Designing the Physical Activity Program for Children with Disabilities

Eun Hye Kwon[*]

Texas A&M University - San Antonio, USA, Assistant Professor

The level of the physical activity (PA) of children with disabilities are lower than children without disabilities. Based on the studies, there are several barriers to participate in the physical activity for people with disabilities in the aspects of personal, social, environmental, and program (Frey, Stanish, & Temple, 2008; Sheilds, Synnot, & Barr, 2012). To promote the PA level for people with disabilities, the holistic approach needs to be implemented to design PA program for children with disabilities. The purpose of this article is providing an example of a theory-driven PA program for the successful participation of children with disabilities into the PA program.

Key words: Physical activity for children with disabilities, Theory-driven Physical Activity Program,
           PA participation for children with disabilities

---

* Corresponding author.
  Email address: Eunhye.kwon@tamusa.edu

Introduction

The physical activity (PA) is considered as one of the adjustable risk factors for different types of chronic diseases, including diabetes, obesity, and cardiovascular diseases (Warburton, Nicol, & Bredin, 2006). Participating in PA is particularly important for children with disability as it can have a positive and future health and life outcomes (Anderson, Bedini, & Moreland, 2005; King, and et al., 2003). However, a study investigated the trend of PA participation for children with disabilities indicated that children with disability were less active than their peer without disabilities (Frey, Stanish, & Temple, 2008). Based on the studies, there are several aspects of barriers for participation in PA for people with disabilities. The barriers could be categorized in personal, social, environmental, and program (Frey, Stanish, & Temple, 2008; Sheilds, Synnot, & Barr, 2012). Especially in social barriers, it indicated that parents' involvement and parents' education are critical to promote participation into PA for children with disabilities. To facilitate these barriers, it is important to provide the holistic approach to develop a PA program for people with disabilities that could support PA participation for children with disabilities.

The purpose of this article is giving an example how to develop a PA program for children with disabilities based on the theories. Bandura's *social cognitive theory* (1986) would be applied majorly for developing a PA program. The theory proposes that behavior change is affected by interactions among the environment, personal factors, and attributes of the behavior itself, a concept which has been called *reciprocal determinism* (Bandura,1986).

Developing a PA Program

Some research suggests that individuals with disabilities be more likely to attribute their success in a given activity to luck of an activity. Moreover, this research suggests individuals with disability often perceive failure as due to lack of ability (Cooley & Ayres, 1988). The main attribute of the program would be success-oriented. The PA instructor will develop the program to give a successful experience to both parents and children so that each psychological skill would start with an information session to learn skill. First, several months would continue with a lot of trials and errors. The PA instructor would start to introduce a basic and low level psychology technique to motivate both parents and child.

Enhancing Psychological Skills in Parents

Based on motivational theories and research, parents significantly influence children's formation of favorable or unfavorable *self-perceptions* (Marcus et al., 1990) and subsequent motivated behaviors.

One model is a schematic representing the relationships among competence in meeting skill challenges, *self-confidence* (perceived competence and control), and motivation as suggested by theory and research (Bressan & Weiss, 1982). Consequently, an increased competence level would have a positive effect on *self-confidence*.

Education phase Because parents are unfamiliar with how mental skills and psychological strategies can enhance performance, the first phase of the program is educational. In this educational phase, parents can recognize how important it is to acquire the program and how the skill affects the performance of their son. The essence of what parents should understand is the importance of developing psychological skills. The consultant would also emphasize the role that psychological skills play in performance.

Social supports *Social supports* (Marcus & Forsyth, 2009) would be applied at the beginning of the PA program. The supports would be a strong *mediator* of behavior for this family. The PA instructor would strongly engage at this strategy providing *information support* for the parents arranging different types of group sessions and/or meetings for interactive communications with the physical education teachers, the parents of peers, and community centers.

Observation skills Careful observation of what is going on in the learning environment is the first step to initiating any behavior change (Weiss, 1995). Parents are required to realize that they need to purposefully and systematically search for verbal and nonverbal behaviors that convey information about their child's levels of competence, *self-confidence*, and persistence behaviors. The parents would be asked to fill out their own observation form regularly. After the parents fill out the form, the PA instructor would keep giving feedback how to connect the observation to *goal setting*.

Goal setting *Goal-setting* has been studied as a motivational approach to enhancing task performance in management and organizational environments (Locke & Latham, 1990). When people can set and attain the goal, they are able to gain control over their lives. As a result, they feel empowered (Rappaport, 1981) and have a greater sense of *self–efficacy* (Bandura, 1982). Goal setting is also a key self-regulation strategy so that the strategy would go with the parents' observations of their child.

Attaining the goal involves developing a specific plan, a *goal ladder*, to reach the goal. Developing a goal ladder involves breaking the goals down into achievable steps (Murphy, 1995). After the parents filled out the observation forms for the first time, they might be overwhelmed by setting hierarchy of the goals, so that setting goal ladder would help the parents how to break the goals, likelihood of achieving it increases tremendously.

Having parents set goals for their child is critical. The PA instructor can give advices how to set an achievable specific goal that would meet the level of skill performance of their child. One

of the important information includes; Goal statements that include words like *should* and *ought to* inspire lower levels of commitment than goal statements including works like *wants*. Therefore, to increase the energy level invested in attaining a goal it is important to help parents ascertain whether to change *should* and *ought to* goals to *want* goals, or to identify *want* goals (Danish, Petitpas, & Hale., 1995).

For the initial step, it is recommended to set a short term specific goal focusing on the process of his behavior and performance each. The most important thing in goal setting for this procedure is a communication between the parents and between the parents and the teacher. The mother or the father need to share what they have observed on their child's behavior and skill performed during PA. The parents will set the goal based on their communication, and then share the set goal with their child. After the parents monitor their child's PA session, they can set up a specific goal for their son to improve his behavior and skill for the next PA session.

To make the goal setting effectively, the parents would be asked to keep goal-setting sheet. The goal setting sheet has four parts. The first part is for detailed goal description and strategies. This part would be written before the activity. The second part is about progress notes. Parents would fill out this second part during the activity. The third part is about reflection of parents. Parents would write it after the activity about how they did give feedback to their kid and communicate with the teachers before, during, and after the activity. The purpose of this part is to show parents their progress in their behavior toward their child's activity. Based on three parts, parents would set up the goal for the next session with their child in forth part. Even their child is not able to make the verbal communication, parents still would be asked to set up the goal with their child.

Enhancing Psychological skills in children

Relaxation and energizing techniques When under stress, there is an increase in heart rate, breathing is faster, and muscles tense up. When there are several stressors, the level and duration of the stress are greater. *Muscle-to-mind techniques* (Williams, 2010) would apply to release child's stress. Extreme fear of children with disabilities is observed commonly when they confronted new environment or new ideas to learn. According to William (2010), once a person is trained the technique, he/she can practice and should be able to relax in any environment under any condition. The child will learn the strategies of the muscle-to-mind techniques to release the stress and fear. *Deep Breathing* could be a great start for child. First, the parents will need to be trained by the online resources and/or the PA instructor. It is more recommended that the PA instructor would give the breathing training. After parents master the deep breathing skill, they can train their child at home. The parents would teach the technique step by step every morning before the son goes to the school and every evening

before he goes to bed. After the son is familiar with the breathing technique, the parents would finally ask the son to apply the technique into an actual PA setting.

The parents would be asked to fill out a log for training the technique, and the consultant would ask the parents verbally about how they train the technique. Also parents would be reminded by the consultant to practice the technique right before the PA or on the way to come to the PA.

Modeling *Modeling* (Shunk, 1989) refers to the cognitive, affective, and behavioral changes that occur as a result of observing adults and peers whereas models are persons whose behaviors, verbalizations, and nonverbal expressions serve as cues for subsequent modeling (Schunk, 1989). Thus modeling can serve both an informational and a motivational function, and these functions have been strongly supported in the sport psychology and motor behavior literatures (McCullagh, Weiss, & Ross, 1989; Weiss, Ebbeck, & Wiese-Bjornstal, 1993). To maximize attention and motivation of the son, the parents can give a model as the same-age, same-gender, or the same-age-and-same-gender peers represent similarity between a model and an observer. The parents would find an activity with the same age group and the same disability with her son or arrange the activity date with his peers for *modeling*. If it is not easy to find the peer with similar age, video modeling could be an effective way to be implemented for the modeling.

Video modeling is one of the strategies for both instructional and behavior management aspects. By recording and watching the video, child's achievement and behavior can be observed by the parents, instructors and children (Charlop-Christy.Le, & Freeman, 2000). Specifically, self-modeling can be effective in the PA activities with a variety of populations (Dowrick, 1991). Child's participation at the PA program will be recorded and analyzed by parents and/or the PA instructors. Based on the video analysis, the parents and the PA instructor will discuss goals for their child's skill proficiency and behavior. After setting the goal, it will be share with the child for their target behavior and subsequently imitating showing expected behaviors and skill performance.

Individual Control Strategies According to Schunk (1989), self-regulated learning occurs from children's self-generated behaviors that are systematically designed to maximize attainment of their goals. *Self-regulation* comprised of three sub-processes: *self-observation, self-judgment, and self-reaction* (Bandura, 1986). Self-regulation could be associated with observation and goal-setting training. Two techniques, observation and goal-setting, are required techniques to apply self-regulation. Once the parents are familiar with observation and goal-setting techniques, the consultant would introduce how to apply the techniques to *self-regulation* strategy.

Self-observation serves both information function by showing progression toward goals and a motivational function by encouraging behavior change as the function of increased awareness through behavior recording (Murphy 1995). Parents can observe and monitor their sons' behaviors and

performance in the PA. After parents analyze data, they can verbally tell their son about the progression the child made and it would increase the awareness level of child's own performance.

Self-judgment is a process where learners compare the present performance level with desired goals. This progress can be influenced by the types of the goals (e.g., mastery versus performance outcome); specificity, task difficulty, and proximity of goals. Parents can verbally inform their child about a goal first and then tell the child about a progression toward the goal. It is critical to compare present the performance level with a desired level.

Self-reaction can include evaluations from the sources of information provided by self-reinforcement or external rewards and feedback. Parents can give positive and negative evaluations of child's progress toward goals. Since positive evaluation would be more than 90% of the evaluation to enhance *self-efficacy* (Bandura, 1977), the parents can focus more on giving positive feedback first and then after the accumulated achievement providing external reward, such as balls, equipment, and visiting activity sites or an amusement park.

All the steps of self-regulation would be managed and reviewed by the PA instructor. All the steps are closely related with the psychological skills for parents so that the PA instructor focuses on how to engage their son into this strategy.

Program Evaluation

To evaluate the intervention program, the PA instructor needs to evaluate the parents' reflections based on the goal setting sheet first. In addition, the parents can evaluate themselves by reading the sheets, self-reflection. Meetings will be arranged by the PA instructor to discuss the parents' attitude and behaviors toward the program.

Interactive relationship among the parents and the PA instructors is critical to make more effective program. The PA instructor has a responsibility to make the parents open to communicate, the PA instructor should keep an eye on not only the logs and sheets but also behaviors of parents toward the intervention program. Based on the communication and analyzing logs, the PA would provide positive feedback timely for the parents to give timely positive feedback to enhance their *self-efficacy* (Bandura, 1977) toward the program as well as the parenting.

Parents of a child with disability might have a higher chance to fail the project compared with that for parent of child without disability. The PA instructor can apply different psychological strategies if the plan is not appropriate for the parents, for example self-talk and mental rehearsal, so that the parents can try different strategies. After the intervention program, the consultant would regularly send messages such as follow-up e-mails or texts not only to promote for children's PA but also to remind

parents of the psychological strategies they have learn.

Conclusion

There is irrefutable evidence of the effectiveness of regular PA in the primary prevention and the care of several chronic diseases (e.g., cardiovascular diseases, diabetes, and obesity) (Warburton, Nicol, & Bredin, 2012) and mental health improvement (Dunn, Trivedi, & O'Neal, 2001; Morgan & Beth, 1998). To promote regular PA participation for children with disabilities, it is critical to provide a PA program considering barriers to participate in the PA in personal, social, environmental, and program aspects. The holistic supports should be provided to increase the level of the PA participation for the children with disabilities. The strategies that proposed in this paper can be ideas and/or examples to develop a PA program that could provide the holistic supports to children with disabilities.

References

Anderson D.M., Bedini, L.A., & Moreland, L. (2011). Getting all girls into the game: Physically active recreation for girls with disabilities. Journal of Park and Recreation Administration, 23(4), 78-103.

Bandura, A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37(2), 122-147.

Bandura, A. (1986). Social foundations of thought and action: A social-cognitive view. Englewood Cliff, NJ: Prentice-Hall.

Bressan, E. S., & Weiss, M. R. (1982). A theory of instruction for developing competence, selfconfidence, and persistence in physical education. Journal of Teaching in Physical Education, 2, 38-47.

Charlop-Christy, M.H., Le, L. & Freeman, K.A.(2000). A comparison of video modeling with in Vivo modeling for teaching children with autisum. Journal of Autism and Developmental Disorder, 30(6), 537-552.

Cooley, E.J. & Ayres, R.R. (2988). Self-concept and success-failure attributions of nonhandicapped students and students with learning disabilities. Journal of Learning Disabilities, 21(3), 174-178.

Danish, S. J., Petitpas, A. J., & Hale, B. D. (1995). Psychological Interventions: A Life Development Model. In S. M. Murphy (Ed.), Sport Psychology Interventions (pp. 19-38). Champaign, IL: Human Kinetics.

Darren E.W., Nicol C.W., & Bredin S.S. (2012) Health benefits of physical activity: the evidence,

Medical Knowledge that matters, 174, 801-809.

De, S., Small, J., & Baur, L. A. (2008) Overweight and obesity among child with disabilities, Journal of Intellectual and Developmental Disability, 33, 43-47.

Dowrick, P.W. (1991). Practical guide to using video in the behavioral sciences. New York, NY: Wiley Interscience.

Dunn, A. L., Trivedi, M.H., & O'Neal, H.A. (2001). Physical activity does-response effects on outcomes of depression and anxiety. Medicine and Science in Sports and Exercise, 33, 587-597.

Frey, G.C., Stanish, H.I., & Temple, V.A. (2008). Physical activity of youth with intellectual disability: review and research agenda. Adapted Physical Activity Quarterly, 25(2). 95-117.

Marcus, B.H., Forsyth. L.H (2008) Motivating people to be physically active. Champaign, IL: Hyman Kineitcs.

Marcus, George. E., John.L., Sullivan, ElizabethTheiss-Morse, & Sandra L., Wood (1995). With malice toward some: how people make civil liberties judgements. Cambridge, U.K: Cambridge University Press.

McCullagh, P., Weiss, M. R., & Ross, D. (1989). Modeling considerations in motor skill acquisition and prformance: An integrated approach. Exercise and Sport Sciences Reviews, 17(1), 475-513.

Morgan, K., & Beth, P.A. (1998) Customary physical activity and psychological wellbeing: A longitudinal study. Age and Ageing, 27 (Supple. 3), 35-40.

Murphy, K. R., Osten, K., and Myors, B. (1995). Modeling the effects of banding in personnel selection. Personnel Psychology, 48, 61-83.

Rappaport, J. (1981) In praise of paradox: a social policy of empowerment over prevention. American Journal of Community Psychology, 9(1), 1-25.

Schunk, D. H. (1989). Self-efficacy and achievement behaviors. Educational Psychology Review, 1, 173-208.

Shilds., N., Synnot, A.J., & Barr. M. (2012). Perceived barriers and facilitators to physical activity for children with disability: a systematic review. British Journal of Sports Medicine, 46(14), 978-997.

Williams, J.M. (2010). Relaxation and energizing techniques for regulation of arousal. In J.M. Williams (Ed.) Applied sport psychology: Personal growth to peak performance (6th ed.) (pp. 247-266). New York, NY: McGraw Hill.

Weiss, M.R., Ebbeck. V., Wiese-Bjornstal. (1993). Developmental and Psychological factors related to children with learning of physical skills. Pediatric Exercise Sciences, 5(4), 301-317.

Wiess, M. R. (1993) Developmental and psychological factors related to children's observational learning of sport skills. *Pediatric Exercise Science,* 5, 301-317.

Warburton, D.E., Nicol, C.W., & Bredin, S.S. (2006). Health benefits of physical activity: the evidence. Canadian Medical Association Journal, 174(6), 801-809.