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Inter-professional collaboration in the 'Health and Prevention in Schools' Project

Maria Socorro de Araújo Dias [1]
Francisca Maria Bezerra Ribeiro Vieira [1]
Lielma Carla Chagas da Silva [2]
Maristela Inês Osawa Vasconcelos [1]
Maria de Fátima Antero Sousa Machado [3]

Abstract *Inter-professional collaboration implies that there is a sharing of activities with a view to meeting a common goal. This theme was analyzed in the 'Health and Prevention in Schools' project (known as PSPE in the Portuguese) as a health promotion device. The aim was to encourage the sharing of ideas and information as well as intersectoral responsibilities and values in adherence to the principles of the National Policy for Health Promotion (PNPS). This was a case study conducted in a medium-sized city, in the northeast of Brazil. Our sources of information came from documents and questionnaires that had been applied to and taken from participants. We used the Inter-professional Collaboration Model designed by D'Amour et al. Based on the dimensions and indicators that were assessed, we identified that the project workers in the PSPE were guided by common goals. We noted that: their planning of actions was not guided by the needs of students, there were few opportunities for members to interact, there was evidence of their having confidence in the ability of others to take on responsibilities, infrastructures were not used properly and the leadership that we studied had little impact. We also noted that there were training processes for members. Our results showed that the level of inter-professional collaboration was at the level of "in development".*

Key words *Cooperative behavior, School health, Intersectoral action, Health promotion*

[1] Centro de Ciências da Saúde, Universidade Estadual Vale do Acaraú. Av. Mauro Célio Rocha 155, Derby. 62042-280 Sobral CE Brasil. socorroad@gmail.com
[2] Universidade Federal do Ceará. Fortaleza CE Brasil.
[3] Programa de Pós-Graduação em Enfermagem, Universidade Regional do Cariri. Crato CE Brasil.

Introduction

Historically speaking in Brazil, education and health policies are developed in their relevant sectors. It is recognized that they occupy two distinct fields and while both have clear social influences they also develop their own sector rules exercising political force amongst themselves and they enjoy a sense of autonomy according to Moreira and Dias[1], from the works of Pierre Bourdier[2].

Considering the relative autonomy that exists in these fields, it is understood that the 1988 Constitution was the impetus for major improvements in health care through the creation of the National Health Service (SUS) and it signaled a change from the old system, meaning greater emphasis on advocating and promoting good general health[3].

Sectoral improvements were registered and publicized in health and education sectors. Based on the intention of developing education and training in health with a view to promoting health, over the last decades, the Health Ministry (MS) has been implementing programs, strategies and policies for various age groups. It has been highlighted that the school environment is an ideal place to implement and execute such actions.

Based on this context, the Health and Prevention in School Project (PSPE) was launched in 2003 by the Ministry of Education (MEC) and the MS, and it was a part of the wider Health Program in Schools (PSE) initiative. It aimed to bring in important actions in relation to sexual health and reproduction. In doing this it took into account: ethnicity, gender and the phenomenon of violence due to the process of change. It also took into account people's social context[4]. The PSPE arose as being a potential strategy for the promotion of intersectoral and inter-professional working with organized civil society groups and schooling communities.

Actions stemming from the PSPE may be developed in defined territories according to those which are covered by the Family Health Strategy (ESF). This allows for collaborative working between health and education and the sharing of their physical resources. This type of working infers the development of politically and socially autonomous subjects aligned to the PNPS objectives.

The importance of the promotion of health education in the production of collective knowledge has been noted and is viewed as a way to empower individuals with a sense of autonomy with their having the requisite knowledge to look after themselves, their family and those that form part of their lives[5].

Developing activities that promote health in schools, considering that this environment is fertile ground for ever present social relations, demands that there be some form of inter-professional collaboration. The term collaboration is polissemic, plural, complex and a term that is in current use. The meaning in our context refers to responding to the work needs of teams in a special way in health care. Concepts such as interdependency, sharing, partnership and the harmonious distribution of power, adds to the meaning of collaboration[6].

The premise of collaboration converges in the expressed outcomes of the PSPE which aimed to develop promotional actions on health and on the prevention of illnesses with the participation and collaboration of various professionals, students and family members. Based on the above, there was frequent usage of the terms empowerment and self-care which would allow for the taking of beneficial decisions on someone's quality of life and health. In this context focus was placed on the prevention of diseases and associated risks since prevention involves acts such as detecting, controlling and weakening risk factors where the emphasis is on the disease and mechanisms for attacking it[7].

For this project there was an alliance with the PNPS where references were made to social participation. All interventions under the project ought to have considered the vision of the different actors and groups in the process of identifying problems and solutions. All should act in a responsible manner in the areas of planning, execution and the evaluation of any actions that were taken[8].

It was noted that the PSPE aligned itself with an understanding of the term Health Promotion which is in current use, as being related to the idea of "multiple accountabilities" since it involves State actions (Public Health Policies), individuals (the development of personal skills), the health system (the changing guidance from the health system) and intersectoral partnerships[7].

Therefore with the aforementioned in mind, ours was to analyze the level of inter-professional collaboration in the PSE in a medium-sized municipality in the northeastern region of Brazil based on the factors and recommended indicators from D'Amour e Oandasan[6].

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Methodology

We used as our case study a medium-sized municipality located in the state of Ceará in north-eastern Brazil. The PSPE was implemented in the municipality in September 2009 and in January 2011 it switched to being a component of the Health Program in Schools (PSE) after the municipality signed the authorization contract.

Basic education in the municipality is made up of pre-school, primary and secondary/ higher education which have various municipal and state programs whose aims are the promotion of health care, culture and social inclusion. One example is the PSPE.

In relation to the composition of the sample of the key-participants in the study, we adopted intentional non-probability sampling, as the researcher was interested in the opinions of a specific part of the population which could not be deemed as a representative sample. This makes its validity relevant in specific contexts[9].

We considered that the number of key-participants would be delimited by the criteria known as theoretical saturation. This conceptual tool was to be used to establish or close the quantitative research on the participants. In this way the theoretical saturation tool used to delimit the participants took place, operationally, with the suspension of the inclusion of new participants when the data that had been obtained was subsequently presented in the researcher's evaluation. Also there was a sense of redundancy or repetition of some data and thus not all was considered relevant when it was collected[10]. It was understood that none of the statements were the same however all had elements in common without additions in the responses.

26 people that were a part of the PSPE participated in the study being: 01 Municipal Coordinator, 05 members of the Municipal manager's group-GGM (from a total of 10), 06 those responsible in the Family Health Centers - CSF (from a total of 18), those responsible in schools (from a total of 36) and 06 young protagonists (from a total of 36)[11]. We used inclusion criteria for those that had been a part of the PSPE for a minimum a year. Using this criteria the participants were selected in a random way.

The data was collected between August and November 2013 and we conducted analysis on the documents and questionnaires that we collected. The two document sources that were used were two development action reports. One was from the state and the other was from the municipality. We looked at the minutes from meetings of the GGM that came out of the PSPE which referred to the two previous years. The idea was to identify the subjects and institutions/sectors that had been involved in the development actions for the PSPE in the municipality. We looked for a description of the activities that had been carried out and an identification of the products and/or results achieved after the implementation of the PSPE.

We took a direct approach with the participants through the use of questionnaires. Open questions were employed that sought to provide identification details (age, length of time in a role and professional qualification/s) and to provide details on the PSPE (actions that were developed, subjects and institutions/sectors that were involved, activities that were carried out, planning, actions that were developed, evaluations, results and sustainability strategies).

In relation to organizing and analyzing the data, this study based its method on the Inter-professional Collaboration Model developed by D'Amour et al.[12], which espouses the Collective Action Theory that is related to organizational sociology and the development of strategic analysis. This model can be used to analyze the levels of collaboration in complex systems with heterogeneous modes of interaction amongst its various actors and it suggested that collective action or inter-professional collaboration can be analyzed based on four dimensions whose operations come from 10 indicators.

Information extracted from primary source document analysis and text produced by participants in questionnaire responses was considered useful for further analysis. We designed a matrix to organize the registers from the four dimensions: "Shared Objectives and vision", "Internalization", "Governance", "Formalization" and the ten related indicators. In filling out the organizational matrix and upon subsequently identifying evidence for the dimensions and indicator's descriptors, we registered and classified the sources of the information (documents or questionnaire).

After having completed the organizational phase, it was necessary to conduct interpretation and analysis of the data with the view to classifying the existing levels of collaboration, in other words, to denote levels that were active (level 3), in development (level 2) or that were potential or latent (level 1). Lastly we put together a Kiviat table that supported the theory which underlined this study and we presented its functions that

would show the level of collaboration that had been developed as a final product amongst the participants in the PSPE.

It is worth reiterating that the study was approved by the Ethics Committee for Research at the Vale State University in Acaraú under report number 69.848.

Results and discussions

The collective participants for this study were young people from the municipal and state schools. It also included: teachers that were a part of the PSPE in schools and nurses that were a part of the PSPE in the ESF. It was an expression of the multi-professionalism for those that were a part of the GGM namely: nurses, pedagogues, social assistants and psychologists.

The results in terms of the four dimensions and the ten indicators of the model are presented here in a schematic form (Graphic 1) which allows for a visualization of the current situation for inter-professional collaboration in the PSPE in a *continuum* from 1 to 3 depending on the levels of collaboration presented below:

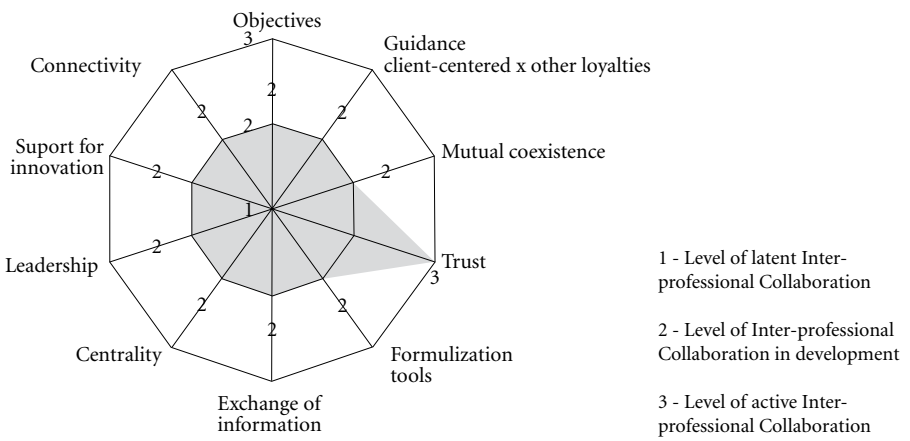
We went back to the guiding principles of the collaboration process through the dimensions: Shared Objectives and Vision, Internalization, Formalization and Governance.

In terms of the Shared Objectives dimension and vision from the objective indicator, those that worked in the PSPE had partial success in the activities that they undertook having worked together to meet common goals which led them to achieve level 2 for inter-professional collaboration. This is evidenced through the following statement given:

The developed activities were related to the terms of the PSPE and involved: drugs, sexuality, teenage pregnancy, violence, gender diversity and the family. We had health care professionals as our partners and allies from the CSF in our territory and they were a part of the GGM. It's a shame that they are not going to work collaboratively in relation to all of PSPE's objectives. (Participant 01)

My main role is to plan and execute actions with the others that work in the PSPE in spite of the difficulties that we found in realizing the project's goals. We encountered difficulties with the education professionals who came on board and clearly understood the majority of the objectives (but not all) in the project. (Participant 11)

The objectives to be reached by the work teams ought to be common and all-encompassing so that they can ensure inter-professional collaboration, however these ideas were not all shared with everybody. D'Amour et al [12] notes that the objective that is most susceptible in obtaining parts that are of interests is the one that promotes client-centered assistance because responding to their needs becomes the central objective. The main issue is whether the objective implies a radical transformation of values and practices and thus their materialization would mean real innovation.



Graphic 1. Infographic of Kiviat- Level of Inter-professional Collaboration in Health and Prevention in Schools Project, in an average sized municipality, CE, 2013.

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Deluiz[13] notes that the culture of this type of professional practice is related to the type of educational processes through which professionals undergo.

In relation to the Shared Objectives dimension and vision from the guiding indicator for being client centered x other-loyalties, it obtained level 2 inter-professional collaboration based on the interest guidance for professionals which can be seen in the following statements:

At my work there is a good take up level both at the school where I work and at the Family Health Center. The teachers design annual plans at the beginning of the school term ensuring that PSPE issues are placed on the agenda. The classes start with activities and content covering the PSPE for the students. The nurses, dentists and psychologists make themselves available which is not necessarily the case for the doctors which in turn harms the work all the others that are involved. (Participant 02)

Today Health and Education work in partnership by completing project actions. In the education team we see teachers that have dedicated themselves to specific thematic questions in the PSPE without harming the school syllabus while there are others that aren't interested in the project issues but just want to use it to further their career prospects. (Participant 06)

In the context of the PSPE their activities should be carried out in accordance with the needs of the teenagers. With a dynamic system, complex care systems for people ought to start from an acquisition of knowledge and competences guided by the convictions of specialists. It should cover inter-subjectivity, interactions and the dynamism of the subjects[14]. Thus overcoming the proposed interdisciplinary boundaries for care goes beyond simple interaction and integration of knowledge. It reflects and broadens the debate concerning the multiple dimensions that involve care which needs to be understood. This is also the case for systems that imply the construction of non-linear networks that cut across different areas of knowledge.

In the Internalization dimension with the indicator of mutual working/living together it was noted that level 2 of inter-professional collaboration was achieved.

The activities carried out in the schools were supported by the presence of important health care professionals such as the following: lecturers, people providing guidance and health care professionals giving prevention and conducting workshops. However there were few times when the professionals interacted amongst themselves. (Participant 05)

Various professionals collaborated and interacted together for every action developed in the PSPE. We developed educational, health and quality of life activities through workshops, round table discussions and other methods. We supported and accompanied educational professionals in activities carried out in schools once per month but with the exception of this meeting we had little opportunities to integrate with each other. (Participant 12)

We can therefore infer, by way of the statements given, that there were few opportunities for the project workers in the PSPE to get to know each other let alone interact together. In accordance with D'Amour et al.[12] studies, the evidence suggests that professionals should get to know each other personally and professionally as they will develop a feeling that they belong to a group in which they intend to obtain success in the formulation of common objectives. Knowing each person in the team on a personal basis means understanding each other's values and everyone's levels of competency. You will also understand the disciplinary picture, how to approach people and everybody's remit.

It is worth bearing in mind that organizations are made up of people that have knowledge and skills. When these are shared they are transformed into organizational learning which results in the accumulation of new knowledge and thus this process drives innovations. The interactions that occur between people, between organizations and between social entities and cultures interfere in a direct way in the process of innovation which results in organizational learning and it strengthens links between all parties[15].

Level 3 of inter-professional collaboration was obtained in relation to the Internalization dimension for the trust indicator.

The Family Health Team of which I'm part, considers the actions developed by professionals in education in the PSPE of major relevance. The support given by the teachers that work in the schools in our territory is very important. It was not easy but we managed to develop a major partnership with the education sector and over time we acquired mutual trust with the teachers in the school which allowed for the transference of knowledge to the teenager users. (Participant 09)

The nurses from the PSF that stay in the same borough as the school that also worked as good collaborative professionals. (Participant 02)

It is easy to see through the opinions expressed that there was trust in the professional

capacity in some professionals assuming certain responsibilities. The study collaborates this finding. This occurs when there is trust in the competences and capacities of the professionals to assume the responsibilities of other. Confidence and trust reduces uncertainty. When there is a lot of uncertainty professionals tend to monopolize responsibilities in relation to their clients to maximize time and they avoid collaboration. Such acts go against the goal of building networks. Professional should use the results from collaborative working to evaluate others and build confidence and trust[12].

Team working allows for connections to be made between different work processes. This is done through meetings between professionals which brings with it major interpersonal relations with integrated teams. This in turn encourages discussions and the expression of knowledge and finally better health services are produced. This team is the coming together of different agents and the integration of work[16]. A construction of a consensus in relation to the objectives and the results to be achieved occurs in teams composed of professionals.

With reference to the Formalization dimension with the indicator tool for formalization, the analyzed PSPE reached level 2 for inter-professional collaboration.

Authorization was given for the commencement of the PSPE in our municipality and then we developed our activities in accordance with the Health and Education Ministry's proposals. However the authorization left us with doubts in relation to some aspects. (Participant 03)

There is an official document that was drafted by the municipal's public bodies that describes the components and the respective functions of the PSE since it was created and this guided the development of our actions. However sometimes a professional would leave and would be substituted by another and thus the document would not be updated. This occurs with the GTI but there is no replacement which makes it look as though it is constantly in construction and is never ready. (Participant 19)

This relates to official directive Number 03 of the 22 of September 2010 that provided guidance on the implementation of PSPE and it designated the components for the Municipal Management Group in relation to Projects.

According to the statements from the subjects and the accompanying documents, it is possible to see that the formal agreements in this dimension with reference to the PSPE were not consensual and were still in the process of negotiations and constructions. D'Amour et al.[12] state that formalization is an important means to clarify and negotiate responsibilities of the various partnerships which is a shared action.

These official inter-ministry directives are important regulatory instruments that regulate policies and they define the instructions needed to ratify laws, decrees and regulations approved by the legislature under the 1988 Federal Constitution[17].

With reference to the Formalization dimension for the indicator of Exchanging Information, inter-professional collaboration that was developed between the project workers in the PSPE reached level 2.

Workshops and lectures take place on various themes related to the PSPE for the project's target-audience and based on what was agreed. They should occur every fifteen days, but it doesn't always happen. (Participant 04)

The PSPE has a calendar of monthly meetings with the GGM and it has a program of activities to be developed by the team. However even though communications have improved it is still not possible to see the feedback of information between those involved in the project because it does not occur in any ideal way. This is because they do not know very well the people with they work. (Participant 08)

Related to the statements the Intersectoral Working Group (GTI) developed, from the Health Program for Schools, an instructions manual for this program with the objectives and directives in mind. It was connected to the Family Health Center and school and it provided suggestions for action schedules.

A guide was used to optimize the flux of communication between PSPE managers, however those in this study noted that the socialization of information was not usual and they were unaware of the guide that was approved by the GTI. According to those that provided the guidance there was an exchange of information and communication which refers to the existence of the guides. It was used as part of an information infrastructure to allow information to be exchanged quickly between all necessary parties[12].

Rowley[18] stated that information systems have been developed to optimize the flux of information that is relevant in organizations. This can trigger off knowledge processes and the taking of decisions as well as interventions in given realities. A consensus exists that information systems should be strategic and they should help organizations reach their objectives.

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With reference to the Governance dimension for the indicator Centrality, level 2 inter-professional collaboration was obtained after analyzing the documents in the public domain. There was no implementation of adequate structures for the development of actions carried out inside of the PSPE. Centrality relates to the existence of one clear direction where actions are guided through collaborative working. The data showed the importance of the involvement of some key managers in providing clear direction and establishing a strategic and political role to promote the implementation of collaborative processes and structures. The managers can exercise significant influence over inter-organizational collaboration, formalized through agreements to make the collaboration official.

The municipality already had experience with the Love Life Project. The PSPE aimed to widen this project and provide structure to our work. Meetings with school directors and health representatives were held with a view to giving clarity on training in relation to certain proposed themes. However thought was given to the creation of infrastructure for the PSPE to improve the actions for the PSPE. This was viewed as an omission on the part of the public managers in the three spheres when they created the laws referring to the project (Participant 13)

The benefits of the implemented PSPE is undeniable in our municipality, but there are elements that make it difficult to carry out some proposed project activities such as a lack of space, pedagogical material and tools used in schools. This does not stimulate human resources to take action to support the coordination of the PSPE and to maintain intersectoral participation. It also shows that there is a bad definition of the political role of public sector managers. (Participant 18)

In order for the actions for the team of municipal managers to be effective they ought to include the following: a diagnosis of the local reality and an identification of priority actions that are being carried out (situation analysis), an identification of relevant partners in the execution of sustainability actions, the implementation of mobilization strategies in the school communities and their partners, defining a shared agenda between health, education and the other partners and an all-encompassing definition of proposed actions. Other measures include: an identification of technical, human and financial resources that will be necessary and that will be available for the execution of actions, a definition of shared responsibilities including times when people are available for professional training, an identification of physical space, infrastructure and the production of support material, defining mechanisms and evaluation indicators and elaborating ways to monitor actions. Finally there should be the creation and implementation of publication strategies concerning the results that are achieved in specific steps during the implementation of the project[4].

With reference to the Governance dimension and the indicator of Leadership, level 2 inter-professional collaboration was reached based on the following register:

The Municipal Coordinators for the project made a point of interacting with us and we all had the right to speak and give our opinions. It was not important who we were or what role we had but unfortunately when deadlines were given for the carrying out of activities, people didn't comply with them. (Participant 22)

The project coordinators try to work tirelessly but they cannot always rely on the collaboration and interaction/engagement between the education and health professionals. Some object to doing certain activities. They also do not stick to deadlines for participating in events amongst themselves. (Participant 23)

Leadership presupposes the ability to motivate those that are being led in an ethical manner. The statements showed that leadership was present in the current PSPE. It was the fragmented type that had little impact and was characterized as level 2. D'Amour et al.[12] affirms that local leadership is necessary for the development of inter-professional and inter-organizational collaboration. With reference to collaboration, leadership can be exercised by managers that give orders or by professionals that take the initiative. In the last case, leadership is shared by various partners and there can be wide agreements between the parties.

We saw a tendency for authentic leadership and participation with the focus on communication as a means to obtain better results in health. Organizational institutions that have solid leadership are benefited by: an increase in the creation of links, low staff turnover, less conflict, more people involved in the work process and better use of all of the available resources[19].

In relation to the Governance dimension for the Support indicator covering innovation, level 2 for inter-professional collaboration was reached. This could be seen through the following:

I have the opportunity to participate in various talks, workshops and seminars related to health,

with various professionals providing training to those in the PSPE (Participant 20)

Sometimes as a part of the PSPE we received training from well qualified people. Other times people with little commitment and knowledge take on educational activities and commit themselves to the objectives of the project. (Participant 21)

In relation to the aforementioned indicator D'Amour et al.[12] noted in his studies that collaboration brings developments in new activities and divides responsibilities between professionals and institutions. This may mean changes in clinical practices and the sharing of responsibilities between partners.

Based on the statements given and the documents that we read, the following support for innovation was noted. 1. Round table discussions on the prevention of STIs/AIDs with practical demonstrations on how to use contraceptives. There was a presentation of male and female reproductive devices. There was also a distribution of information booklets on STIs/AIDs by health and education professionals. (See the minutes of the GGM meeting in the PSPE) 2. There were workshops covering the use of alcohol and other drugs where people were given the opportunity to share their own stories and participate in group work. This was done in partnership with nurses, psychologists and pedagogues.

Concerning the reissuing of guidance, it is important to consider the prevention dimension which covers the prevention of diseases and the promotion of health. Prevention is a strategy for avoiding the triggering off of specific diseases and thus one controls it and reduces the risks. The promotion of health is an approach used to encourage people[7].

It was noted through the documents that the professionals were given training as a part of the PSPE but many stated that the quality of the education left a lot to be desired based on those that provided the training.

Investment in training the team gave the potential for the creation of a well-balanced team which was an important element in the construction of the project[20].

In terms of the Governance dimension for the connectivity indicator, level 2 was reached for the inter-professional collaboration.

The project workers in health provided health services to the population based on a program schedule and health actions were developed with the team. We established close working relations with ACS in respect of work coordination, supervision, the provision of guidance and the carrying out of development activities. This closeness also included working in given areas in relation to the Health Program in Schools. Many of the meetings dealt with specific questions (Participant 10)

The Family Health Team feels that it is overloaded due to the large number of programs and the responsibilities that it has. Some complained of the lack of collaboration by some professionals in the schools. They also complained about the locations chosen and that the discussion questions in meetings were not sufficiently wide enough to cover key issues (Participant 17)

It was noted that the meetings were for discussions of on specific PSPE project issues. This connectivity refers to individuals and organizations being interconnected and thus there should be places for discussions to take place and for links between people to be made[12].

Having analyzed inter-professional collaboration (both the dimensions and indicators) in the PSPE we concluded that the level of inter-professional collaboration in this project was level 2. This means that this type of collaboration is in the development phase and that collaboration does not form a part of the culture of the organization. Nevertheless it is subject to reevaluation based on internal or external factors. The objects of the negotiation process which had not produced consensus included: the objectives, the relationships between the partners and the governance and formalization mechanisms. Even though negotiations could be partial and a source of conflict, they were open, continuous and accessible.

This type of collaboration results showed that attempts were made to divide responsibilities between the professionals but they were seen as half-hearted attempts that led to inefficient services. For the collaboration level "in development" even though the few initial changes took a while, we saw that clear progress had been made.

Final considerations

New ways of organizing services in health require the development of new knowledge bases and practices based on collaboration. This was the basis of the PNP in highlighting knowledge and the potential use of the experiences from those that work in different sectors. This results in the sharing of ideas and establishing links based on common objectives. It requires there to be a constant spreading of actions and services with the aim of promoting cooperation.

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The inter-professional collaboration developed in the PSPE is level 2 which constitutes the collaboration type that is in development. The project workers are thus able to have partial success in carrying out activities effectively through joint working in pursuit of common objectives. It also means that professionals work pursuing their own interests and not the interests of the teenagers and young people. There were few opportunities for project workers to interact amongst themselves. Confidence and trust was however presence in others who assumed some responsibilities. The formal agreements in project were not consensual and were still in the process of negotiation or construction. The exchange of information was inadequate or not done properly. The public bodies were not implementing structures for the development of actions to be carried out in the PSPE. The leadership in the project was fragmented and had little impact. There were times when training was given however it was noted that the trainers were not always able to provide good training. Lastly the PSPE discussions on specific points were not always far reaching enough to cover critical issues of concern.

In relation to the competences necessary to develop inter-professional collaboration in the actions required for the PSPE, it was noted that organizational skills and the ability to improve structures were necessary. Without these the strategy for promoting health was hampered. The process of the development of competences for the participants in the study can be greatly helped by achieving the maximum level (active) for inter-professional collaboration.

Achieving this level is possible inside of the PSPE but it does require a lot of work. Managers and professionals need to fully understand the concept of collaboration so that health education can improve people's lives. This was the aim of the PSPE; to promote health. It suggested that there is a need for restructuring the training given to professionals that work in education, health and social care. Focused needs to be placed on primary health and more professional education needs to be given to all those involved in the PSPE.

This study is not the final word in this area and other studies should be carried out to widen our understanding in relation to strategies that can be taken to strengthen inter-professional collaboration between project workers in the SPE.

Collaborations

MSA Dias worked on the following areas in this study: developing the initial idea, drafting the article, analyzing and interpreting the data and providing a critical review of the draft. FMBR Vieira worked on the following areas in this study: developing the initial idea, analyzing and interpreting the data and drafting the article. LCC Silva contributed by critically reviewing the draft and drafting the final paper. MIO Vasconcelos worked on the following areas in this study: developing the initial idea, analyzing and interpreting the data, drafting the paper and providing a critical review of the draft. MFAS Machado contributed by critically reviewing the draft and drafting the final paper.

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