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*Influence of Structural and Psychosocial Factors on the Level of Physical Activity of Preschoolers Attending Daycare (2011)*

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**Project Summary**

**Objectives**

- Check the level of physical activity of children aged three to five attending daycare.
- Identify the factors that affect the physical activity of children who attend daycare.
- Identify the factors that motivate educators to get children moving for at least two hours per day (as recommended by the *National Association for Sports and Physical Education*).
- Identify the factors on which should be based the interventions aimed at increasing the physical activity of children attending daycare.

**Theoretical framework:** Theory of planned behaviour (Ajzen 1991) and the Cohen et al. structural model (2000).

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**Research Methods**

**Population:** Children aged three to five attending a child care facility, run by the government of Quebec, in the National Capital and Chaudière-Appalaches regions (Quebec, Canada), and their daycare workers.

**Sample:** Randomly selected child care centres from a list of day-care centres available on the Quebec Ministère de la Famille et des Aînés Web site. The final sample to identify the determinants of behaviour comprised 46 volunteer educators from 20 child care centres and 242 children whose parents agreed to their participation in the study. The sample to identify the determinants of commitment consisted of 174 daycare workers.

**Measurement instruments:** The psychosocial variables were measured through a self-reporting questionnaire, developed according to the guidelines of the theory of planned behaviour (Ajzen 1991). The structural variables and democratic-style interventions of the educator were measured with certain indicators on the Educative Quality Observation Scale (Bourgon & Lavallée, 2004). The children's physical activity was measured with an ActiGraph GT1M accelerometer, which was worn for four days, from the time they arrived at the daycare centre to the time they left. The accelerometer captured movements every 15 seconds.

**Data analysis:** Multilevel analyses, simple multiple regression and logistic regression were conducted to help answer the research questions.

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## Research Results

Children aged three to five participating in this study attended a day care service for an average of eight hours per day. While they were at the daycare centre, they engaged in low-, moderate- or high-intensity physical activity for an average of 53 minutes (SD=23.55) per day. On average, 13 (SD=9.19) of these 53 minutes involved moderate- to high-intensity physical activity. The following factors account for 19% of the variation in physical activity of children at the daycare centre: the daycare worker's commitment to getting the children moving, their perception that the other daycare workers do or do not get the children moving for two hours per day, the worker's democratic-style intervention, the daycare worker's age, the quality of the material, and the age and sex of the child. The results also indicate that 33% of the daycare workers are not *highly* motivated to get the children moving for at least two hours per day. The following factors account for 85% of the variation in the daycare workers' commitment (motivation) to involving children in physical activity for at least two hours per day: their perception of control in terms of being able to get the children moving, the ethical standard and the worker's perception that individuals who are important to her think that she should get the children moving.

These results suggest that it would be useful to intervene in daycare centres to raise the level of physical activity of children aged three to five. Intervention should specifically increase the motivation of daycare workers who show a lower level of commitment to getting the children moving. This could be done, especially, by removing the perceived barriers (busy schedule, lack of time, inclement weather, etc.). Furthermore, they would need to perceive that the management of the daycare service, the children's parents and their fellow workers support their efforts to get the children moving for at least two hours per day. Child care centre managers and parents must therefore clearly formulate their expectations in this regard. It also seems that involving the children in physical activity is not a significant value for many poorly motivated workers; this aspect should therefore be developed further. For workers who are already motivated to get the children moving, it would be important to intervene to ensure they act on their commitment. The implementation intentions strategy (Gollwitzer, 1993, 1999) could also prove useful in this context. Daycare workers could also facilitate cooperation between children while laying down rules regarding safety and discipline. Lastly, it appears that children are more physically active when the material is of good quality (for example when they are adapted to their needs or foster various dimensions of development). This aspect could therefore be emphasized in daycare services concerned with getting the children moving.

The findings and suggestions presented here are applicable to the sample of daycare workers and daycare centres studied as part of this research. It is possible that the variables that explain the physical activity of children are not the same as those for another sample of

daycare workers or child care centres. If this were the case, the intervention methods could therefore be different from those suggested here.

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### **Policy Implications**

According to the Long-Term Athlete Development Model proposed by Sport Canada, it is important that physical literacy be developed early in life. To this end, it is important to provide young children with the opportunities to explore and try out a variety of movements. Yet, the results of this study are in line with other findings in the literature and indicate that children aged three to five attending daycare centres are not sufficiently active. The findings of this study are useful particularly for developing or updating the child care centres' educational programs and post-secondary training programs for daycare workers. The results are also relevant to the management of child care centres and groups involved in child care, such as the Association du personnel-cadre des CPE. Organizations such as Québec en forme and Kino-Québec also have an interest because of their concerns about the active lifestyle and health of children.

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### **Next Steps**

This study has shown that it is important that daycare workers be better informed of the benefits and risks of physical activity. The findings also indicate that daycare workers do not have a clear idea of what is expected of them regarding the physical activity of the children they are responsible for. They would therefore have to obtain the proper training, equipment and support they need to promote the physical activity of children aged three to five.

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### **Key Stakeholders and Benefits**

The Quebec Ministère de l'Éducation, du Loisir et du Sport, Québec en forme, Kino-Québec, the Canadian Society for Exercise Physiology, the Canadian Fitness and Lifestyle Research Institute, Sports Québec, Active Healthy Kids Canada, the Quebec Association des CPE, the Quebec Association du personnel-cadre des CPE, the Canadian Child Care Federation, the Quebec Fédération des kinésiologues, the Canadian Kinesiology Alliance, the Quebec Institut de la statistique and others.