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Importance of Program Leaders' Lifestyle Habits and Perceptions of the FitSpirit Program School-based Approach's Impact

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Jo-Anne Gilbert, PhD, is a kinesiologist and assistant clinical professor at the School of Kinesiology and Physical Activity Sciences, Faculty of Medicine, Université de Montréal. Her research interests revolve around the relationship between health and weight, which includes factors such as body image, physical activity, nutrition, and other lifestyle habits and environmental factors.

Marie-Eve Mathieu, PhD, is a kinesiologist and full professor at the School of Kinesiology and Physical Activity Sciences, Faculty of Medicine, Université de Montréal. She is also a researcher at the CHU Sainte-Justine research center. Her research at the Laboratoire Activité Physique et Santé (LAPS), which she directs, aims to identify how physical activity and the adoption of a healthy, active lifestyle can help ensure optimal weight, metabolic and cardiac health, particularly for young people. She holds the Canada Research Chair in Physical Activity and Juvenile Obesity.

Abstract

The study aimed to describe the lifestyle habits of program leaders recruited from a diversity of school personnel, document their perception of changes in physical activity (PA) levels in teenage girls and their network, and assess how program leaders' lifestyle habits affect their perception of the impact of the FitSpirit program. Data were collected from 50 adult program leaders, including sociodemographic information, PA levels, recreational screen time, sleep, and eating habits. Additionally, leaders' perceptions of the FitSpirit approach were analyzed. Most program leaders adhered to the recommended physical activity levels, recreational screen time, and sleep patterns. However, their eating habits were less aligned with recommended guidelines. Leaders who met the physical activity recommendations positively influenced their colleagues and friends to stay active, though this effect did not extend to teenage girls. Adhering to the physical activity requirements may be important for program leaders to encourage friends and colleagues to remain active.

Keywords: health promotion, physical activity, lifestyle

Résumé

L'étude visait à décrire les habitudes de vie des leaders de programme recrutés parmi divers membres du personnel scolaire, à documenter leur perception des changements dans les niveaux d'activité physique (AP) chez les adolescentes et leur réseau, et à évaluer comment les habitudes de vie des leaders influencent leur perception de l'impact du programme FitSpirit. Les données ont été recueillies auprès de 50 leaders adultes, incluant des informations sociodémographiques, les niveaux d'AP, le temps d'écran récréatif, le sommeil et les habitudes alimentaires. De plus, les perceptions des leaders concernant l'approche FitSpirit ont été analysées. La plupart des leaders respectaient les recommandations relatives aux niveaux d'activité physique, au temps d'écran récréatif et aux habitudes de sommeil. Toutefois, leurs habitudes alimentaires étaient moins conformes aux lignes directrices recommandées. Les leaders respectant les recommandations d'activité physique avaient une influence positive sur leurs collègues et amis pour rester actifs, bien que cet effet ne se soit pas étendu aux adolescentes. Respecter les exigences en matière d'activité physique pourrait être crucial pour que les leaders de programme encouragent leurs amis et collègues à demeurer actifs.

Mots-clés: promotion de la santé, activité physique, habitudes de vie

Introduction

Physical activity (PA) can have significant and positive effects on the physical and psychological health of adolescents (Saunders et al., 2016). Consequently, reducing their inactive lifestyles promotes better health outcomes (Korczak et al., 2017). Evidence suggests that participation in PA programs can lead to sustained improvements in activity levels (Whooten et al., 2019), as well as sleep quality (Baldursdottir et al., 2017), eating habits (Story et al., 2003), and decrease recreational screen time (Qin et al., 2020).

Schools provide an ideal environment for promoting healthy lifestyles among adolescents (Ofosu et al., 2018), mainly because they have the potential to reach most adolescents and contribute to healthy lifestyle habits among them (Hoelscher et al., 2013; Macnab et al., 2014). According to some scholars, school-based PA interventions are the most promising way to improve adolescent girls' activity levels (Pearson et al., 2015). Consequently, an increasing number of school-based girl-only PA interventions have been published (Baldursdottir et al., 2017; Demetriou & Bachner, 2019; Leduc et al., 2021; Lubans et al., 2012; K. Morgan et al., 2019). Although many global school-based PA interventions have aimed to improve adolescents' activity levels, none have examined the relationship between the lifestyle habits of program facilitators and participant outcomes. This is important because we need to know if physical training of the ones who offer the program should be planned before the program takes place or if it is essential to recruit already active program facilitators.

FitSpirit is a non-profit organization that focuses on improving PA levels and active lifestyles among Canadian adolescent girls (Sardin, 2024). Since 2007, FitSpirit has offered group PA interventions for adolescent girls in Canadian schools. These non-competitive interventions in the schools are organized by program leaders. Participation in FitSpirit improves several health behaviours among adolescent girls, which include increasing the number of days with PA, sleep quality, consumption of fruits and vegetables, as well as decreasing daily consumption of sweets and screen time (Ahmadi et al., 2024; de Fátima Guimarães et al., 2022; Paiement et al., 2020). It was also observed that longer participation in FitSpirit is associated with better adherence to PA levels and sleep recommendations among adolescent girls (Guimarães et al., 2021).

In FitSpirit partner schools, physical education teachers but also any other school employees can serve as program leaders (Leduc et al., 2021). Several reports have found that program leaders play a significant role in the successful accomplishment of PA promotion plans by optimizing the health opportunities within their context, decreasing barriers to delivering quality PA programs, and developing children's attitudes toward leading healthy and fulfilling lifestyles (Lynch, 2017; Lynch & Soukup, 2017; Morgan & Hansen, 2007). program leaders also engage families, communities, and colleagues as co-health promoters to enhance PA engagement around schools (Glowacki et al., 2016). The literature shows a low level of knowledge about program leaders lifestyle habits and their perception of the impact of PA interventions on adolescents.

As the program leaders are essential components of a school system, they act as gatekeepers to school innovations and health promotions (Gugglberger, 2021). Also, there is a need to study and understand more about program leader's lifestyle habits and their perceptions of PA interventions. Therefore, the study aimed to 1) describe the lifestyle habits of program leaders recruited from a diversity of school personnel, 2) document their perception of changes in PA levels in teenage girls and their network, and 3) assess how program leaders' lifestyle habits affect their perception of the impact of the FitSpirit program.

Methods

Participants

The program leaders who deliver PA sessions to adolescent girls in FitSpirit program were included in this study. In FitSpirit program, each participating school is represented by one individual serving as a program leader. Consequently, all FitSpirit partner schools were invited to participate (n = 138). Invitations were sent to potential program leader respondents via email, providing details about our evaluation project. All participants provided written consent to participate in the study. The study protocol was reviewed and subsequently approved by the Université de Montréal's Ethics committee (#CERES-16-160-P).

Assessments and Measures

Data were collected in the spring of 2021 using an online questionnaire hosted by Survey Monkey. The 28-question, self-reported questionnaire, was available online in French. The questionnaire had three sections and included: (1) the profile of respondents, (2) the lifestyle habits of respondents, and (3) respondents' perceived impact of FitSpirit on adolescent girls and of program leaders on their social circle.

The questionnaire included questions about sex, number of years of experience in FitSpirit as program leaders, and screen time related to work. Questions for assessing PA levels, recreational screen time, sleep, and eating habits were included: "In a typical week, how much time in total do you spend doing moderate to vigorous-intensity physical activity that makes you sweat at least a little and breathes harder?"; "On average, how much time do you spend each day in front of a screen for leisure only?"; "On average, how many hours do you sleep in a 24-hour period?"; and " How often and how much do you eat fruits and vegetables per week?", respectively. The adherence to the recommendations for PA levels, recreational screen time, and sleep time was determined using the Canadian 24-Hour Movement Guidelines for adults aged 18–64 years (Ross et al., 2020). Participants adhered to the guidelines' recommendations if their self-reported behaviours indicated the following: more than 150 minutes of moderate to vigorous physical activity per week, less than three hours of recreational screen time per day, seven to nine hours of sleep per night, and seven to eight servings of vegetables and fruits per day. Also, adherence to the recommendations for eating habits was determined using the 2007 Canada Food Guide (Katamay et al., 2007).

The questions used to assess the perception of program leaders towards the FitSpirit were: "My role as a FitSpirit program leaders has encouraged me to be an ambassador for physical activity or an active lifestyle with... A) my colleagues at school, B) my family, C) my friends"; and "Has becoming a partner school to FitSpirit led to an improvement in the provision of physical activities for girls at your school". The program leaders answered each statement based on one of these three options: (1) No, I do not think I am an ambassador to this group; (2) I was already playing this role before getting involved with FitSpirit; and (3) yes, I think I have become an ambassador to this group since my involvement with FitSpirit. We dichotomized respondents' answers into two options (Yes for "I was already playing this role before getting involved with FitSpirit, and yes, I think I have become an ambassador to this group since my involvement with FitSpirit"; and No for "no, I do not think I am an ambassador to this group"). Also, there were two more questions about participating in FitSpirit and its impacts on the participants: (1) "In your opinion, participating in FitSpirit has overcome some barriers, i.e., fear of being judged by participants at your school?" and (2) "In your opinion, participating in FitSpirit has generated other positive impacts, i.e., the camaraderie among the girls at your school?". The program leaders assigned a level of agreement to each statement based on one of four options (a little, half, a lot,

and I do not know). Also, we dichotomized respondents' answers into two options (Majority of participants for "a lot"; and Minority or half of the participants for "a little, half, and I do not know"). Participants could choose to skip or not respond to certain items in the questionnaire.

Data Analysis

The categorical variables were expressed as numbers and percentages. The PA levels, recreational screen time, sleep, and eating habits variables were stratified by adherence (or lack thereof) to their corresponding Canadian recommendations before data analysis. The chi-square exact test (2-sided) was used to analyze the associations between PA levels, screen time, sleep, eating habits, and the perceived impacts of FitSpirit. The significance levels were set at 0.05. SPSS version 27.0 was used to analyze the data (IBM SPSS Statistics, Armonk, NY, USA).

Results

A total of 53 program leaders completed the online questionnaire. Three participants were excluded from the analysis due to missing data. Fifty adult program leaders were included in this study and their characteristics are presented in Table 1. More than half of the program leaders had four years or more of experience with FitSpirit. Most program leaders had five hours or less of screen time for work. Most participants met recommendations for PA levels, recreational screen time, and sleep variables. However, most participants did not meet recommendations for eating habits.

Table 1

Characteristics of the Participants (n= 50)

Variables		n(%)
Sex	Female	47(94%)
	Male	3(6%)
Seniority in FitSpirit program	7 years or more	14(28%)
	4-6 years	14(28%)
	3 years or less	22(44%)
Screen time for work	5 hours or less	37(74%)
	6 hours or more	13(26%)
Physical activity levels	Meet recommendations	39(78%)
Recreational screen time	Meet recommendations	46(92%)
Sleep time	Meet recommendations	46(92%)
Eating habits	Meet recommendations	18(36%)

As presented in Table 2, 68% of program leaders reported that they encouraged their colleagues, while 66% encouraged their family, and 68% encouraged their friends. Eighty-eight percent of the respondents answered that participating in the FitSpirit has improved PA in most adolescent girls at school. Additionally, 48% of respondents reported that participation in FitSpirit has helped overcome significant barriers, such as fear of being judged, among the majority of adolescent girls at school. Also, 66% of the respondents reported that participation in FitSpirit has positively affected the camaraderie among most adolescent girls at school.

Table 2

Program Leaders' Perception of Changes in PA Levels in Teenage Girls and their Network

Variables		n(%)
Program leaders have had an encouraging impact on their colleagues	Yes	34(68%)
	No	16(32%)
Program leaders have had an encouraging impact on their families	Yes	33(66%)
	No	17(34%)
Program leaders have had an encouraging impact on their friends	Yes	34(68%)
	No	16(32%)
FitSpirit has had an improving impact on the physical activity levels of girls	Yes	44(88%)
	No	6(12%)
FitSpirit has had a significant impact on reducing the girls' fear of being judged.	Majority of participants	24(48%)
	Minority or half of participants	26(52%)
FitSpirit has had a positive impact on the camaraderie among girls	Majority of participants	33(66%)
	Minority or half of participants	17(34%)

Table 3 presents the results for the association between the PA profile of program leaders and the impacts of FitSpirit. There was a significant association between the program leaders who met the PA recommendations and their impact on encouraging colleagues; those who met the recommendations were more influential in encouraging their colleagues ($p = 0.024$). Similarly, there was a significant association between the program leaders who met the PA recommendations and their impact on encouraging friends; those meeting the criteria had a greater positive influence on their friends ($p = 0.002$). The association between program leaders meeting PA recommendations and influencing their families was not significant ($p = 0.151$). Results indicated that the PA levels of program leaders had no significant impact on improving PA provision for girls. Also, the PA levels of program leaders did not impact adolescent girls' fear of being judged and camaraderie.

Table 3

Relationship Between Physical Activity Profile of Program Leaders and Impacts of FitSpirit

Variables		Physical activity recommendations		X^2 (df=1)	Exact P value
		Meet	Not meet		
		n= 39 (%)	n= 11 (%)		
Program leaders have had an encouraging impact on their colleagues	Yes	(76.9%)	(36.4%)	6.49	**0.024**
	No	(23.1%)	(63.6%)		
Program leaders have had an encouraging impact on their families	Yes	(71.8%)	(45.5%)	2.65	0.151
	No	(28.2%)	(54.5%)		

Program leaders have had an encouraging impact on their friends	Yes	(79.5%)	(27.3%)	10.75	**0.002**
	No	(20.5%)	(72.7%)		
FitSpirit has had an improving impact on the physical activity levels of girls	Yes	(87.2%)	(90.9%)	0.11	1.000
	No	(12.8%)	(9.1%)		
FitSpirit has had overcome impact on the girls' fear of being judged	Majority of participants	(46.2%)	(54.5%)	0.24	0.738
	Minority or half of participants	(53.8%)	(45.5%)		
FitSpirit has had a positive impact on the camaraderie among girls	Majority of participants	(71.8%)	(45.5%)	2.65	0.151
	Minority or half of participants	(28.2%)	(54.5%)		

p-values were based on chi-square test. Statistical significance: $p < 0.05$.

There were no significant associations between recreational screen time (Table 4), sleep profile (Table 5), and eating habits (Table 6) of program leaders and the impacts of FitSpirit.

Table 4

Relationship Between Recreational Screen Time Profile of Program Leaders and Impacts of FitSpirit Program

Variables		Recreational screen time recommendations		X^2 (df=1)	Exact P value
		Meet	Not meet		
		n= 46 (%)	n= 4 (%)		
Program leaders have had an encouraging impact on their colleagues	Yes	(69.6%)	(50%)	0.65	0.584
	No	(30.4%)	(50%)		
Program leaders have had an encouraging impact on their families	Yes	(65.2%)	(75%)	0.16	1.000
	No	(34.8%)	(25%)		
Program leaders have had an encouraging impact on their friends	Yes	(67.4%)	(75%)	0.09	1.000
	No	(32.6%)	(25%)		
FitSpirit has had an improving impact on the physical activity levels of girls	Yes	(87%)	(100%)	0.59	1.000
	No	(13%)	(0%)		
FitSpirit has had overcome impact on the girls' fear of being judged	Majority of participants	(45.7%)	(75%)	1.27	0.340
	Minority or half of participants	(54.3%)	(25%)		
FitSpirit has had a positive impact on the camaraderie among girls	Majority of participants	(67.4%)	(50%)	0.50	0.597
	Minority or half of participants	(32.6%)	(50%)		

p-values were based on chi-square test. Statistical significance: $p < 0.05$.

Table 5

Relationship Between Sleep Profile of Program Leaders and Impacts of FitSpirit

Variables		Sleep time recommendations		X^2 (df=1)	Exact P value
		Meet	Not meet		
		n= 46 (%)	n= 4 (%)		
Program leaders have had an encouraging impact on their colleagues	Yes	(67.4%)	(75%)	0.09	1.000
	No	(32.6%)	(25%)		
Program leaders have had an encouraging impact on their families	Yes	(65.2%)	(75%)	0.16	1.000
	No	(34.8%)	(25%)		
Program leaders have had an encouraging impact on their friends	Yes	(67.4%)	(75%)	0.09	1.000
	No	(32.6%)	(25%)		
FitSpirit has had an improving impact on the physical activity levels of girls	Yes	(87%)	(100%)	0.59	1.000
	No	(13%)	(0%)		
FitSpirit has had overcome impact on the girls' fear of being judged	Majority of participants	(47.8%)	(50%)	0.01	1.000
	Minority or half of participants	(52.2%)	(50%)		
FitSpirit has had a positive impact on the camaraderie among girls	Majority of participants	(67.4%)	(50%)	0.50	0.597
	Minority or half of participants	(32.6%)	(50%)		

p-values were based on chi-square test. Statistical significance: $p < 0.05$.

Table 6

Relationship Between Eating Habits of Program Leaders and Impacts of FitSpirit

Variables		Eating recommendations		X^2 (df=1)	Exact P value
		Meet	Not meet		
		n= 18 (%)	n= 32 (%)		
Program leaders have had an encouraging impact on their colleagues	Yes	(77.8%)	(62.5%)	1.24	0.351
	No	(22.2%)	(37.5%)		
Program leaders have had an encouraging impact on their families	Yes	(77.8%)	(59.4%)	1.74	0.227
	No	(22.2%)	(40.6%)		
Program leaders have had an encouraging impact on their friends	Yes	(83.3%)	(59.4%)	3.04	0.117
	No	(16.7%)	(40.6%)		

FitSpirit has had an improving impact on the physical activity levels of girls	Yes	(94.4%)	(84.4%)	1.11	0.399
	No	(5.6%)	(15.6%)		
FitSpirit has had overcome impact on the girls' fear of being judged	Majority of participants	(33.3%)	(56.3%)	2.42	0.149
	Minority or half of participants	(66.7%)	(43.8%)		
FitSpirit has had a positive impact on the camaraderie among girls	Majority of participants	(50%)	(75%)	3.21	0.119
	Minority or half of participants	(50%)	(25%)		

p-values were based on chi-square test. Statistical significance: $p < 0.05$.

Discussion

The objectives of this study were to describe program leader's lifestyle habits and their perceptions of FitSpirit impacts and to analyze the association between program leader's perception of FitSpirit impacts and their lifestyle habit variables. program leaders lifestyle habits showed that many program leaders met recommendations for PA levels, recreational screen time, and sleep variables but not eating habits. Study results indicated that program leaders who met the PA recommendations were significantly associated with encouraging their colleagues and friends, but that it was not a requisite for providing PA to girls.

Some lifestyle habits seem more critical than others in influencing friends and peers. Individuals' physically active lifestyle habits play an essential role in encouraging relatives to take PA (Carballo-Fazanes et al., 2020). There is a significant association between doing PA and the participation of relatives (family, friends, and colleagues) in PA programs (Carballo-Fazanes et al., 2020). Social support interventions boost PA levels, frequency of exercise, and time spent exercising (Kahn et al., 2002). In addition, interpersonal relationships impact PA levels by generating social norms and support that restrict or encourage health-promoting habits. For instance, participating in PA programs with others can support the development of healthy social norms for PA within a person's social network (McNeill et al., 2006).

Further, studies have demonstrated a good association between more PA and supportive friends (Amati et al., 2018; Vilchez et al., 2021). Several papers that directly link social networks with PA have been published. According to some studies, specific social network elements, including the network size and how often people interact with one another, are all linked favourably to energy expenditure and exercise participation (Flynn et al., 2018; Tergerson & King, 2002). These results are in association with the FitSpirit approach, as the non-competitive group activities in FitSpirit are planned to increase the number of adolescent girls meeting Canadian PA standards through fun, team spirit, fulfilment, and commitment (Sardin, 2024).

Consistent with another study conducted on college students(Nabors et al., 2022), program leaders had a positive influence on encouraging their friends' and colleagues' exercise behaviours. These highlights that program leaders have an impact beyond the teenage girls involved in FitSpirit. Colleagues and friends influence individuals' PA behaviour through behavioural modelling (Bakalár et al., 2019). Friends who are athletes often have a significantly positive impact on their peers' PA behaviour (Nabors et al., 2022). They typically adopt healthy behaviours to improve their athletic performance, and their companions often imitate their exercise routines

(Nabors et al., 2022). Also, friends have a social impact on their peers' PA levels through various forms of friendship support, such as encouragement and participation in activities together (Cheng et al., 2014; Fitzgerald et al., 2012). Peers' total and discretionary PA levels may increase if their friends support them in their PA efforts (Morrissey et al., 2015). Friends who are physically active need to be involved in their peers' PA in some ways if they want to lead physically active lifestyles (Fitzgerald et al., 2012). This is because it appears that having active friends supports PA and having inactive friends discourages it (Maturo & Cunningham, 2013). Even though using friendships to encourage PA in experiments or interventions is still largely unexplored, observational studies show that friendships may provide opportunities to encourage the early development of healthy PA habits and preferences that may become lifelong habits (Maturo & Cunningham, 2013).

Program leaders play a vital role in fostering social bonds and a sense of community, which are essential for promoting physical activity and resilience among participants (Kosoko-Lasaki et al., 2019). Implementing PA programs in schools encourages people to hold one another accountable, subsequently fostering a sense of camaraderie among participants (Kosoko-Lasaki et al., 2019). The behaviours and attitudes of adults significantly influence the values and choices of those around them. Therefore, program leaders play a crucial role in shaping these dynamics by modeling healthy behaviours (Hand, 2014). Numerous studies highlight the importance of teachers as role models, emphasizing that they must exemplify healthy and ethical behaviours to inspire their students and communities (Kaur, 2019; Nord, 2011). In this context, program leaders not only influence the PA levels of their social circles but also promote a culture of health and ethical behavior through their own lifestyle choices.

Teachers are models to students, and adolescents often idealize, watch closely, and try to imitate their teachers' behaviour (Barker et al., 2023; McCuaig & Quennerstedt, 2018). Also, teachers can assist their students by maintaining a long-term relationship with them to emphasize positive values and heroic actions (Kaur, 2019). In this study, adolescent girls were not impacted by program leader’s lifestyle. program leader’s lifestyle habits do not appear important in influencing adolescent girls. However, program leaders might positively impact adolescent girls' behaviour, irrespective of their lifestyle habits, which is very important in a school setting. In other words, even if program leaders do not lead active lifestyles based on national guidelines recommendations, they can still support participants and positively influence their PA participation. This suggests that the effectiveness of a PA program is not solely dependent on the program leaders’ own activity levels. Instead, their ability to connect with and support participants may significantly impact engagement, especially in programs specifically designed and tested for this population and setting. This challenges the assumption that being a role model in PA is a prerequisite for fostering positive outcomes among participants.

Our study is the first to investigate the lifestyle habits (PA, screen time, eating, and sleep habits) of program leaders using Canadian 24-Hour Movement Guidelines and the 2007 Canada Food Guide and their relationship with the impacts of a school-based PA program on adolescent girls and relatives. Therefore, the outcomes of the current study can be used as a reference for future research into program leader’s lifestyle habits and their perceptions of the impacts of PA programs. A limitation of this study is that the respondents' self-reports of the factors examined may not accurately reflect their true behaviours, as individuals often tend to overestimate their PA levels and underestimate their screen time (Sampasa-Kanyinga & Chaput, 2016). Future research could address this self-report bias by incorporating objective measures, such as accelerometers for PA and screen time monitoring, to validate self-reported data. Another limitation is the sample size of the respondents that did not include all partner schools (i.e., 138). This restricted sample

size may limit the generalizability of the findings to other contexts and populations. It is important to consider that the experiences and behaviours of the participants may not fully represent those of students in the unrepresented schools. For future research, increasing the sample size and including a broader range of schools could provide more robust data and insights, enhancing the applicability of the findings across different educational settings.

Conclusion

Our findings highlight the importance of adhering to recommended PA levels for program leaders to encourage their social circles, including friends and colleagues, to be more physically active. This study suggests that among lifestyle habits, adhering to PA recommendations is likely the most crucial for program leaders compared to screen time, eating, and sleeping habits in motivating friends and colleagues to adopt physically active lifestyles. However, the lifestyles of program leaders did not stand out as a significant factor influencing teenage girls, the target population of the program. This is significant for recruitment purposes, signalling that program leaders from various lifestyle backgrounds can be recruited to act as mentors for teenage girls.

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