

PHYSICAL ACTIVITY, WELL-BEING REGULATION AND MOTIVATIONAL ORIENTATION IN DISADVANTAGED POPULATIONS: A PRELIMINARY CASE STUDY IN A FRENCH PRIORITY NEIGHBORHOOD

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Abstract Our study first examines the socio-demographic and psychological characteristics, and the practice of physical activities of the residents of a priority neighborhood of the local urban policy of the French northern mining basin. Second, this study seeks to identify the obstacles to exercise physical activity among the same residents, in order to propose an integrated solution for offering adapted physical activities. The field surveys collected socio-demographic data from 87 residents ($M = 45.55$, $SD = 15.46$

years; 67 women and 20 men) and measured physical activity level (Ricci and Gagnon test), well-being regulation (Diagnofeel) and motivational orientation (Motivational Orientation Questionnaire) through self-reported questionnaires. Our results allow us to distinguish two categories among these disadvantaged groups: an active and a non-active. We show that, apart from the regulation of well-being, the non-active group has the same characteristics as the active one along the other variables measured. Indeed, active people differ significantly from non-active people in their engagement in physical activity [$t(85) = 4.29, p < 0.001$] and pleasure [$t(85) = 2.3, p = 0.024$] to regulate well-being despite facing the same barriers and having similar needs as the general population. This is worth considering when developing physical activity engagement strategies and programs.

Key words: disadvantaged neighborhood, physical activity, motivational orientation, barriers

Introduction

Several arguments suggest that regular physical activity not only improves health by reducing the risk of chronic diseases, but it also reduces mortality (Cleland et al., 2014; Lee & Skerrett, 2001; Lee et al., 2012; Nyberg et al., 2025; Schwendinger et al., 2025). From a psychological perspective, studies show that engaging in physical activities increases participants' well-being (Arent et al., 2000; Thomas et al., 2021; Herbert et al., 2022; Stevens et al., 2020) at all ages of life. This engagement also simultaneously generates an increase in positive emotions (Garn & Simonton, 2022). Thus, several measures such as the National Nutrition and Health Program, the National Plan for Prevention through Physical or Sports Activities, the Sport and Health and Wellness Plan have been set up by the political authorities to promote the practice of physical activity in France (Perrin, 2019). These programs use a practical and normative approach to counteract sedentary behavior (Perrin et al., 2021; Vieille-Marchiset, 2019). However, these programs do not allow all population groups, such as those living in the priority neighborhoods of the local urban policy, to have access to regular physical exercise (Honta, 2016). However, the priority neighborhoods of the local urban policy were defined and delimited by the 2014 programming law for the city and urban cohesion to provide more resources to regions with an average annual income of less than 11 250 euros per resident. In addition to this financial criterion, the priority neighborhoods of the local urban policy are characterized by high rates of job seekers, elevated school drop-out rates and people living below the poverty threshold (Vieille-Marchiset et al., 2018). Despite these factors being considered politically at national and regional level, their action plans at times fail to reach the targeted residents in some priority neighborhoods of the local urban policy. This phenomenon can be explained by dispersed and therefore inefficient public action (Sallé et al., 2021), combined with the sedentary lifestyle residents of priority neighborhoods of the local urban policy are prone to lead (Honta, 2019).

Indeed, several studies show that such environments accumulate difficult social living conditions (Terroy et al., 2021) for residents with little commitment to physical activity (Elhakeem et al., 2015; Gidlow et al., 2006; Degerlund Maldi et al., 2019; Sanz-Remacha et al., 2019; Williams, 2007). It now seems to be accepted that this low level of physical activity relates to unsuitable or ignored incentives, or that these incentives trigger resistance in disadvantaged populations (Vieille-Marchiset, 2019). These could be categorized in three levels of barriers (Sanz-Remacha et al., 2019). The first concerns personal barriers, including financial means, work, physical disabilities, illness, and psychological characteristics. The second type includes social barriers, e.g., problematic legacies of primary and secondary socialization (related to somatic culture, lack of social and family support). The third type refers to environmental barriers. In this regard, research have highlighted that open spaces, better street connectivity, communication between different agents (residents and community leaders); the involvement

of residents in planning their physical activity; and the use of individual strategies such as adapting the activities to the needs and capacity of the participants in order to increase the level of physical activity of people living in disadvantaged areas (Cleland et al., 2014; Pearce & Maddison, 2011). These studies show that people from an unfavorable social environment are at greater risk of leading a sedentary lifestyle. According to the World Health Organization (WHO), physical inactivity remains the fourth leading risk factor for mortality worldwide (De Souto Barreto, 2013). Indeed, in adults, increased sedentary time leads not only to an increased risk of mortality triggered by obesity (De Rezende et al., 2014) but also to elevated levels of anxiety and stress (Rebar et al., 2015).

There are undoubted harmful effects caused by a sedentary lifestyle and a strong link between social conditions, levels of physical activity and general health conditions on a population level. Therefore, there can be no doubt about the vulnerable status of people living in the priority neighborhoods of the local urban policy. They are in fact the most exposed to inequality when it comes to accessing social health benefits, meaning the improvement of both the physical and psychological well-being of each person through individual recognition and social protection (Labbé et al., 2007; Paugam, 2008). And since physical activity helps to “sharpen the taste for life” and it strengthens self-esteem (Le Breton, 2003), it is also an important mean of improving the lives of disadvantaged populations. But this cannot be done unconditionally, i.e., without an adapted physical activity regime based on two principles: 1) detailed knowledge of vulnerable populations and 2) an understanding of the background of their limited involvement in physical activity. This paper follows these two principles by studying a disadvantaged neighborhood, Saint-Albert (Liévin), located in one of the most deprived areas in France. Thanks to the described scale and focus of the investigation, it is possible to examine the physical, psychological, and social characteristics of the residents. We wish to identify the obstacles that keep adult residents from engaging in physical activity in order to subsequently propose an integrated solution for offering adapted physical activity for the same group. Finally, our analyses highlight what uniquely characterizes sedentary and disadvantaged individuals: when it comes to their well-being regulation, they make significantly less use of physical activity and pleasure. In contrast, their need for practicing physical activity and the barriers that might be keeping them from doing so are the same as those observed in the general population.

Materials and Methods

Context of the study

The study was conducted in accordance with the Declaration of Helsinki and did not require ethical approval. Informed consent was obtained from all subjects involved in the study.

The study took place in the Saint-Albert neighborhood of a former mining town in the north of France where, especially until the end of the 1970s, all local life was linked to coal. Two-thirds of the area is classified as a priority urban zone (2014–2020) stretching across 120 hectares and inhabited by a population of 2760. According to the National Institute of Statistics and Economic Studies (INSEE, 2019), the poverty line is 40%, more than 60% of low incomes are declared, a quarter of households are taxed and more than 90% of households rent. There are 850 jobseekers, and 200 of them are under 26 years of age. The unemployment rate is around 35%. One of the explanations for this phenomenon is a low level of qualification, a legacy of a long history of the exclusive need for physical labor in the mining industry. The proportion of people with no qualifications exceeds 80% and only 5% of the residents have a qualification from higher (tertiary) education. Finally, available health care coverage is poor

(there are no general practitioners or private paramedical professionals) and the neighborhood has less than one sports facility per 1,000 residents (i.e., 2.5 and 4 times less than at the municipal and national levels, respectively). All these indicators show the clear vulnerability of residents of the Saint-Albert neighborhood and underscores the need for investigations like the one introduced in this article.

Participants

Number of respondents

The objective of our survey was to obtain at least 30% of responses from the population of the Saint-Albert neighborhood, meaning 532 participants, and therefore we mobilized an interviewer for several weeks and opted for the door-to-door technique. However, at the end of the two visits to the neighborhood we only reached 87 respondents (10% of 865 respondents that we reached, See Figure 1).

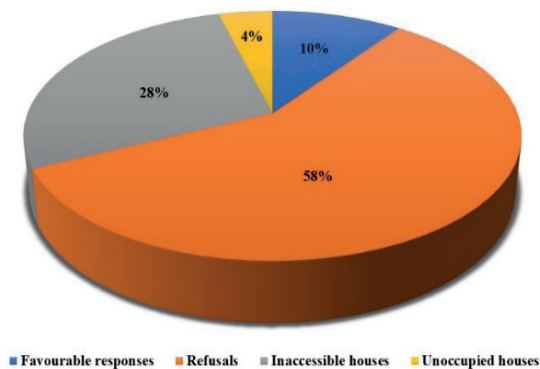


Figure 1. Distribution of residents' responses to participation in the survey or their unavailable/absent status

Characteristics of participants

The 87 participants (20 men, 22.98%) with an average age of 45.55 ± 15.46 years, ranging from 19 to 83 years. They are distributed among different socio-professional categories: senior executives (2.23% here compared with 9.5% nationwide), intermediate professionals (8% compared with 14%), employees (35.6% compared with 16%), workers (25.3% compared with 12%), pensioners (5.7% compared with 27%) and those without any professional activity (23% compared with 17%). As for the level of education, it varies between those with lower than a baccalaureate (40.23% here compared to 30% nationwide), those with a baccalaureate (26.44% compared to 17%), those with post-baccalaureate education (17.25% compared to 31%) and those with no degree from any institution of formal education (14.94% compared to 22%). The sample is composed of people displaying characteristics of their disadvantaged social backgrounds.

Measured parameters

Global questionnaire

The global questionnaire integrates several categories of questions: socio-demographic questions, questions related to past physical activity practice and questions related to needs regarding physical activity practice and also barriers that might keep respondents from engaging. The questionnaire collected information on age, gender, occupation, degree obtained, past participation in the respective physical activity, screen time spent watching sports programs, needs and barriers.

The Ricci & Gagnon questionnaire (measuring physical activity levels)

The residents' physical activity levels were measured using the Ricci & Gagnon questionnaire (n. d) modified by Laureyns & Séné. This tool, which has been validated for both sedentary and active people, consists of 9 questions. On the basis of the response scores (ranging from 1 to 5), an overall score is calculated. A final score below 18 corresponds to a non-active status, a score between 18 and 35 corresponds to an active status and a score above 35 means that the participant is very active physically.

Measuring well-being regulation (Diagnofeel)

The regulation of well-being was measured by the Diagnofeel questionnaire. It assesses the 5 regulation elements of well-being (IRFO, n. d), i.e., social relations, pleasure, physical activity, problem solving and psychological distancing. The Diagnofeel consists of 20 items to which participants respond by using a Likert scale ranging from 1 (strongly disagree) to 10 (strongly agree). Scores are then summarized by regulation elements, adding the scores of each associated item.

Regulatory Focus Questionnaire-Proverbs Form (RFQ-PF)

Self-reported and composed of two subscales related to promotion and prevention (Faur et al., 2017), the motivational orientation questionnaire contains proverbs (RFQ-PF). A promotion orientation means that people are sensitive to gains and non-gains, setting action-oriented goals to achieve the desired results. A prevention orientation, on the other hand, means that people are sensitive to losses and non-losses, show less risk-tolerance and are motivated by psychological safety and stability. The questionnaire consists of 18 items (8 items relate to promotion and 10 to prevention orientation). Participants can respond on a Likert scale from 1 (not at all) to 7 (perfectly). The determination of the promotion and prevention scores is based on mathematical equations (See the equations 1 and 2). Scores for items are summarized on each sub-scale, then divided by the number of the items on the respective subscale. Whichever sub-score is higher, determines the person's orientation.

- (1) Promotion = (item 1 + item 5 + item 7 + item 10 + item 12 + item 14 + item 15 + item 18) / 8
- (2) Prevention = (item 2 + item 3 + item 4 + item 6 + item 8 + item 9 + item 11 + item 13 + item 16 + item 17) / 10

Procedure: field study and analytic strategy

A field survey was carried out in the Saint-Albert neighborhood from 18 June to 2 August 2019 (period before the Covid-19 pandemic). It involved going door-to-door along about 60 streets to seek out the residents of nearly 865 homes. The administration of the questionnaires invariably followed this pattern: the participants first had to give their consent by signing the informed consent form and then agree to fill out the questionnaires (1) global questionnaire; 2) Ricci & Gagnon; 3) Diagnofeel; 4) RFQ-PF). A descriptive analysis was carried out based on the data collected by the global questionnaire. Two groups were formed a posteriori based on the participants' scores on the Ricci & Gagnon questionnaire (active and non-active). Following the identification of the two groups, Student or Welch tests were used after checking the normality of the data and the homogeneity of the variances to compare the two groups using the JASP version 16.1 software. Specifically, a second analysis was carried out to compare

members of the active group based on their practice of physical activities being supervised or non-supervised. The significance level was set at $p \leq 0.05$.

Results

Participants' level of physical activity in the past and at the time of the survey

46 of our 87 participants had not practiced any physical activity in the past. Of these, 26 remained inactive at the time we conducted our survey. On the other hand, 41 participants had practiced in the past, out of which group 17 became inactive. The Ricci & Gagnon results show an overall participants' score of 19.55 ± 7.89 . This result might suggest that all participants are active at the time of the survey, yet examination of the individual scores reveals Ricci & Gagnon scores below 18. Based on a Ricci & Gagnon survey score, we distinguished 2 groups: an active group with a score of 26.07 ± 5.28 and a non-active group with a score of 12.88 ± 2.99 . Furthermore, among the working people, 13 (29.55%) practice supervised activities (twice a week on average) and 31 (70.45%) practice unsupervised activities. Active people with club memberships play football, participate in weight training, fitness, Zumba, toning, badminton, cardio and dance. On the other hand, people who practice outside of clubs do bowling, walking, swimming, weight training and cycling. The characteristics of the active and non-active groups are shown in Table 1.

Table 1. The characteristics of the active and non-active sub-samples.

	Active (N = 44)	Inactive (N = 43)
Age (M \pm SD)	45.41 \pm 15.57 years	45.69 \pm 15.53 years
Age range	19–81 years	23–83 years
Gender (Women/Men)	34/10	33/10
Unemployed	8 (for an average of 3.50 years)	6 (for an average of 2.31 years)
Time spent watching sports on TV	2.67 \pm 2.19 hours	2.45 \pm 2.13 hours
Participants with health problems	12	14

Regulation of participants' well-being

The comparison of active and non-active people in terms of well-being regulation (see Figure 2a) shows that, regardless of the group membership, social relations are the primary regulatory element. This is followed by psychological distancing, pleasure, problem solving and physical activity in last place. The results also indicate that the two groups differ significantly in their use of physical activity [$t(84.39) = 4.3$, $p < 0.001$] and pleasure [$t(85) = 2.3$, $p = 0.024$] to regulate their well-being. Indeed, active people make significantly more use of physical activity and pleasure to regulate their well-being than non-active people, who rather tend to use social relations and psychological distancing. A second level of analysis focused on the influence of the supervised or unsupervised nature of physical activities. People with club memberships use physical activity as their primary means of well-being regulation. This is followed by psychological distancing, pleasure, social relations and finally, problem solving. In contrast, non-club practitioners use social relations as the first regulatory element before enjoyment, decision

making, problem solving and finally physical activity (see Figure 2b). Finally, the two groups utilize social relations differently: active people practicing outside of clubs make more use of social relations than their counterparts practicing in clubs, but this difference is not significant ($p = 0.061$).

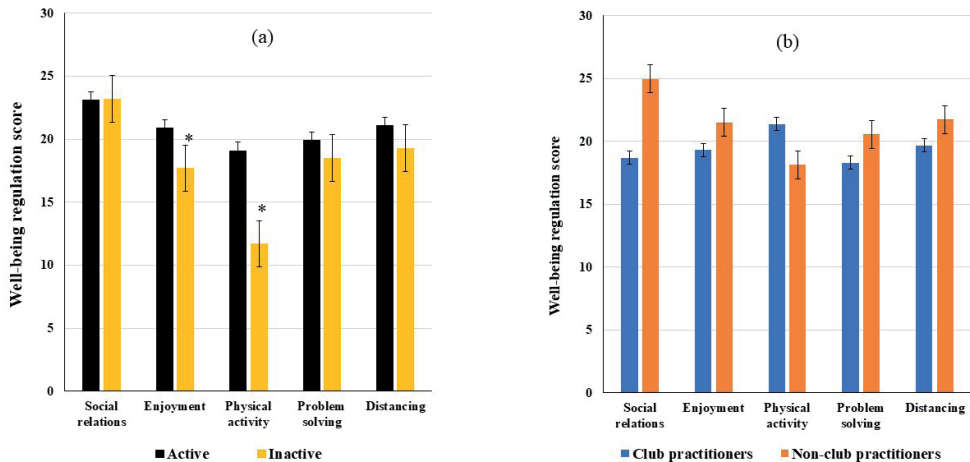


Figure 2. Regulation of well-being according to the level of physical activity and the nature of physical practice. (a) Comparison between active vs. inactive people; (b) Comparison between active club practitioners and active non-club practitioners; * Significant difference

Motivational orientation

The motivational orientation scores for the active and inactive groups are -0.04 ± 0.71 and -0.12 ± 0.72 , respectively. The comparison via t-test shows no significant difference ($p = 0.6$). Considering these results, it appears that participants would look at both losses and gains before engaging in physical activity. Finally, with specific regard to active people, the scores vary for club practitioners from -0.31 ± 0.43 and 0.08 ± 0.7 for non-club practitioners.

Barriers and needs

Active and inactive people mention the same barriers overall (apart from the influence of the weather cited by active people and the lack of infrastructure cited by inactive people, see Figure 3). In detail, the barriers mentioned by the active group include lack of time, workload, health, financial means, lack of motivation, the weather, and no specific influence (nothing). The inactive share this last point as the influence of health, lack of time, work weight, insufficient motivation, insufficient financial means, lack of infrastructure, and no specific influence (nothing).

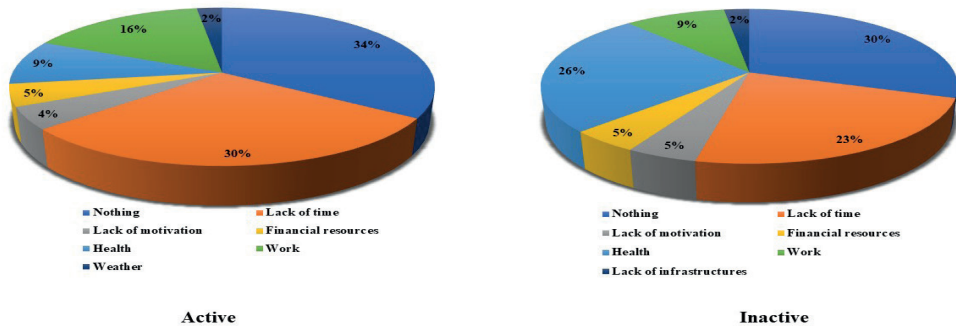


Figure 3. Barriers to practicing physical activities reported by participants

Concerning the needs (meaning the requirements to be able to practice physical activities), the results show that some active people do not have any. However, other active people highlighted the need for infrastructure, sports associations, fitness classes, the means of transport to the places of practice. Concerning the non-active, some express no needs or demands. However, other non-active people express the need for better infrastructure, the establishment of fitness classes, financial aid, and the creation of sports associations (See Figure 4).

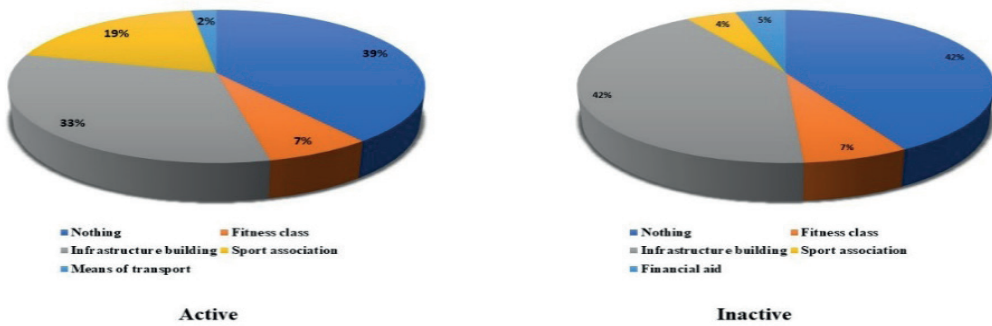


Figure 4. Requirements reported by participants as a function of their level of physical activity

Finally, we analyzed the results with a focus on the group of active people. The two sub-groups (people practicing in a club and people practicing without a club membership) reported 1) different barriers (circumstances that keep them from practicing physical activities): “no specific barrier/ reason” (5 vs. 10), “work” (3 vs. 4), “time constraints” (2 vs. 11), “health problems” (1 vs. 3), “financial means” (1 vs. 1); 2) different needs/ demands for engaging in physical activities: “none” (6 vs. 12), “lack of infrastructure” (5 vs. 9), “lack of sports associations” (1 vs. 7), “fitness classes” (1 vs. 2).

Discussion

Our study aimed to identify the characteristics of the residents of a disadvantaged neighborhood, the obstacles to their involvement in physical activity, and their specific needs. Our multidisciplinary team (psychologists, physiologists, and a sociologist) used a door-to-door survey approach for data gathering. We believe the above was needed to successfully approach the target group, to implement various measurement tools to circumvent two obstacles to social change: public action that is too sectorized and insufficiently coordinated (Sallé, 2021), and the inactive lifestyle characteristic of residents of priority neighborhoods of the local urban policy (Honta, 2019), which is exemplary in this respect (Saint-Albert).

First of all, we regret the low percentage of positive responses (10%) obtained during our surveys. This result could be explained by the remoteness, refusal or ignorance of the WHO recommendations concerning the practice of physical activity by the residents of the Saint-Albert neighborhood. Indeed, living under disadvantaged conditions, residents are less involved in physical activity, which is alarming, as inactivity is strongly linked with precariousness (Elhakeem et al., 2015; Gidlow et al., 2006; Degerlund Maldí et al., 2019; Sanz-Remacha et al., 2019; Williams, 2007). The lack of interest on the part of residents remains a concern. These findings could be a base for proposing strategies to elevate engagement in physical activities in the underprivileged areas; as being physically active is not only an important determinant of health (Wilkinson et al., 2003) but also plays a major role in reducing health inequalities (Vuillemin, 2016).

The residents who agreed to participate in our study have, overall, a level of physical activity at the lower end of the active population. Their levels of practice fail to meet the WHO recommendations, meaning they don't get to enjoy all benefits of physical activities. However, a more detailed analysis shows that half of the participants are inactive. Moreover, of the active participants, only 1/3 were involved in supervised activities. This low level of practice among the residents of the Saint-Albert neighborhood confirms the results of previous studies which were carried out in disadvantaged neighborhoods, highlighting the low level of physical activity practice (Elhakeem et al., 2015; Gidlow et al., 2006; Degerlund Maldí et al., 2019). Apart from the social environment, which could explain the low level of residents' physical activity, the barriers mentioned by the participants could shed further light on the phenomenon. In addition to the influence of the weather and the lack of infrastructure mentioned by the active and inactive population respectively, there are other barriers that seem to be common for both the active and inactive population. These include health problems, work as a discriminating factor, various shortages (of time, motivation, economic capital) and the constraints associated with childcare. These barriers are consistent with factors negatively associated with physical activity practice identified in a seminal report (INSERM, 2014) and concur with findings from work examining disadvantaged (Sanz-Remacha et al., 2019) and non-disadvantaged populations (André & Agbangla, 2020). Thus, strategies to counteract these barriers are essential to increase the level of practice of vulnerable residents. A circumvention strategy can be used to reach people with health problems specifically, for example by prescribing therapeutic physical activity for them. However, such a strategy must be known and accepted by the users. And it is important to make sure this partially medicalized activity will not cause iatrogenic effects that might further distance disadvantaged populations from utilizing the provided programs. The sport and health facilities, installed in the regions since the beginning of the 2020s, may be an effective way to combat the sedentary lifestyle. We have also identified needs associated with infrastructure and availability of physical practice. This need reflects a lack and, perhaps, an inadequacy of planning policies that successfully facilitate access to priority neighborhoods of the local urban policy. This would potentially be an effective step to

combat constraints associated with lack of time, especially if these facilities host light and short forms of physical practice. In sum, the promotion of physical activity in an area where people are prone to lead sedentary lives, could be achieved by using two strategies: education, and modification of the physical and social environments. The educational strategy would aim to change beliefs, knowledge, behaviours, and individual resources to ultimately develop. As for the strategy of modifying the physical and social environment, its aim would be to develop and organize physical activities for the target population.

As for the motivational orientations, several uncertainties persist because of an absolute score very close to 0. Thus, the declared commitment would not be significantly linked to the fact of organizing oneself to avoid losses or to seek the gains of a practice. Overall, our results show that participants, regardless of whether they are active or inactive, fall into both the promotion and prevention categories. As for the regulation of well-being, our results showed that, overall, active and inactive participants regulate their well-being by using social relationships in the first place. This result confirms previous results, highlighting how social support makes it possible, under unstable circumstances, to recover a level of well-being (Binder & Coad, 2011; Sarason et al., 2021; Thoits, 2011; Turner, 1981). Furthermore, participants seemed to signify the importance of psychological distancing, enjoyment and problem solving. This use of distancing and problem solving suggests ways of minimizing the intensity of stress, and thus the harmful effects of their experiences that affect their well-being. In contrast, the use of pleasure allows participants to connect to positive emotions. Finally, the participants mention the use of physical activities in the last place. This low use of well-being regulation could be explained by the fact that the residents of this underprivileged neighborhood have not developed physical literacy, i.e., knowledge that allows them to utilize publicly available sports opportunities in order to be able to benefit from them in terms of well-being regulation. Thus, when faced with situations that negatively impact their well-being, they mobilize this resource less. However, studies have showed a relationship between physical activity and psychological well-being (Elvsky et al., 2005; Kahn et al., 2002). Nevertheless, when we compare active club and active non-club practitioners, we find that active club practitioners use physical activity first, while active non-club practitioners use social relationships.

Our study has several limitations, some of which have already been noted. One of them is the size of the sample, which prevents any generalization or systematization. Moreover, the gender imbalance in our sample limited our ability to examine the evolution of the studied characteristics across genders. Future research should include a larger sample with similar profiles and compare it to a group of less disadvantaged individuals. Research techniques, other than door-to-door, should be used to widen the scope: the ethnographic approach offers this advantage, but it remains costly and extremely time-consuming (Demazière & Nuytens, 2018; Nuytens, 2011; Nuytens, 2014). A final well-identified limitation concerns the measurement of physical activity. Carried out with the help of self-reported questionnaires, this measurement involves a possible desirability bias that should be controlled by using, for example, more objective tools with actimeters.

Conclusions

Our study confirms that many residents of culturally and socially disadvantaged area stay away from physical activities. Literature and our surveys suggest that these people are caught in a circle from which it is difficult to escape. Their primary and secondary socialization often causes several sedentary effects which are further worsened by fragmented and more or less ineffective local and national public policies. Breaking out of such a set of circumstances implies building and exploring strategies for social change, behavioral change,

and engagement in physical activities. For a problem of this complexity, only the construction of an interventional and conditional physical activities program seems to provide a successful solution. For example, the effectiveness of a multicomponent strategy could be tested, by combining information actions such as neighborhood campaigns, support of the individual's entourage, and setting up of physical activity slots in the neighborhood (Kahn et al., 2002).

Consequently, this exploratory study should pave the way for further research, particularly aimed at enhancing the existing body of knowledge through future investigations conducted on larger and more representative samples.”

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