

Original Article

# Monitoring and evaluation of physical activity interventions in the primary care network of Pernambuco

## Monitoramento e avaliação nas intervenções de atividade física na Atenção Básica de Pernambuco

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### Abstract

The aim of this study was to analyze the elements that characterize monitoring and evaluation (M&E) in physical activity interventions developed in the primary care network in the state of Pernambuco, Brazil. A statewide cross-sectional study was carried out in 104 cities, and questionnaires were used to collect data from managers, professionals, and users of the interventions. Among the managers, the following variables were analyzed: presence and frequency of M&E actions; participation of users and professionals; use of M&E results in planning; type of instrument that was used; level of importance attributed to M&E actions; and perception of barriers and of professionals' level of technical competence to develop M&E actions. The professionals provided information about their level of knowledge and skills to perform M&E, and the users reported the frequency of their participation in M&E actions. Among the 145 managers who were interviewed, 82.4% referred performing M&E actions. This proportion was not significantly different comparing the types of interventions that were evaluated. Only 47.6% of the managers used M&E results to support planning. Among the 481 professionals who were interviewed, only 21.6% reported a high or very high level of knowledge about M&E actions. Among the 942 users, 44% reported that they had never participated in M&E actions. Although most of the managers reported performing M&E actions, less than half used M&E results to support planning. Furthermore, we found a low proportion of professionals with adequate levels of technical competence to develop M&E actions and a low participation of users in these actions.

### Keywords

Health Promotion, Physical Activity, Health Management, Primary Health Care.

### Resumo

O objetivo deste estudo foi analisar os elementos que caracterizam o monitoramento e avaliação (M&E) nas intervenções de atividade física (AF) desenvolvidas na Atenção Básica no estado de Pernambuco, Brasil. Para tanto, realizou-se um estudo transversal em 104 municípios, recorrendo-se ao uso de questionários para coletar dados com gestores, profissionais e usuários das intervenções. Entre os gestores foram avaliadas as variáveis: presença e periodicidade das ações de M&E; participação de usuários e profissionais; utilização dos resultados do M&E no planejamento; tipo de instrumento utilizado; grau de importância atribuído; percepção de barreiras e do nível de competência técnica dos profissionais para realizar ações de M&E. Com os profissionais foram obtidos dados sobre o nível de conhecimento e a habilidade em M&E, enquanto os usuários referiram a frequência de participação nas ações de M&E. Dos 145 gestores avaliados, 82,4% informaram que realizavam M&E, sendo que essa proporção não apresentou diferença significativa entre os tipos de intervenções avaliadas. Apenas 47,6% dos gestores utilizavam os resultados do M&E no planejamento. Dos 481 profissionais, apenas 21,6% indicaram possuir nível de conhecimento alto ou muito alto sobre ações de M&E. Dos 942 usuários, 44% informaram que nunca participaram das ações de M&E da intervenção de AF. Apesar de a maioria dos gestores indicar que realizava ações de M&E, menos da metade utilizava os resultados do M&E para apoiar ações de planejamento. Ainda, pode-se observar baixa proporção de profissionais com níveis desejáveis de competência técnica para ações de M&E e reduzida participação dos usuários nessas ações.

### Palavras-chave

Promoção da saúde; Atividade física; Gestão em saúde; Atenção Primária à Saúde.

### Introduction

Monitoring and evaluation (M&E) of public health interventions have been recognized as a fundamental

strategy to investigate the effectiveness of these interventions, the achievement of the established goals and the need to improve health programs, actions or policies<sup>1</sup>. In the physical activity promotion axis, the World Health Organization (WHO)<sup>2</sup> has started to emphasize the performance of M&E actions as essential elements to support managers in decision-making concerning intervention planning and to analyze the program's success. However, although these actions have been instituted in some health policies<sup>3-5</sup>, their performance still seems to face operational difficulties related to their implementation and execution<sup>6-8</sup>.

According to Carvalho *et al.*<sup>9</sup>, monitoring is the systematic supervision of relevant information related to the process and result of interventions. Contandriopoulos *et al.*<sup>10</sup> believe that evaluation is understood as a value judgement about an intervention or about any of its components, with the aim of aiding decision-making. Although the terms M&E have their own concepts, these two elements are part of evaluative practices<sup>11</sup> and complement each other as health management mechanisms<sup>12-15</sup>. Nevertheless, in Brazil, M&E actions do not seem to be totally included in the routine of health programs and services<sup>16,9,17</sup>. Studies have found that health professionals and managers understand and/or use M&E practices in a distorted way<sup>13,18</sup>. Furthermore, a large part of the municipal health departments does not use the results of M&E actions to reorganize working processes<sup>19</sup>.

In the context of physical activity promotion, a study<sup>5</sup> that analyzed 27 national policies for physical activity promotion developed in Europe showed that a little more than half of these policies indicated an intention or obligation concerning the use of evaluation. Knuth and Hallal<sup>20</sup> argue that, as soon as a physical activity program is implemented, discussions about the evaluative processes that will be adopted become necessary, both in the perspective of an internal evaluation conducted by users, professionals and managers in the routine of the interventions, and in the perspective of evaluations that have a more scientific nature (evaluation research), developed to determine, for example, the effectiveness, efficiency and efficacy of these interventions.

Brazil's Ministry of Health, the organ responsible for financing countless interventions for physical activity promotion, has been qualifying municipal and state managers for the development of M&E actions<sup>21</sup>. Another strategy used to incorporate M&E actions, especially in the program *Academia da Saúde*, was the creation, in 2013, of an online monitoring system. This form, which is filled in by the municipal manager every semester, enables the federal management to monitor and analyze relevant information about the program, such as the existence of intersectoral actions, the main activities that have been developed and difficulties in conducting the program. In the state of Pernambuco (Northeastern Brazil), a similar experience has been developed by the State Health Department, which created an online form to monitor, on a monthly basis, the actions developed by the programs *Academia das Cidades* and *Academia da Saúde*<sup>22</sup>.

In spite of these efforts, the results of a study conducted by Amorim *et al.*<sup>7</sup> showed that less than 7% of the coordinators of the National Physical Activity Network programs utilize users' evaluation about the program as an M&E resource. According to Malta *et al.*<sup>6</sup>, although some studies have been carried out to evaluate the effectiveness of community-based physical activity interventions, one of the main challenges faced in these interventions is the need to strengthen a local M&E system.

Despite these initiatives, the scenario of M&E actions conducted in the physical activity interventions of the cities of the state of Pernambuco is currently unknown. In light of what has been presented so far, the aim of this study was to

analyze the elements that characterize M&E practices in physical activity interventions in the primary care network of the state of Pernambuco.

## Methods

This is a statewide, cross-sectional study resulting from a larger project entitled “Evaluation of programs and interventions related to physical activity in the primary care network of the state of Pernambuco – Project SUS+Ativo”. All the evaluation protocols contained in this project were submitted to and approved by the Ethics Committee of Research with Human Beings of the *Universidade de Pernambuco* (CAAE: 13373313.5.0000.5207).

The state of Pernambuco has 184 cities and is geographically divided in five regions (Metropolitan region, *Zona da Mata*, *Agreste*, *Sertão* and São Francisco region) and the Island of Fernando de Noronha. In the health context, these cities are strategically grouped into 12 health regions.

Due to logistic limitations, the present study was carried out in ten of the state’s health regions, totaling 143 cities. Of these, only 104 cities had interventions for physical activity promotion linked to primary care and in full operation. As the object of investigation, the interventions for physical activity promotion were composed by the following services/programs: *Núcleo de Apoio à Saúde da família* (NASF – Family Health Support Nucleus), *Programa Academia das Cidades* (PACID), *Programa Academia da Saúde* (PAS), and any other municipal program of physical activity promotion linked to the primary care of health departments.

The study’s target population were the managers of these interventions (represented by the coordinators of the NASF and of physical activity programs or, in their absence, healthcare managers and/or health secretaries), health professionals and users linked to physical activity interventions. A census was performed with all the managers and professionals who worked in such interventions.

For the selection of users, sample size was not calculated a priori; however, the number of interviewed users per city was established taking two aspects into account: the city’s population size (< 20 thousand inhabitants; from 20 to 49.9 thousand inhabitants; from 50 to 99,9 thousand inhabitants; 100 thousand inhabitants or more) and the scenario of physical activity interventions in primary care (scenario 1 = presence only of the NASF; scenario 2 = presence only of the PACID, PAS, or of a similar program; scenario 3 = presence of the NASF and of the PACID, PAS or a municipal program). The minimum number of users varied from at least 7 to 20 per city. In addition, users were distributed across different lifecycles (adolescence, adulthood and old age).

Data collection was performed in the period from February to August 2014. It was supported by the Health Department of the State of Pernambuco through the advertisement of the project SUS+Ativo and the request of the cities’ agreement to participate in data collection. Two teams, previously trained and composed of up to five members (undergraduate and postgraduate students of the *Universidade de Pernambuco* and *Universidade do Vale do São Francisco*) were responsible for visiting the cities.

Data collection with users and professionals occurred at the venues of the physical activity interventions, such as squares, sports courts, neighborhood associations, yards, community rooms and health units, at the times in which these interventions took place. Data collection with the managers, in turn, occurred, in the majority of times, at the health departments, after the interventions had been concluded.

To obtain the data, three previously tested and validated questionnaires were used, in the following versions: 1) self-administered questionnaire with manag-

ers; 2) self-administered questionnaire with professionals; 3) questionnaire in the format of a face-to-face interview with users. Regarding the reproducibility indicators of these instruments, the following results were obtained: the professional version varied from 0.47 to 1 (Spearman's correlation); the user version varied from 0.42 to 0.92 (Spearman's correlation). The instruments used in this study are available at the website of the *Grupo de Pesquisa em Estilos de Vida e Saúde* (Research Group into Lifestyles and Health) (<http://www.gpesupe.org/downloads.php>). The variables analyzed in the present study are presented on Table 1.

**TABLE 1** – Types of variables analyzed among managers, professionals and users of interventions for physical activity promotion in the Primary Care network of Pernambuco.

Investigated population	Analyzed variable
Manager, professional and user	Sociodemographic variables: Sex Age group Level of schooling Skin color Income
Manager and professional	Variables related to academic background: Area of initial education Continuing education Permanent education Variables related to professional action: Period of professional experience Type of employment
Manager	Variables related to the identification of the intervention: Type of intervention Period of existence of the intervention Source of financing Amount of human resources Participation of the local community in decisions related to interventions
Manager	Variables that express M&E practice: Presence and frequency of M&E actions Participation of users and professionals in M&E actions Utilization of M&E results in planning Level of importance attributed to M&E actions Type of instrument used to perform M&E Perception of barriers to the practice of M&E Perception of the professionals' degree of technical competence for the practice of M&E
Professional	Variables that express M&E practice: Level of M&E knowledge Level of skill for M&E actions
User	Variables that express M&E practice: Frequency of participation in M&E

Data tabulation was performed by means of the optical reading of the questionnaires through the utilization of the software SPHYNX® (Sphynx Software Solutions Incorporation, Washington, United States of America) and of a scanner of the model Fujitsu fi-6230z. For data analysis, descriptive procedures were employed (distribution of absolute and relative frequencies), as well as tests to compare proportions (chi-square and chi-square for trend). The level of significance that was adopted was  $p=0.05$ . The analyses were conducted in the statistical program SPSS (version 16.0).

## Results

Of the 143 cities of the state of Pernambuco that were contacted, only 104 had at least one physical activity intervention in primary care. In these cities, data were collected with 145 managers, 481 professionals and 942 users. One manager, four professionals and one user refused to participate in the study.

The sociodemographic characteristics of managers, professionals and users can be found on Table 2. According to the presented data, it is possible to notice that the majority of the interviewees was female. Among the managers, 97.9% had completed higher education, 70.6% earned a monthly income of 2 to 4 minimum salaries and 24.3% had their initial education in Nursing. As for the professionals, 94.2% had completed higher education, 79.9% earned 2 to 4 minimum salaries and 59.1% had their initial education in Physical Education. Among the users, 28.9% were older adults, 34.7% had completed High School, 62.4% earned a monthly income of up to 1 minimum salary and 31.1% lived in cities located in the *Sertão* region of the state of Pernambuco.

**TABLE 2** – Sociodemographic characteristics of managers, professionals and users of interventions for physical activity promotion in the Primary Care network of the state of Pernambuco, 2014.

Variables	Evaluated groups		
	Manager % (n)	Professional % (n)	User % (n*)
Sex			
Male	31.0 (45)	39.4 (189)	10.4 (98)
Female	69.0 (100)	60.5 (291)	89.6 (840)
Age group			
Adolescent	-	0.2 (1)	8.4 (79)
Adult	98.5 (135)	99.3 (452)	62.7 (590)
Older adult	1.5 (2)	0.4 (2)	28.9 (272)
Skin color			
White	37.5 (54)	44.9 (213)	27.5 (258)
Mixed ethnicity (black and white)	53.5 (77)	38.8 (184)	57.1 (537)
Black	2.8 (4)	8.9 (42)	11.0 (103)
Other	6.2 (9)	7.4 (35)	4.4 (42)
Income			
Does not have income	-	-	20.9 (196)
Up to 1 MS	9.8 (14)	13.9 (66)	62.4 (584)
From 2 to 4 MS	70.6 (101)	79.9 (381)	15.0 (140)
Above 4 MS	19.6 (28)	6.2 (30)	1.7 (16)
Level of schooling			
Illiterate	-	-	19.3 (191)
Incomplete Elementary School	-	-	22.3 (209)
Elementary School	-	0.2 (1)	17.5 (164)
High School	2.1 (3)	5.6 (27)	34.7 (326)
Higher Education	97.9 (142)	94.2 (448)	6.2 (59)
Area of Initial education			
Physical Education	23 (33)	59.1 (264)	-
Physiotherapy	16.7 (24)	16.3 (73)	-
Nursing	24.3 (35)	0.7 (3)	-
Nutrition	2.8 (4)	9.6 (43)	-
Psychology	9.7 (14)	5.6 (25)	-
Others**	23.6 (34)	8.8 (39)	-
Region of the state			
Metropolitan region of Recife	16.8(23)	39.2(188)	24.5 (232)
Zona da Mata	24.8(34)	10.0(48)	11.7 (110)
Agreste	24.1(33)	20.0(96)	27.5 (259)
Sertão	26.3(36)	21.0(101)	31.1 (292)
Vale do São Francisco	8.0(11)	9.8(47)	5.2 (49)

\* The sum does not correspond to the total number of cases of the sample due to missing values.

\*\*Other areas of initial education: Social Work, Pharmacology, Occupational Therapy, Dentistry, Biomedicine, Speech-Language Pathology and Audiology.

Concerning the component of permanent education and period of professional action, we found that approximately 50% of the managers had not attended, in the last 12 months, courses, events or qualifications about the management of physical activity interventions, and 50.8% had been managing these interventions for less than one year. Among the professionals, only 30.8% had been working in these interventions for more than three years.

Regarding the variables that characterized the physical activity interventions, 52.8% of the managers coordinated interventions developed by the NASF, 25.4% managed the PACID, 12.7% managed local interventions (municipal programs) of physical activity promotion and 9.2% managed the PAS. In addition, 20% of the managers coordinated more than one type of physical activity intervention in the city, like PACID and PAS (7.7% of the cases). Finally, according to the managers, 75.7% of these interventions had been in operation for more than one year.

Concerning users' participation in physical activity interventions, 38.4% informed they were users of the PACID, 19% participated in the PACID/PAS, 36.5% participated in the actions of physical activity promotion developed by the NASF and 6.1% attended some municipal program of physical activity promotion. As for the period of participation in such interventions, 66.7% of the users informed that they had been participating in them for at least six months.

Specifically about M&E actions (data presented on Table 3), 84.1% of the managers informed that they performed M&E actions in physical activity interventions. Although 70.3% of the managers classified the M&E actions as very important, only 47.6% reported using the results of M&E actions to support intervention planning activities. In addition, 29.2% informed that the main reason that hindered the performance of M&E actions was the professionals' lack of knowledge, as well as lack of incentive on the part of bosses and colleagues.

Among the interviewed professionals, the majority reported medium levels of knowledge and skills to perform M&E actions. When the users were questioned about their participation in M&E actions, 44% informed they had never participated in the M&E actions of the physical activity interventions.

The data presented on Table 4 show that there was no significant difference among the different types of physical activity interventions (NASF, PACID, PAS or other municipal programs) in relation to the variables that characterize M&E actions.

## Discussion

The main results of the present study were: 1) the majority of the managers informed that they performed M&E actions in interventions for physical activity promotion; 2) there was no significant difference among the different types of physical activity interventions in relation to the variables that characterize M&E actions; 3) less than half of the managers used the results of M&E actions to support planning actions; 4) the majority of the professionals informed having medium levels of knowledge and skills to perform M&E actions; 4) less than half of the users participated in M&E actions of physical activity interventions.

Some of the potentialities of the present study were its statewide design and the decision to perform a census among managers and professionals. In addition, the fact that data collection was carried out *in loco* with different populations (managers, professionals and users) allows a greater contact with different social and regional realities, in order to outline a diagnosis of physical activity interventions in relation to M&E practices.

Among the limitations, it is possible to highlight that the utilization of a sin-

gle type of instrument (questionnaire) for data collection can, in some situations, overestimate or underestimate the results. We believe that the incorporation of other forms of data collection, such as documental analysis and semi-structured interview, might potencialize the findings of this study, as this enables to further investigate the examined information.

The high frequency of performance of M&E actions by the managers of the interventions for physical activity promotion can be attributed to the current political-organizational context of the state of Pernambuco, which has been creating mechanisms to favor the institutionalization of monitoring in the routine of physical activity programs, like the PACID/PAS<sup>22</sup>. Furthermore, the federal government itself, represented by the Ministry of Health, has been developing efforts, since 2004, to incorporate evaluative practices in the routine of primary care. Thus, it has created the National Policy for the Monitoring and Evaluation of Primary Care<sup>23</sup>, and it has stimulated family health teams to perform M&E actions through the *Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica* (PMAQ-AB<sup>24</sup> - National Program to Improve the Access to and the Quality of Primary Care). In the international context, a study developed by the WHO<sup>25</sup> analyzed 25 cases of health promotion interventions developed by the local governments of 19 countries and showed that the majority of these interventions mentioned the use of evaluation as a strategy to monitor the results of interventions. Moreover, this study highlighted the importance of the participation of universities or research institutions in the local governments' support to the performance of M&E actions in interventions.

Another outstanding element was the frequency of performance of M&E actions, as 64.3% of the managers conducted M&E actions at least every three months. This result corroborates the principle discussed by Costa *et al.*<sup>26</sup>, who emphasize the importance of monitoring as an element of a systematic and continuous process to identify changes, and recommend that the interval between monitoring actions should not exceed six months. Furthermore, the results referring to the degree of importance attributed to M&E actions corroborate the findings of the study proposed by Vasconcelos *et al.*<sup>13</sup>. By means of a focus group with technicians and managers from the health department of the state of Ceará, the authors found that the M&E practice was perceived as something inherent in the service - something that should be part of the daily routine of the activities of a program or of the health service itself -, despite the existence of barriers to the utilization of evaluation. Contandriopoulos<sup>10</sup> argues that the greater the importance attributed by institutional actors to information deriving from evaluation, the more pertinent the incorporation of evaluative practices in the health services' routine.

Despite the institutionalization of M&E actions, we observed an incipient utilization of M&E results in the planning of interventions for physical activity promotion. Convergent results were found in the study carried out by Miranda *et al.*<sup>19</sup> with 577 leaders (secretaries, coordinators and technicians) of municipal health departments in Brazil: only 47% informed they use information deriving from M&E to reorganize working processes. According to Carvalho *et al.*<sup>9</sup>, the process of incorporating evaluative practice must allow M&E actions to subsidize or to be intrinsic to management.

As for the aspects cited by managers that might hinder the performance of M&E actions, a higher prevalence of barriers related to human resources can be observed. According to Miranda *et al.*<sup>19</sup>, the greatest difficulties faced by municipal health departments concerning M&E processes and practices are the lack or insuf-

iciency of qualified professionals who are motivated to deal with this area, as well as the insufficiency of financial resources allocated to these actions.

Another aspect that must be highlighted was the low involvement of users and professionals in the M&E actions of the physical activity interventions. These results are similar to the study conducted by Vasconcelos *et al.*<sup>13</sup>, in which evaluation was performed without the effective participation of professionals and users of the health services. According to Champagne *et al.*<sup>24</sup>, evaluation has a democratic dimension when it aims to foster debates. Thus, it is necessary that users participate actively in evaluation processes in order to question and evaluate whether the health programs and/or services have really fulfilled the objectives that had been initially established.

In the present study, the result related to the users' reduced participation in M&E actions can be partially attributed to two factors: difficulty in understanding issues related to M&E actions, which may have underestimated this result, and the fact that the majority of the interviewees had been participating in the physical activity intervention for less than 6 months. Among the professionals, the incipient involvement in M&E actions can be attributed to the components knowledge and skill. In the present study, we found that few professionals rated their levels of M&E knowledge and skills as high or very high. To Ledikwe *et al.*<sup>14</sup>, one of the factors that can explain the professionals' reduced participation in M&E actions can be attributed to lack of appropriation of tasks related to M&E. According to Nickel *et al.*<sup>27</sup>, the capacity to perform M&E actions ranges from activities of planning and structuring an evaluation to performing the evaluation, analyzing it and disclosing its results, which require competencies that need to be constantly developed.

Finally, the results of this study showed that there was no significant difference between the physical activity interventions (PACID, PAS, municipal programs and NASF) and the variables that characterize M&E actions. This result may be partially related to the fact that the cities that have PACID, PAS or a similar program (nomenclature used to identify a physical activity program that already existed in the city and participated through the adherence process, and which receives or has already received incentives from the state or federal government) must monitor these interventions on a monthly basis<sup>22</sup>. Concerning the interventions for physical activity promotion developed by the NASF, they can be targets of evaluations that occur in the context of primary care, like those resulting from the evaluation of PMAQ-AB<sup>28,29</sup>. However, according to Rodrigues *et al.*<sup>30</sup>, there is no M&E model for the NASF instituted by the Ministry of Health. The only source of registration of the actions performed by this team is the SAI (*Sistema de Informação Ambulatorial* – Ambulatory Care Information System), through the professional's occupation Brazilian code, but this does not cover all the actions of the NASF. Only the procedures that were performed are registered, such as consultations and home visits.

In spite of positive results concerning the performance of M&E actions (existence of actions, high frequency and the degree of importance that is attributed to them) in physical activity interventions, some key aspects must be taken into account for the consolidation of evaluative practices in these interventions. The institutionalization of M&E must favor the participation of the civil society, professionals and research entities in this process. In addition, professionals and managers must be instrumentalized to enhance the performance and utilization of M&E results in order to qualify interventions for physical activity promotion in the context of the *Sistema Único de Saúde* (Brazil's National Healthcare System).



These and other initiatives can increase the capacity for performing M&E actions of the local management of interventions for physical activity promotion.

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## Authors' contributions

Mauro Barros conceived the research project and supervised all the stages of the study, which ranged from the construction of the research instrument and the planning of the sample design to the writing of the paper. Emmanuely Lemos was responsible for training researchers for data collection and helped to write the manuscript. Simone Santos contributed to the revision of the manuscript. Rildo Wanderley contributed to data analysis. All the authors revised previous versions of the paper and approved this final version.

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