

Influence of structural and psychosocial factors on the level of physical activity of preschoolers attending daycare.

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Literature Review

- Children in daycare services are reported to be less active.
- Effective interventions?



Problems

- Effect of psychosocial variables
- Role of the daycare worker in children's play
- Combination of psychosocial, structural and personal determinants

Research questions

- What is the level of physical activity of children in daycare?
- What factors affect the physical activity of children in daycare?
- What factors motivate daycare workers to get the children moving?
- On what factors should be based the intervention programs designed to increase the physical activity of children attending daycare?

Theoretical Framework

- Theory of Planned Behaviour (Ajzen 1991)
- Structural model of Cohen et al. (2000)

Methods

- **Population**
 - Children aged three to five and daycare workers
 - Daycare facilities
 - National Capital and Chaudières-Appalaches (Quebec, Canada).
- **Sample**
 - Randomly selected daycare facilities
 - Daycare workers and parents who agreed to participate (sample of volunteers)
 - 46 daycare workers from 20 daycare centres and 242 children
 - 176 daycare workers

Methods

• Specifications/Conducting the study

- Daycare workers respond to the questionnaire on psychosocial variables and socio-demographic variables.
- 30 days later:
 - Measurement of children's physical activity
 - Measurement of structural factors and democratic-style intervention

Measurement

- Available material (56 indicators, $\alpha=.64$)
- Physical setting (16 indicators, $\alpha=.68$)
- Democratic-style intervention (16 indicators $\alpha=.60$)
- Educative Quality Observation Scale
(Bourgon & Lavallée, 2004)

Measurement

- Psychosocial variables (α between .84 and .96)
- Self-reporting questionnaire
 - Get the children moving for at least two hours per day over the next 30 days
 - NASPE recommendations

Measurement

- Physical activity of children
- Actigraph GT1M accelerometer
- Worn for four days, from the time they arrived at the daycare to the time they left
 - movements captured every 15 seconds
- **Processing accelerometer data**
 - Descriptive statistics: criteria proposed by Sirard et al. (2005)
 - Other analyses: Rate of physical activity (Oliver et al., 2011)
 - Preliminary analyses: accelerometer worn for two days, four hours per day

Statistical analysis

- Multi-level analysis
- Simple multiple regression
- Logistic regression

Descriptive Statistics

- Daycare centre attendance: on average 8 hours per day
- Physical activities
 - 53 minutes per day (SD=23.55)
 - 13 minutes moderate- or high-intensity (SD=9.19)
- 2/242 meet NASPE recommendations
- 33% of daycare workers \Rightarrow *not* highly motivated to get the children moving

Results

Determinants of physical activity in children

Variables	β	p
Age of daycare worker	-0.23	0.01
Democratic-style intervention	0.19	0.02
Quality material	0.18	0.03
Age of child	0.18	0.00
Commitment	0.16	0.04
Descriptive norm	-0.16	0.05
Gender of child	0.16	0.01

19% of the variation in physical activity $F(7, 194) = 6.60, p < 0.0001$

Results

• Determinants of commitment to get children moving

Variables	β	p
Ethical norm	0.46	<0.0001
Perceived control	0.38	<0.0001
Subjective norm	0.17	0.0004

85% of the variation in commitment $F(3, 170) = 338.51, p < 0.0001$

Results

- Poorly motivated daycare worker:
 - *Enhance the ethical norm*
 - *Increase the perception of control* ⇒ remove perceived barriers:
 - **Busy schedule**
 - **Lack of time**
 - **Inclement weather, etc.**
 - *Enhance the subjective norm* ⇒ perceive that
 - **management of the child care facility**
 - **the children's parents and**
 - **the other daycare workers**support their efforts to get the children moving for
two hours per day

Results

- Motivated daycare worker:
 - **Take action!** ⇒ example: Implementation Intentions (Gollwitzer, 1993, 1999)
 - Facilitates **cooperation between the children** while laying down rules regarding **safety and discipline**
- Material** (adapted as needed, fosters various dimensions).

Conclusions

- It is important to intervene in order to increase physical activity in children in daycare.
- Set clear expectations for the daycare worker concerning physical activity of children aged three to five.
- Importance of providing daycare workers with tools to remove perceived obstacles and to properly support them in promoting physical activity in young children.
- Post-secondary training programs? Educational programs? Importance and priority in daycare centres?