

ORIGINAL ARTICLE

# Components of intersectoral partnerships and positive health outcomes in highly vulnerable areas in São Paulo/Brazil: a mixed methods study

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## Abstract

**Introduction:** Studying highly vulnerable areas is challenging, but it can support intersectoral actions to tackle the social inequalities prevalent therein.

**Objective:** This research explores the relationship between the central constituents of intersectoral collaborations and the positive results of intersectoral actions in areas of high social vulnerability in São Paulo, Brazil. It also analyzes the perception of professionals in basic health units (BHU) regarding the results related to those actions.

**Methods:** This study employed methodological triangulation and the mixed method sequential explanatory strategy. First, we applied an online form validated by face and content for BHU managers. Then, we used the SPSS Statistics software to perform nonparametric tests. Statistical significance was set at  $p < 0.05$ , and 95% confidence intervals and phi coefficients were calculated. After identifying the units that carried out intersectoral actions with different partners, we conducted focus groups in four of them with 26 health professionals until saturation. Finally, we integrated quantitative and qualitative data.

**Results:** The bivariate analysis showed that the creation of healthy habits and environmental improvements were associated with the central components of intersectoral partnerships. The content analysis presented steps to elaborate the actions and arrive at the results from the central elements. Integration of the results explained how the results related to the actions were elaborated, considering the central elements of the collaborative processes.

**Conclusions:** Partners negotiate with patients or communities to adhere to the care provided through the collaborative process. However, they recognized that they needed to evaluate the proposed actions regularly.

**Keywords:** Intersectoral collaboration, primary health care, poverty, mixed method.

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## Authors summary

### Why was this study done?

In areas of high social vulnerability, there are gaps in scientific knowledge regarding the development of intersectoral actions for health by professionals in Primary Health Care. Knowing the constitutive elements of partnerships that make up positive health outcomes is essential to serve as a model for implementing intersectoral collaborations in similar areas.

### What did the researchers do and find?

A mixed method of sequential type research was applied. Of the managers of Basic Health Units (BHU), 60.9% answered an online form indicating to the BHU that there are intersectoral actions and their respective constitutive elements and positive results. Then, the focus group technique was applied in four UBS with the participation of 26 health professionals until saturation. Finally, we integrate quantitative and qualitative data. It was found that the incorporation of leaders who inspire trust and inclusion was constitutive that was associated with all the positive results studied, that professionals sought to solve a set of health problems related to social vulnerabilities with a set of specific partnerships, and that fragility in the evaluation of actions can make partnerships unsustainable.

### What do these findings mean?

Health professionals can add constitutive elements of intersectoral partnerships to achieve positive health outcomes. The incorporation of leaders is an essential element for achieving positive health outcomes. There is a need to aggregate assessments of intersectoral actions to maintain partnerships and health outcomes.

## INTRODUCTION

Several factors influence the health of a population, many of which are beyond its scope. In partnership with other sectors, we can better address the underlying causes of the conditions that create health disparities<sup>1,2</sup>. Investment in time and funding to develop connections should not be underestimated<sup>3</sup>, and partnerships must be adequate to justify the time and resources used in these actions<sup>4</sup>.

Poverty areas are complex and difficult to study owing to the numerous geographic and social barriers. In these areas, transmissible and noncommunicable health problems coexist. In addition, people suffer violence and lack public power, which highlights the importance of intersectoral actions to face these adversities<sup>5</sup>. Studies on intersectionality in vulnerable areas in large Brazilian cities have reported and analyzed actions developed by health professionals<sup>6,7</sup> and the difficulties in establishing these actions as a practice in primary health care (PHC)<sup>8,9</sup>.

An intersectoral project requires different knowledge, skills, and commitments from various sectors or areas of expertise. An essential aspect of intersectionality is the possibility of facing multi-dimensional problems. Therefore, identifying partners and resources in the community that can improve intersectoral actions are responsibilities common to all PHC team members<sup>10</sup>.

The most used definition states that structured intersectoral actions recognize the relationship between parts of the health sector and the health sector itself (intrasectoral) or other sectors (intersectoral), such as education and social assistance. Health results can be achieved more effectively through these connections than through professionals in the industry alone<sup>11</sup>. Health sector professionals recognize the need to cross borders to detect and resolve problems to maintain public health.

The Bergen Model of Collaborative Working (BMCF) provides an analytical and theoretical framework for exploring collaborative partnerships. This can be used as a guide to practice and evaluate partnership processes. Corbin and Mittelmarm performed BMCF with broad applicability. They analyzed the Global Health Promotion Program in a case study that identified factors and processes that promoted or inhibited the production of synergistic results from partners<sup>12</sup>.

Corbin *et al.*<sup>12</sup> used BMCF to analyze research using quantitative, qualitative, and mixed methods. Out of the nine key elements of successful partnerships identified by them, this study adopted the following five to examine the relationship between the results of intersectoral actions for health: a) shared mission with individual objectives, b) a wide range of different sectors, c) incorporation of leaders that inspire confidence and the inclusion of participants in actions, d) building trust between partners, and e) evaluating partnerships for continuous improvement. The elements that were not adopted in this study due to the context and research design<sup>13</sup> are as follows: a) monitor how partners perceive communication and adjust, b) balance formal and informal roles and structures depending on the mission, c) ensure a balance between maintenance and production activities, and d) consider the impact of political, economic, cultural, social, and organizational contexts.

To address health problems in high vulnerability areas, it is necessary to conduct research that can subsidize intersectoral actions and undertake studies that analyze the success of partnerships, which can serve as an example for other locations that need similar actions.

São Paulo is the most populous city on the American continent with 12,038,000 inhabitants. It is the 11th most populated city in the world and has one of the highest densities, 21.24 inhabitants/m<sup>2</sup> (City Mayors Statistics, 2018)<sup>14</sup>. São Paulo has the highest street population in Brazil and is exposed to unfavorable conditions for human life, a situation that requires the expanding and strengthening of intersectoral actions<sup>15</sup>. Another adverse scenario is the resultant mortality from violence and the abusive use of alcohol and other drugs among young people<sup>16</sup>. However, research has pointed out the difficulties in achieving intersectoral actions to deal with violence<sup>17</sup>.

Given that the city is rich in socioeconomic inequalities with unfavorable scenarios, it requires collaborative processes between sectors to improve quality of life and inequity. Furthermore, it is necessary to know the key elements that constitute these processes, their respective results, and their associations to serve as a model for implementing intersectoral collaborations.

In this context, we adopted the following questions based on the study by Akerman *et al.* (2014)<sup>18</sup>, which proposes questions for different types of practices that characterize “IntersectorialityS”: a) What are the most frequent results of intersectoral actions? b) What are the most common elements that make effective intersectoral actions? c) Is there a relationship between the constituent elements of intersectoral actions and the results of PHC? and d) How do the results of intersectoral actions occur?<sup>18</sup>. The results of this research can help unravel the experience and association between the processes of intersectoral action and the results achieved by partnerships in areas of high social vulnerability in a large metropolis.

Fiorati *et al.* (2018)<sup>19</sup> list the successes achieved in intersectoral partnerships. The following are the broad positive health outcomes achieved: a) improved maternal and child health care; b) reduction of infectious diseases and epidemics; c) expanded access to health and education, reducing extreme poverty and hunger; d) reduction of non-communicable diseases; e) control of consumption of alcohol and other drugs; f) health promotion, in particular, improvement of mental and environmental health and basic sanitation in vulnerable regions; g) creation of healthy habits with social groups; and h) increased access to healthcare for vulnerable populations, reducing violence and creating safer areas<sup>19</sup>.

Corbin *et al.* pointed out that as partnerships become stronger over time, their functioning improves, generating even more positive results<sup>20</sup>. However, according to previous studies, partnerships have a high failure rate<sup>12</sup>. Research is required to explore the relationship between collaborative processes and how they affect the results of partnerships<sup>13</sup>. Experimental and field-based evidence is necessary to document how partnerships work and sustain themselves and their impact on public health<sup>21</sup>.

This study aims to explore the relationship between the components of successful intersectoral actions listed by Corbin *et al.*<sup>13</sup> and the positive results of intersectoral actions in areas of high social vulnerability in São Paulo. It also analyzes and describes how the results of these effective actions were developed by the health professionals and managers at BHU.

## METHODS

### Study Design

The range of questions regarding intersectoral actions justifies the need for mixed methods research. Based on Creswell, we used a sequential explanatory strategy with the following representation: QUAN → qual. The explanatory sequential design of the mixed methods involved two-stage research, in which quantitative data were collected before qualitative data<sup>22</sup>. The quantitative data allowed us to identify the BHU that carried out intersectoral actions and the most frequent results of the intersectoral actions. These most common elements make up an effective intersectoral action, and if there is a relationship between the constituent elements of intersectoral actions and the possible results of PHC actions.

After the quantitative data analysis, we collected qualitative data to help explain the quantitative results and

thus understand how the results of intersectoral actions are perceived by the professionals who implement these actions. The BHU of the socio-environmental groupings of health territories (SGHT) of high vulnerability, which has intersectoral actions with a diversity of sectors and a duration of two years or more, was identified in the first phase (quantitative) through online research. Their health professionals were then invited to participate in focus groups in the second (qualitative) phase.

### Research Context

The quality management in primary health care is conducted by diagnosing health territories. The factor analysis for the definition of health and socioeconomic and environmental indicators, followed by the analysis of clusters by homogeneous characteristics (cluster), was conducted by the CEInfo team in São Paulo. At the end of the analysis, the 449 coverage areas (health territories) were grouped into seven homogeneous sets called SGHT<sup>23</sup>.

This study invested 279 BHU coverage areas of SGHT five, six, and seven, which are the most vulnerable in the municipality and have the following characteristics:

1. Cluster five (131 areas) was characterized by income, schooling conditions, and access, was wrong.
2. Cluster six (101 areas) presented characteristics similar to that of cluster five plus difficult access to work.
3. Cluster seven (47 areas) was characterized by the worst socioeconomic and demographic indicators in the city<sup>23</sup>.

The research field was afflicted by yellow fever outbreaks, H1N1 influenza upsurge, and low vaccination coverage, which further increased the workload of professionals and contributed to a lower willingness to participate in this study. In this context, it was necessary to increase the time of data collection, persuade managers over phone calls to participate in the pilot test and the first quantitative phase, and request authorization for professionals to participate in focus groups in the second phase.

### Participants

#### Participants: quantitative phase

As health service managers can creatively articulate resources to overcome everyday problems<sup>24</sup>, they are central actors in the study. All the managers of the 279 BHU in the study areas were requested to answer an online form regarding the existence of intersectoral actions and their respective results and constitutions.

#### Participants: qualitative phase

In the second phase, we invited members of a multi-professional team that performs intersectoral practices directly to participate in the focus groups. Brazil’s Unified Health System recommends that multidisciplinary care be longitudinal, humanized, resolute, and equitable for disease prevention and health promotion actions<sup>10</sup>. It needed the team to look for partnerships to advance their goals.

## Data Collection

The collection period was from February to October 2018. First, a pilot study was conducted to validate the multiple-choice form used in the quantitative phase after the revision. After analyzing the data from the first phase using the method QUAN → qual<sup>22</sup>, we applied the focus group technique<sup>25</sup>.

## Quantitative Phase: Pilot Test

The researchers developed a multiple-choice form to be filled online that was divided into four parts. The first part was related to the components of BHU types. The second aimed to identify the partnerships made by the BHU for intersectoral actions. The third part pointed to the results, such as improved monitoring of pregnant women, reduction of communicable diseases, control of drug abuse, environmental improvements, and creation of healthy habits compatible with the purpose of expanded PHC. The fourth part was based on the studies of Corbin *et al.*<sup>13</sup> that foresee five constituent elements of collaborative processes.

The form was analyzed for face and content validity<sup>26</sup>. For face validity, we used the opinions of 29 managers. They answered whether the questions were straightforward, whether the answers covered the characteristics of the BHU, and whether or not there were intersectoral actions. The pilot test participants were SGHT managers, classified from one to four, outside the scope of this research.

The analysis of the pilot test led to an additional answer option in the first part of the form and the alteration of existing statements in the second, third, and fourth parts of the survey form. For content validity, using SMART PLS software, the composite reliability (CR) was calculated to be > 0.7, and the external variance inflation factor (VIF) ranged from 1 to 3.2. The CR is a more robust indicator of precision compared to the alpha coefficient<sup>27</sup> and collinearity statistics. The internal and external VIF detected a situation of multicollinearity in the research form.

## Quantitative Phase: Search form

The managers who agreed to participate in the survey clicked on the link, entered a contact email, read the free and informed consent form, and answered the questions online. The form contained six questions about the types of BHU and their composition. A five-point Likert scale (1 = strongly agree, 5 = strongly disagree)<sup>28</sup> was used to assess the degree of agreement of the managers with 11 statements: three on the practice of intrasectoral actions and eight on intersectoral practice, in addition to identifying the relationship between positive results in PHC and elements that constitute intersectoral actions in vulnerable socio-environmental clusters in health territories.

The response options for the Likert type were dichotomized for the analysis. Thus, a “yes” statement was established for those who responded “agree,” “strongly agree,” or “I do not agree or disagree” and a “no” statement for those who responded “disagree” or “strongly disagree,” in order to strengthen the quantitative results.

## Qualitative phase: Focus groups

At the end of the quantitative phase, intersectoral actions and focus groups were carried out in each of the four selected BHU that agreed to participate in the research without hindering the flow of service to the population. Each group started with each member’s presentation in order to establish a good relationship.

We chose the focus group technique to allow interaction, deepening the theme and debate on the question, “How do you do intersectoral actions for health?” This question guided the discussion. When necessary, the researcher requested clarification and directed the focus of the discussion<sup>25</sup>.

In the focus groups, all aspects regarding the performance of professionals were observed without affecting their daily activities. The researcher introduced herself as an emergency service manager in the city center, discussed the research objectives, explained the dynamics of the proposed technique, asked for authorization to connect the audiovisual equipment, and made notes in a field diary during discussions.

## Ethical Aspects of the Research

After approval of the research project by the Research Ethics Committee with Human Beings of the ABC Medical School (Presentation Certificate for Ethical Appreciation, PCEA: 56379615.5.0000.0082) and the São Paulo Municipal Health Secretariat (PCEA: 73401317.8.3001.0086), the managers received online research forms released by the Health Secretariat under the Health Coordination and Technical Supervisions.

## Data analysis

### Data analysis: quantitative phase

We performed bivariate analyses to verify the association between the constituent elements proposed by Corbin *et al.*<sup>13</sup> with the possible positive results of intersectoral actions<sup>19</sup>. Descriptive statistics, including frequencies and percentages, were used to analyze the questionnaire data using SPSS version 25 statistics, and a nonparametric test (Pearson’s chi-square) was performed. Statistical significance was set at  $P < 0.05$ . The 95% confidence interval (CI) and the phi coefficient ( $\phi$ ) were also calculated. The Phi coefficient for  $2 \times 2$  tables evaluated the effect size of the nonparametric test; values close to 10, 30, and 50 correspond to small, medium, and significant effects, respectively<sup>29</sup>.

### Data analysis: qualitative phase

The literal audio transcripts were submitted for comment and approval by the survey participants, totaling 193 min of narrative. Based on Van Den Hoonaard’s premise<sup>25</sup> that research participants are experts on themselves and that their answers may present new perspectives of knowledge, we followed the three steps of Van den Hoonaard’s qualitative analysis:

- a. Open codification of transcriptions
- b. Identification of recurrent themes and their subthemes
- c. Connection of themes and concepts interpreted in the light of social processes

### Articulation of quantitative and qualitative data

Quantitative and qualitative analyses were integrated to promote data and methodological triangulation, which are summarized in the results section.

## RESULTS

Out of the 191 online forms answered, four managers did not want to participate and 17 answered the form twice. Consequently, 170 forms were analyzed, corresponding to 60.9% of the BHU managers of the social and environmental groupings in high vulnerability health territories. Thus, of the 279 BHU, 60.9% participated.

Of the 10 BHU invited to participate in the focus groups, four were accepted. A single focus group was performed for each BHU that consisted of four to nine participants, of whom only two were male. They included the following professional categories: eight community health agents (CHA), five nurses, four nursing technicians, one psychologist, one physiotherapist, a doctor, two managers, a pharmacist, and two administrative assistants.

### Phase One: Quantitative

Bivariate analyses showed that the creation of healthy habits and environmental improvements may have resulted from intersectoral partnerships best identified by managers. The results for the participants were 78.9% (CI = 0.143–0.413) and 68.9% (CI = 0.223–0.491), associated with a wide range of sector participation, respectively. The constitutive element “the incorporation of leadership that inspires trust and inclusion” was also related to these two results: 78.9% (CI = 0.223 – 0.491) and 72.5% (CI = 0.186 – 0.502). These better-pointed positive results were also associated with “the evaluation of partnerships for continuous improvement” (75.0%) (CI = 0.109 – 0.411) and (68.8%) (CI = 0.102 – 0.407) and “shared mission aligned with individual objectives” (79.3%) (CI = 0.309 – 0.596) and (68.6%) (CI = 0.130 – 0.431). These associations were statistically significant ( $P < 0.01$ ) (table 1).

The bivariate analysis of the data also indicated that the control of abusive use of alcohol and other drugs was statistically associated with the following elements that make up the partnerships: broad participation of the sectors (31.1%) ( $p = 0.04$ ) and incorporation of leaders inspiring in intersectoral partnerships (30.3%) ( $p = 0.02$ ). The following elements were associated with the reduction of communicable diseases: professionals incorporated leadership that inspired trust and inclusion (58.9%) ( $p = 0.00$ ), the shared mission aligned with individual objectives (54.5%) ( $p = 0.01$ ), and building trust between partners (54.8%) ( $p = 0.05$ ) (table 1).

The participants pointed out that the central element – professionals who incorporate leadership that inspires confidence and inclusion – was the most statistically associated with positive results. This element was associated with improved monitoring of pregnant women 72.5% (CI = 0.029 – 0.353), reduction of communicable diseases 58.9% (CI = 0.065 – 0.370), control of alcohol and other drug abuse 30.3 % (CI = 0.026 – 0.288), environmental improvements 72.5% (CI = 0.186 – 0.502), and creation of healthy habits 78.9% (CI = 0.223 – 0.491). These associations were statistically significant ( $p < 0.01$ ).

According to the participants, the positive results of the most frequent intersectoral actions were improving the environment and creating healthy habits. The analyzed data indicate that the constituent elements of intersectoral actions and the positive results of PHC are related, the most vital being the relationship between a shared mission aligned with individual goals and the creation of healthy habits (phi coefficient ( $\phi$ ) = 44.6).

(see Table 1 on the next page)

### Phase Two: Qualitative

The researcher who led the fragile housing focus groups observed a few cars on the streets, many people waiting for public transport, poor sanitation, tangled power lines, and posters on BHU walls appealing for disease prevention or health promotion.

The focus groups were representative and relevant to the research as 26 professionals, with an average of 4.8 years of experience at BHU, from eight professional categories participated in them and carried out intersectoral actions. There were no dropouts or individual refusals to participate in the focus groups and the actions. In the fourth group, we identified theoretical saturation<sup>25</sup> (Van den Hoonaard, 2018) as the statements were repeated.

The focus group participants reported one to five results of actions with other sectors developed with the constituent elements. Positive results were related to health promotion, disease prevention, early diagnosis, treatment, harm reduction, and social determinants of health. These results were for individuals or communities, and the health professionals who took the initiative to develop intersectoral actions were medium-level professionals: CHA and nursing technicians. In different focus groups, nurses appeared as leaders of intersectoral actions.

The following themes emerged from the analysis of the focus groups as per BMCF theory related to the study results of the partnerships of intersectoral practices in the researched health territories:

### Theme 1: Search for unique partnerships for intersectoral actions

Health professionals recognized performance limits.

This theme indicates the motivation of health professionals to seek inter-sectoral partnerships. First, they identify problems that they consider challenging so that they can look elsewhere to collaborate to expand their operations and solve the problem.

Research participants reported the active search for children and adolescents with late vaccination, a fact that makes the health sector seek preventive actions against human papillomavirus (HPV) and meningitis, in addition to timely treatment of tuberculosis. It was thus possible to carry out intersectoral actions to reduce communicable diseases, as long as the mission was shared and aligned with the objectives.

*“This week, we went to schools to see which children and teenagers were vaccinated against HPV and meningitis and which need to receive these*

**Table 1:** Results and central components of intersectoral actions in high vulnerability areas

| Constituent elements | Positive results |           |        |               |           |        |           |       |               |           |        |               |           |        |               |
|----------------------|------------------|-----------|--------|---------------|-----------|--------|-----------|-------|---------------|-----------|--------|---------------|-----------|--------|---------------|
|                      | IMP91 (%)        | X2 φ      | 95% IC | RCD92 (%)     | X2 φ      | 95% IC | CAD93 (%) | X2 φ  | 95% IC        | EI94 (%)  | X2 φ   | 95% IC (%)    | CH95 (%)  | X2 φ   | 95% IC        |
| SM101                | Yes              | 84 (69.4) | 2.339  | -0.048-0.261  | 66 (54.5) | 5.501  | 34 (28.1) | 2.598 | 0.059-0.333** | 83 (68.6) | 12.922 | 0.130-0.431** | 96 (79.3) | 33.818 | 0.309-0.596** |
|                      | No               | 28 (57.1) |        |               | 17 (34.7) |        | 8 (16.3)  |       |               | 19 (38.8) |        |               | 16 (32.7) |        |               |
| WR102                | Yes              | 61 (67.8) | 0.306  | -0.107-0.187  | 45 (50)   | 0.106  | 28 (31.1) | 4.218 | -0.118-0.183  | 62 (68.9) | 6.296  | 0.054-0.334** | 71 (78.9) | 14.394 | 0.143-0.413** |
|                      | No               | 51 (63.8) |        |               | 38 (47.5) |        | 14 (17.5) |       |               | 40 (50.0) |        |               | 41 (51.3) |        |               |
| PI103                | Yes              | 79 (72.5) | 5.877  | 0.029-0.353** | 62 (58.9) | 7.893  | 33 (30.3) | 5.065 | 0.065-0.370** | 79 (72.5) | 19.704 | 0.186-0.502** | 86 (78.9) | 22.898 | 0.223-0.491** |
|                      | No               | 33 (54.1) |        |               | 21 (34.4) |        | 9 (14.8)  |       |               | 23 (37.7) |        |               | 26 (42.6) |        |               |
| BT104                | Yes              | 73 (70.2) | 2.214  | -0.061-0.277  | 57 (54.8) | 3.839  | 30 (28.8) | 2.469 | 0.004-0.294*  | 71 (68.3) | 7.632  | 0.064-0.374** | 82 (78.8) | 20.029 | 0.215-0.484** |
|                      | No               | 39 (59.1) |        |               | 26 (39.4) |        | 12 (18.2) |       |               | 31 (47.0) |        |               | 30 (45.5) |        |               |
| EP105                | Yes              | 78 (69.6) | 2.065  | -0.053-0.273  | 60 (53.6) | 2.962  | 32 (28.6) | 2.637 | -0.008-0.284  | 77 (68.8) | 10.472 | 0.102-0.407** | 84 (75.0) | 12.141 | 0.109-0.411** |
|                      | No               | 34 (58.6) |        |               | 23 (39.7) |        | 10 (17.2) |       |               | 25 (43.1) |        |               | 25 (48.3) |        |               |

| Subtitle | Constituent elements  | Constituent elements | Positive elements | Positive results                          |
|----------|---|----------------------|-------------------|---|
| SM101    | Shared mission aligned with individual goals                  | BT104                | CAD93             | Improved the monitoring of pregnant women |
| WR102    | Wide range of participation from various sectors              | EP105                | EI94              | RCD92                                     |
| PI103    | Incorporate leadership that inspires confidence and inclusion |                      | CH95              | Reduced communicable diseases             |

X<sup>2</sup> Test Chi-square Pearson; φ Phi coefficient; \* p <=0.05; \*\* p <=0.01

vaccines. School teachers sent parents authorization for vaccination. Children and adolescents are immunized with delayed vaccination.” (Focus Group 1)

“We have many cases [of tuberculosis], and these cases are frequently appearing. A case arose, and then another case arose, so we investigated it for a specific company that worked in a particular location. I do not know how the production was there, but that company had no window. There we found a [confirmed case of tuberculosis], we found two that we talked to, they [the businessmen] allowed us to give lectures, and two more cases were discovered here, after that, five more were discovered and treated.” (Focus Group 2)

Thus, health professionals identify possible partners when identifying health problems, recognizing their performance limits, and the potential for joint action with other sectors, as seen in the following categories.

### Different problems for singular partnerships

This theme indicates that different problems encourage health professionals to seek a unique set of intersectoral collaborations. The details of health problems indicate the partners to be called. An example is a reduction in the waiting line for mental healthcare. The team looked into the territory and identified resources that could help expand mental health care.

“We look for partnerships, and we ask, in addition to the medical consultation, what other forms of care did we have to offer this patient? So, I [the service manager], the social worker, and Tânia [the pharmacist] searched all over the territory to find out if they were important places to think about leisure. We were able to insert these people, some possible then, in the sports center (...) in our territory, which is managed by the city. We could think of other actions that could be involved, so the CAPS came in with the most acute situations, that the social service for the issue of benefits, so what we could not solve here internally we asked for support from CRAS [Reference Center for Social Assistance], went to CREAS, had much abandonment. This patient needed a legal endorsement and the fan ‘PN’s offer, a Natural Practices Center that gave us much support.” (Focus Group 3)

For example, a group of health professionals incorporated leadership that created and inspired confidence and inclusion to solve the problem of patients on the waiting list for mental health care. They sought a wide range of participation from different sectors, shared their missions, and aligned their objectives.

### Theme 2: Negotiation with patients and partner

“Who do I accept?”

This theme indicates that intersectoral actions taken by health professionals are sometimes accepted and rejected by patients. To achieve success in well-being,

proposals from patients benefiting from these actions must be considered.

“... an 82-year-old lady lives alone. She likes to talk. One day, she refused to join the elderly group. She said the group is not for her ... We have to fit the profile she wants. It is not she who has to fit the profile for the elderly ... We seek help from the community. Now she wants to play bingo with the neighbors who are taking care of her.” (Focus Group 3)

“...Our APA [Environmental Promotion Agent] goes to the Elderly Living Center and explains how to deliver cooking oil and batteries at UBS. He talks about composting and how to make a vegetable garden at home ... and they [the elderly] like it ... did you know that Dona Antônia [fictitious name] brought cabbage that she planted in the yard? Is it very good ... Planning? To sit all together? It does not happen ... We do as needed ... what the elderly asks.” (Focus Group)

In addition to these sectors, the community can partner in health promotion and assistance. In this context, environmental improvements and the creation of healthy habits were possible with the adherence of the elderly to the appropriate destination of waste that could contaminate the soil, and the construction of a vegetable garden and compost at home. In this context, a pregnant woman with a history of drug addiction improved the monitoring of pregnancy and adherence to treatment after being sent to a set of intersectoral actions.

“... it was her fourth delivery, her fourth pregnancy. All other children were sheltered in orphanages because she could not maintain them. She got pregnant using drugs and alcohol, said the mother (...) When she arrived at our unit, all the work was done at CAPS and social work. I know we did a wonderful job that managed to reduce her damage at the time of pregnancy greatly. She adhered to prenatal care, managed to make harm reduction, the use of drugs and alcohol stopped until the end of pregnancy, and the child was born in perfect condition. She managed to breastfeed, a case in which we used much support.” (Focus Group 3)

### Deconstruction of barriers to the collaborative process

This theme was identified in reports on partnerships to instruct BHU professionals to cope with psychological distress. The team gained continuous education by qualifying the care of a person with psychological distress. They acknowledged that negotiation between partners began with the acceptance of networked care and partnerships for the care of patients with mental health problems. Negotiation involves demystifying the treated person, sharing the mission, and encouraging reception in spaces beyond the health sector. Thus, patients gained other forms of care, left a waiting line, and were included in leisure and education actions involved in specialized and innovative care for psychological distress.

“...and so, we had to deconstruct several barriers, first that the mental health patient is not an easy patient, that everyone picks and hugs, puts in and mixes with everyone else and understands that it is a natural process because it is not, so there was much talk with these partners, making it clear to them that they understood that many of the same prejudice issues, the style they had about those patients and that they were ours, took the same transport, used the same; finally free market like everyone else, entered the same market.” (Focus Group 4)

“...and so, we searched within the courses of those offered so that the team could qualify right for this care, and we seek these alternatives. At first, we welcomed these patients and studied each of them with the help of CAPS, and from this welcome, this listening, this look, we saw what you would do, working in a group, bringing partnership within the unit. Going to her when it was impossible, the CEU [Unified Educational Center] also gave us a place, right, the CEU Aricanduva a place for a person who needed a more punctual situation.” (Focus Group 3)

### Theme 3: Partnership Self-Assessment

“Our work is very good!”

Intersectoral actions did not go through the evaluation of the research participants, and now, in the focus groups, the research participants recognized that they delivered positive results for the population’s health. Below, the descriptions reflect the lack of self-assessment of partnerships and the joy of benefiting, for example, learning group crafts in the church.

“Wow! our work is very good, right? [laughters]. Really people, when we stop to reflect (...) There are a lot of good things. We should do this more often, sit down to tell, discuss ...” (Focus Group 3)

“Yesterday I was radiant, wow this is so simple, I was so happy, radiant because so, is a group that has a name: craft, but that depending on the person a simple action, can make grow satisfaction feeling, there may be good for a financial area of this person, as well as it can be maybe good for me ...” (Focus Group 3)

“Through the history of unity health with all the transformations that have occurred, have you managed to reach satisfaction? What do you think?” [asks the manager] (Focus group 2)

## DISCUSSION

Through a mixed explanatory study, this research explored the relationship between the constituent elements of the intersectoral partnerships listed by Corbin *et al.* (2018)<sup>20</sup> and the positive results pointed out by the managers of the BHU. It analyzed the experiences of the partnerships developed by the professionals who operate in health territories of high social vulnerability in São Paulo. When integrating these results, we discovered how health professionals perceived the relationship between

the essential components of partnerships and the results of intersectoral actions in areas of high vulnerability.

Intersectoral actions arise from identifying the problems and recognizing the action limits to resolve them. A unique set of partnerships was sought for each health problem associated with socioeconomic vulnerability. Partners are aware of the need for action sharing activities and negotiate with patients or communities to adhere to care. However, they recognized that they needed to evaluate the proposed actions regularly. The following are the integrated quantitative and qualitative data, comparing the positive results with other researches:

### Improved the monitoring of pregnant women

This research found that pregnancies involving high social vulnerability, chemical dependency, and alcoholism motivate health professionals to seek partners. It also found that the constituent elements of intersectoral actions were associated with the incorporation of leadership that inspires trust and inclusion. Longer established and effective local partnerships are more likely to achieve plans and results, such as tobacco prevention and control, maternal and child health, emergency planning, community planning, and evaluation and immunizations<sup>30</sup>.

### Reduced communicable diseases

Data from the TABNET health information system corroborate the reduction in communicable diseases reported by participants. From 2014 to 2018, there were approximately 20% fewer hospitalizations for infectious and parasitic diseases in São Paulo<sup>31</sup>. The integration of qualitative and quantitative data indicates that the effectiveness of intersectoral actions could prevent communicable diseases. The shared mission with objectives, leadership, and trust was incorporated into the collaborative process, providing the effectiveness of the actions. In line with our study, Martin-Misener *et al.*<sup>32</sup> analyzed the results of partnerships through a literature review and found that successful partnerships can bring different benefits to each partner and impact the results for individuals, populations, health professionals, and health systems.

### Controlled alcohol and other drug abuse

Public health policies addressing drug abuse require a series of intersectoral partnerships<sup>33</sup>. With diverse partners, leaders, and professional trust allies, it was possible to verify the control of chemical dependence in this study. The mental health and drug addiction policy of the municipality of São Paulo provides the principle of intersectionality, allowing for gradual and broad success in care<sup>34</sup>. Established intersectoral collaborations are essential assets to achieve the long-term sustainability of an intersectoral project, such as the Healthy Employment project, which offers literacy interventions in mental health and has resulted in psychological well-being and life satisfaction<sup>30</sup>.

### Environmental improvements

Environmental improvements have been linked to the bases of intersectoral partnerships owing to the



implementation of the Environment, Green, and Healthy Program in the city for over ten years. This program proposes the development of integrated agendas between the Municipal Health Secretariat and the Environment Secretariat, in addition to contributing to the reduction of environmental impacts and problematizing and contextualizing intersectoral actions within each health territory<sup>35</sup>.

The effectiveness of this program was evidenced by the qualitative and quantitative data. The proper disposal of garbage and the preparation of home gardens are achievements of partnerships with the local community. An environmental promotion agent was appointed as the local leader that developed partnerships.

### Creation of healthy habits

The bivariate analysis showed a strong association between the creation of healthy habits and all the constituent elements of intersectoral practices (>26%). Creating healthy habits is one of the goals of primary healthcare and health promotion. The research participants emphasized that this can be achieved through partnerships. Jones and Barry (2011) identified the main factors that influence the synergy of partnerships for health promotion and concluded, through quantitative studies, that synergy is based on trust and leadership<sup>36</sup>. In the same vein, Weiss *et al.* (2002) conducted a quantitative study and concluded that the effectiveness of leadership and the efficiency of partnership correlate with obtaining synergy from partners<sup>37</sup>.

### Search Limits

This study has certain limitations. It lacked participants from partners outside the health area and beneficiaries of these partnerships, which suggests the need for further studies that include the participation of professionals working outside the health area and of partners, and citizens benefiting from the actions. Although only managers responded to the online form in this study, the quantitative and qualitative data results converged. The absence of an environmental promotion agent in the focus groups may have weakened the research, but the multi-professional team highlighted its importance in improving the local environment with regard to the partnerships signed.

## CONCLUSION

Primary care professionals in highly vulnerable territories in the Brazilian metropolis, São Paulo, recognize and seek inter-sectoral partnerships to serve people and communities. Bivariate and qualitative analyses and connections of the results indicated that there are generally associations between the central constituent elements of intersectoral actions and the positive results developed in these areas. The creation of healthy habits and environmental improvements resulted from intersectoral partnerships, as pointed out by most managers. They were associated with all central elements that constitute successful partnerships. Incorporating leadership that inspires trust and inclusion was the central element that makes up intersectoral actions and was associated with all the positive results studied.

Identifying problems and recognizing the limits of intersectoral actions are the first steps for health professionals. We identified that these professionals sought to solve a set of health problems related to social vulnerabilities with a single set of partnerships. Partners share activities and negotiate with patients or communities to adhere to the care proposed by the collaborative process. However, they recognized that they needed to evaluate the proposed actions regularly. We also identified that weakness in the evaluation of actions could cause partnerships to be unsustainable.

Health professionals must consider these findings in their intersectoral practices in areas of high vulnerability to strengthen the need to develop effective collaborative processes that include periodic evaluations. It is necessary to think differently, abandon the verticalization pyramids, decentralize, negotiate, change paradigms, and commit and unite for improving quality of life.

### Abbreviations

BHU: Basic Health Unit  
 BMCF: Bergen Model of Collaborative Functioning  
 CAPS: Psychosocial Care Centers  
 CHA: Community Health Agents  
 CREAS: Specialized Referral Center for Social Assistance  
 HPV: Human Papillomaviruses  
 QUAN: quantitative  
 qual: qualitative  
 PHC: Primary Health Care  
 SGHT: Socio-environmental Groupings in Health Territories  
 VIF: Variance Inflation Factor

### Authors' Contributions

The PMB researcher conducted the quantitative interviews and focus groups, as well as the analysis of quantitative data, with the support of the Department of Statistical Analysis of the ABC University Health Center. PMB and ICZG analyzed the qualitative data, integrated the qualitative and quantitative data, and approved the final manuscript.

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### Competing interests

The authors declare no potential conflicts of interest concerning the research, authorship, or publication of this article.

### Consent for publication

We confirm that we have obtained consent to publish and report individual patient data.

### Ethics approval and consent to participate

The study was approved by the Research Ethics Committees of the ABC University Health Center and São Paulo Municipal Secretary of Health. Informed consent was obtained from all the participants for the quantitative as well as the qualitative phases.

### Availability of data and materials

The datasets used and analyzed during the current study can be provided by the corresponding author upon reasonable request.

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## Resumo

**Introdução:** Estudar áreas de alta vulnerabilidade é desafiador, mas pode subsidiar ações intersetoriais para o enfrentamento das desigualdades sociais prevalentes nestas.

**Objetivo:** Esta pesquisa explora a relação entre os constituintes centrais das colaborações intersetoriais e os resultados positivos das ações intersetoriais em áreas de alta vulnerabilidade social em São Paulo, Brasil. Também analisa a percepção dos profissionais das Unidades Básicas de Saúde sobre os resultados relacionados a essas ações.

**Método:** Aplicamos uma triangulação de métodos. A estratégia explicativa sequencial de método misto foi utilizada seguindo os seguintes passos: Primeiramente, aplicamos um formulário online validado por face e conteúdo para gestores de UBS, e 60,7% dos gestores responderam. Utilizou-se o software SPSS Statistic para realizar o teste não paramétrico. Valores de  $p \leq 0,05$  foram considerados estatisticamente significantes. O intervalo de confiança de 95% e o coeficiente Phi também foram calculados. Após identificar as Unidades que realizavam ações intersetoriais com diferentes parceiros, realizamos grupos focais em quatro delas com a participação de 26 profissionais de saúde até a saturação. Por fim, integramos os dados quantitativos e qualitativos.

**Resultados:** A análise bivariada mostrou que a criação de hábitos saudáveis e melhorias ambientais estiveram associadas aos elementos centrais que constituem as parcerias intersetoriais com significância estatística ( $p \leq 5$ ). A análise de conteúdo apresentou os passos para elaborar as ações e chegar aos resultados a partir dos elementos centrais. Ao integrar os resultados, respondemos como foram elaborados os resultados relacionados às ações, considerando os elementos centrais dos processos colaborativos.

**Conclusão:** Os parceiros intersetoriais negociam com os pacientes ou comunidades a adesão aos cuidados sugeridos pelo processo colaborativo. No entanto, reconhecem que precisam avaliar regularmente as ações propostas.

**Palavras-chave:** colaboração intersetorial, atenção primária à saúde, pobreza, método misto.

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