a code number. Any quotes from interviews used in reports, publications, or presentations will not contain identifiers. Parents participating in the interviews and completing the questionnaire may feel uncomfortable sharing information about their personal physical activity and outdoor play views as well as their child's participation in physical activity. In order to minimize the risk associated with the evaluation, informed consent will be required from the parents. Interview participants are aware that they are not obligated to respond to any questions they are not comfortable answering and may withdraw from the study at any time up to the point that data are analysed. All identifying information will be removed and replaced with a code number. Any quotes from interviews used in reports, publications, or presentations will not contain identifiers.

Where is the study run from?
This study is being run by Dalhousie University (Canada) and takes place in child care centres in Nova Scotia (Canada).

When is the study starting and how long is it expected to run for?
April 2016 to December 2018

Who is funding the study?
Lawson Foundation (Canada)

Who is the main contact?
Dr Michelle Stone
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Contact information

Type(s)
Scientific

Contact name
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Additional identifiers

Protocol serial number
GRT 2015-67

Study information

Scientific Title
Physical Literacy in the Early Years (PLEY) Project

Acronym
PLEY project

Study objectives
The objectives of this research are to evaluate the efficacy of the loose parts intervention versus standard early years settings' practice to:
1. Improve children's physical literacy
2. Increase time in active outdoor play
3. Improve educators' attitudes, beliefs, perceived competency, and intentions towards incorporating the intervention into practice, and
4. Increase educators' and parents' understanding of play in child health and development.
Overall, this will determine if children who participate in active outdoor play, facilitated by educators trained in embedding loose parts into outdoor play spaces, develop greater physical literacy.

Ethics approval required
Old ethics approval format

Ethics approval(s)

Dalhousie University Research Ethics Board- Social Sciences and Humanities, 24/01/2017, ref: REB number 2016-3924

Primary study design
Interventional

Study design
Quasi-experimental randomized, mixed-methods controlled trial, where quantitative and qualitative data will be collected pre- and post-intervention.

Study type(s)
Other

Health condition(s) or problem(s) studied
Physical inactivity in young children

Interventions
The quasi-experimental loose parts outdoor play intervention includes 16 preschools randomly assigned to the control or intervention group for the purpose of the study.

Preschools in the intervention are provided with loose parts kits (including items such as balls, wood planks, buckets, tubing,etc.) for use in their outdoor play environment. The goal of this intervention is to determine how loose parts play influences physical activity and movement skill development among three-five year old children. Upon receiving the materials, intervention site educators are instructed to encourage the use of these loose parts to their children, but otherwise let the children creatively use the materials as they choose. These materials are intended to be used in the designated outdoor play area at each centre. Educators are instructed to contact the research group if any changes to the loose parts materials (damages, additions, etc.) take place over the course of the intervention. The intervention is six months long, with measures taken at baseline, three-months, and six-months post intervention.

Upon completion of the six-month intervention, loose parts remain a part of the centre, and control centres also receive similar loose parts kits for their children to use.

Intervention Type
Behavioural

Primary outcome(s)
1. Children’s physical activity is measured with accelerometers at baseline, 3-months, and 6-months post intervention
2. Children’s movement skill ability is measured with the TGMD-3 and PGMQ-balance at baseline, 3-months, and 6-months post intervention

Key secondary outcome(s)
1. Educators observations of outdoor active play is measured using photovoice and focus group interventions at 3-months and 6-months post-intervention
2. Parental views on outdoor active play, risky play, and their child’s physical literacy is measured using a questionnaire and interviews at 6-months post-intervention

Completion date
01/12/2018

Eligibility

Key inclusion criteria
1. Children between the ages of 3 and 5 years at the start of the intervention
2. Receive parental consent to participate and are attending one of the participating early childcare centres

Participant type(s)
Other

Healthy volunteers allowed
No

Age group
Child

Lower age limit
3 Years

Upper age limit
5 Years

Sex
All

Total final enrolment
209

Key exclusion criteria
Children who are physically or mentally unable to perform the movement skill assessment.

Date of first enrolment
30/01/2017

Date of final enrolment
01/06/2017

Locations

Countries of recruitment
Canada

Study participating centre
Mawio'mi Child Care Centre
80 Mawiomi Place

Dartmouth, NS
Canada
B2Y 0A5

Study participating centre
Leeds Street Child Care Centre
5685 Leeds Street
PO Box 2210
Halifax, NS
Canada
B3K 2T3

Study participating centre
Mount Pleasant Nursery School
39 Harris Avenue
Truro, NS
Canada
B2N 3N3

Study participating centre
South End Community Day Care Centre
5594 Morris Street
Halifax, NS
Canada
B3J 1C8

Study participating centre
Akerley Child Care Centre
21 Woodlawn Road
Dartmouth, NS
Canada
B2W 2R7

Study participating centre
Beaver Bank Children's Learning Centre Ltd.
95 Kinsac Road
Beaver Bank, NS
Canada
B4G 1C5

Study participating centre
Willowbrae Academy Hammonds Plains
21 Glen Arbour Way
Hammonds Plain, NS
Canada
B4B 0L8

Study participating centre
Small World Children's Centre (in Bridgewater, NS)
352 York Street
Bridgewater, NS
Canada
B4V 0B4

Study participating centre
Willow Creek Children's Centre
1702 Sackville Drive
Middle Sackville, NS
Canada
B4E 3A8

Study participating centre
Creative Kids Education Centre
109 White Hills Run
Hammonds Plains, NS
Canada
B4B 1W6

Study participating centre
Spring Garden Child Care Centre
2380 Spring Garden Road
Westville, NS
Canada
B0K 2A0

Study participating centre
Point Pleasant Child Care Centre (SMU)
5845 Gorsebrook Avenue

Halifax, NS
Canada
B3H 1G3

Study participating centre
Point Pleasant Child Care Centre
5651 Ogilvie Street
Halifax, NS
Canada
B3H 1B8

Study participating centre
Wee Care Developmental Centre
5217 Young Street
Halifax, NS
Canada
B3K 6A6

Study participating centre
Dartmouth Child Development Centre
61 Boland Road
Dartmouth, NS
Canada
B3A 1M9

Study participating centre
University Children's Centre
6101 South
Halifax, NS
Canada
B3H 1T2

Sponsor information

Organisation
Healthy Populations Institute

ROR
https://ror.org/01e6qks80

Funder(s)

Funder type
Charity

Funder Name
Lawson Foundation (Canada)

Results and Publications

Individual participant data (IPD) sharing plan
The data sharing plans for the current study are unknown and will be made available at a later date.

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		13/06/2023	13/06/2023	Yes	No
Results article		04/04/2019	05/11/2024	Yes	No
Results article		27/12/2021	05/11/2024	Yes	No
Results article	Early childhood educator perceptions	08/03/2021	05/11/2024	Yes	No
Results article	Educator perceptions	29/10/2019	05/11/2024	Yes	No