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Abstract

Purpose: To present the results of a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis used as part of a process aimed at reorganizing services provided within a paediatric rehabilitation programme (PRP) in Quebec, Canada and to report the perceptions of the members of the planning committee regarding the usefulness of the SWOT in this process.

Method 36 service providers working in the PRP completed a questionnaire as part of the SWOT analysis and reported their perceptions about what worked and what did not work in the existing model of care. Results were used by a planning committee over a 12-month period to assist in the development of a new service delivery model. Committee members provided written responses regarding their perception about the usefulness of the SWOT.

Results Current programme strengths included favourable organizational climate and interdisciplinary work while weaknesses included lack of psychosocial support to families and long waiting times for children. Opportunities included working with community partners, while fear of losing professional autonomy with the new model of service was a threat. The SWOT results helped the planning committee redefine the programme goals and make decisions aimed at improving service coordination. SWOT analysis was judged to be a very useful tool for quality improvement.

Conclusions SWOT analysis appears to be an interesting evaluation tool to promote awareness among service providers regarding the current functioning of a rehabilitation programme. It fosters their active participation in the reorganization of a new service delivery model for paediatric rehabilitation.

Introduction

There has always been a concern to provide quality rehabilitation services to children with disabilities and their families. However, service provision is increasingly challenged by long waiting times and poorly coordinated services [1-5]. Long waiting times are associated with a decline in children's psychosocial well being [3] and are reported as one of the most important elements of dissatisfaction for families of children with physical disabilities [6]. They also negatively influence clinicians' perceptions of the quality of the services they provide [4]. Coordinated care is thought to improve access, provide necessary services and family support, and can contribute to a reduction in waiting times and rehabilitation costs [4,7].

There is a growing literature describing how organizations are dealing with these important issues. For instance, temporary services have been offered to children on a waiting list [8], new interventions thought to be more cost effective are being explored [9], and there is anecdotal evidence that programmes are scrutinizing their current model of service delivery and reorganising their services, partially or completely. Kotter believes that service providers, as well as people with some power of authority to lead the change, should be involved in service reorganization because the chances of success are greater in participatory approaches where people concerned by an organizational transformation work together [10]. Service providers should contribute to the initiation of the project, the diagnosis of the situation, the planning improvements and the implementation of the change. The use of specific strategies or tools may be helpful to support this participatory process.

Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis is reported to be a useful planning tool for situational analysis, for programme evaluation and for quality improvement [11-13]. SWOT analysis allows one to collect and analyse a great quantity of information about the strengths, weaknesses, opportunities and threats of a programme. It was originally developed for change management in business planning, but it is an easy tool that can adapted for use in many different situations [13-15]. SWOT analysis has been used in the medical field for programme development and strategic planning, for documenting service organization, to improve models of care and to assess the readiness for implementing new models of care [12,13,15-18]. An analysis can be completed solely by a programme manager but, when employed with multiple stakeholders, a SWOT analysis is well suited for participatory evaluation because it is based on actors' perceptions and can contribute to participants' awareness and empowerment, facilitating the development of commonly shared organizational goals [19]. Stakeholders' perceptions can be obtained formally or informally, using different techniques of data collection such as questionnaires or focus group discussions. By having service providers identify the strengths, weaknesses, opportunities and threats of their current service delivery model, they can better analyse the situation and identify the future directions needed to successfully improve the quality of the care they provide.

Four studies were found using SWOT analysis in the context of rehabilitation. Min-Yuan and al. used it to develop an assistive bathing device based on the strengths, weaknesses, opportunities and threats of the device for a person with hemiplegia [20]. They concluded that the SWOT analysis method can help define the user's needs, the characteristics of the assistive device and the environmental conditions required to foster independence. Sharma used the SWOT analysis

to analyse literature on evaluations of community-based rehabilitation programmes [21]. He reported that many evaluations were conducted in community settings and many novel data collection techniques were used, both perceived as strengths in the context of his study. The lack of consistency in outcome measures and the lack of cost benefit analysis were seen as weaknesses. Others have used SWOT analysis to conduct participatory evaluations of specific community-based rehabilitation programmes in Vietnam and Australia [22,23]. In Vietnam, the SWOT revealed that one of the programme's strength was that it helped change people's attitude toward persons with disabilities, but the need for more training of rehabilitation workers was perceived as a weakness. The need to enhance participation of all members within the programme was an opportunity and funding issues were seen as threats [22]. Results of the programme evaluation in Australia were somewhat different and included the strong focus on the community (strength), the need for stronger partnerships with government departments (weakness), the knowledge and skills of people involved in the programme (opportunities) and the lack of formal communication systems and procedures (threat) [23]. Both studies described how the SWOT were performed (focus group in Vietnam and analysis of documents in Australia) and presented the results, but neither reported how the results were used in a process aimed at quality improvement. Instead, authors provided the following general remarks: the 'programme would benefit by consolidating on the positive aspects in years to come' [22] and the SWOT analysis was 'informative for the service and other stakeholders' [23].

To our knowledge, SWOT analysis has never been used to help reorganize paediatric rehabilitation services to foster quality improvement. The perception of clinicians regarding the usefulness of this tool has also never been reported. The goals of this paper are thus to: 1) present

the results of a SWOT analysis in the context of a reorganization of paediatric rehabilitation services; 2) describe how SWOT results were used to help develop a new model of paediatric rehabilitation service delivery; and 3) report the usefulness of the tool as perceived by members of a planning committee involved in service reorganization.

Method

Setting and background

The methods described here were used within the context of a participatory action research [24] aimed at documenting the reorganization of the Paediatric Rehabilitation Programme (PRP), one of six programmes of the Estrie Rehabilitation Center located in the Eastern Townships, a rural region of Quebec, Canada. Each year, the PRP provides out-patient services to approximately 800 families of children aged 0-18 years living in the area. Children with different diagnoses are treated within five sub programmes: developmental delay (e.g. various syndromes), dyspraxia (e.g. developmental coordination disorders), motor (e.g. cerebral palsy), speech and language (e.g. language disorders) and teenagers (e.g. children with mixed diagnoses attending high school). An interdisciplinary rehabilitation team provides services mainly on an individual basis, either at the main centre located in Sherbrooke or at one of the seven regional sites, or in the child's community. Each year, many children register with the PRP to receive services, but due to limited resources their names are added to a waiting list. In March 2007, 448 children were waiting for services and their names had been on the list for several weeks, or for some, as long as three years, depending on their diagnosis, age and place of residence [25].

Since 2003, the PRP has been exploring ways to reduce waiting times while improving service quality. For example, a consultation service for children on the waiting list was developed (e.g. children and families seen once and provided with advice) and attempts were made to include children on the waiting list in group therapy activities. In 2005, limited accessibility to rehabilitation services however remained an issue. Service providers and managers of the PRP, in conjunction with the center's director, decided then to completely reorganize their service delivery model. A planning committee was formed to develop and to oversee the implementation of the new service delivery model. It was composed of a representative from each of the programme's disciplines, the two PRP clinical coordinators, the programme head, a research coordinator and an organizational development counsellor. Funds from the Quebec Ministry of Health and Social Services were obtained to proceed with the following changes to the programme: 1) revision of admission procedure; 2) improvement in the follow-up; 3) development of more structured community interventions; 4) development of an annual calendar of recurring group activities; and 5) development of criteria and guidelines for individual therapies. In April 2006, the PRP decided to conduct a SWOT analysis prior to embarking on the reorganization of services.

Procedure and analysis

A questionnaire with four open-ended questions was developed incorporating the four dimensions typically included in a SWOT analysis: questions about the strengths, weaknesses, opportunities and threats of a specific programme. The specific questions (translated from French) used in this study are listed below.

Strengths: What are the current strengths of the PRP (regarding service delivery, type of services, admission and interpersonal relationships, etc.)?

Weaknesses: What are the current weaknesses of the PRP (regarding service delivery, type of services, admission and interpersonal relationships, etc.)?

Opportunities: What are the current opportunities for development or improvement in the PRP (regarding service delivery, type of services, admission and interpersonal relationships, etc.)?

Threats: What are the threats (for you or the organization) with regards to the new model of services?

During a monthly programme meeting in April 2006, the SWOT questionnaire was administered to the service providers who were all well informed of the general aim of the service reorganization project which, at the time, was to reduce waiting times. There were 43 service providers (7 special educators, 13 occupational therapists, 7 physiotherapists, 5 socials workers/psychologists and 11 speech and language pathologists) working within the PRP and the majority had been working there for over 15 years. They were asked to provide as many responses as possible for each SWOT category. They were told that each comment would be examined and considered by the planning committee members.

A clinical coordinator of the planning committee compiled the results in the following manner. A code was assigned to each response listed by the service providers that enabled regrouping of the responses into sub-themes within the four SWOT categories. Sub-themes were agreed upon during discussions with the planning committee members. Frequencies of responses (e.g. number of clinicians listing a particular sub-theme within a category) were then calculated.

Over the year following the SWOT analysis, the planning committee members met weekly to plan the reorganization of services. During these meetings, the members consulted the SWOT results to ensure that they would be taken into account while developing the new service model. Participant observation [26], including a participant observation grid, was used to document how

the responses from the SWOT questionnaire were taken into account while making decisions regarding service delivery. The grid consisted of SWOT responses listed in the left-hand column of the document and observations about how they were considered in the reorganization process were subsequently listed on the right.

Finally, at the end of the development stage of the new model of care (winter 2007), planning committee members (n=10) were asked to provide written responses to four questions about their perception of the usefulness of the SWOT analysis:

- 1) Do you think the SWOT analysis contributed to the development of the new model of services? If so, explain how?
- 2) Do you think the SWOT analysis will foster change management and implementation of the new model of services? If so, explain how?
- 3) Do you think the SWOT analysis can contribute to fostering clinicians' ownership of the new model of service delivery? If so, explain how?
- 4) Do you think the SWOT analysis was useful to our service quality improvement efforts? If so, explain how?

Their responses were compiled and discussed by the planning committee members during one of their meetings.

Results and discussion

Strengths, weaknesses, opportunities and threats of the PEA

Thirty-six clinicians completed the SWOT questionnaire and generated a list of 97 items in the strength category, 79 in the weakness category, 54 in the opportunity category and 84 in the threat category. Their responses were regrouped into 19, 29, 25 and 25 specific sub-themes within each category, respectively. Table 1 presents the five most frequent responses for each SWOT category and the frequency of each sub-theme.

[Insert Table 1 about here]

The frequency of a response does not necessarily reflect the importance of a sub-theme but rather the number of clinicians who gave the particular response. The most frequently reported strengths of the programme were interdisciplinary work, a good working climate and use of an individualised or personalized approach. The most frequent perceived weaknesses were few psychosocial services for children and their family, followed closely by long waiting lists and waiting times and heavy caseloads for clinicians. The most frequent perceived opportunity was the growing tendency to work more with community partners. Fear of losing service quality by increasing the number of group activities and spending too much time preparing them was by far the most frequent threat perceived by the service providers.

Although these SWOT responses were specific to the PRP programme and to the context in which the study was conducted, many of them seem to reflect issues and concerns currently addressed in the paediatric rehabilitation literature. For instance, some of the perceived strengths are in line with approaches currently advocated for use with children with disabilities, including the need to have individualised, family-centred care [27,28] delivered by an interdisciplinary team [27,29]. Perceived weaknesses of the PRP are also reported as important issues for families and often lacking in rehabilitation programmes (e.g. accessibility to services [1-5] and psychosocial support [1,6,30,31]). With regards to opportunities, community partnerships are advocated as an essential component of rehabilitation programmes in order to foster children's social participation [7,27,32,33]. Finally, the fear of losing service quality is becoming a growing concern, particularly when rehabilitation centres are faced with scarce resources and budget cuts.

This context can lead to heavier case loads for service providers, which can have a negative impact on their perception of service quality [4]. It is understandable that the PRP clinicians may have worried about having to do more with less. Their concern about group activities and service quality does not however appear to be addressed in the literature.

Utilization of SWOT results in the process of service reorganization

Although the planning committee members felt that all of the responses were important, they decided as a first step to prioritize those with the highest frequency and those perceived the most relevant, given the particular stage of development of the reorganization process. They were also concerned about maintaining and building upon the perceived strengths rather than losing them within a poorly planned programme reform. The planning committee members decided that to truly address the SWOT responses, the goals of the service reorganization process needed to be revised and the programme services needed to be better coordinated.

SWOT results fostered many discussions among planning committee members about the aim of the reorganization process. They finally decided to reorient the reorganization process from reducing waiting times towards an overall improvement of the quality of the rehabilitation services provided by the programme. With this broader goal, the planning committee members were able to go beyond simply addressing the problems related to long waiting times. Every component that would be developed in the new model was thus to be designed to improve service quality. Sub objectives of the project included improving access to services, increasing the impact of services on children's social participation and to fostering the well being of all stakeholders involved in the PRP. The latter two were related to the long term goal of

rehabilitation and the centre's philosophy of human caring. Accessibility remained a sub objective of the reorganization process but it was included within a broader definition of quality [34,35]. Indeed, this supports the literature about the impact of a SWOT analysis on the revision of a project's goal [12].

With this newly revised goal of improving quality, the planning committee started thinking about the specifics regarding the service delivery within the new model of care. For the purposes of this article, SWOT results are discussed with respect to five overarching themes: 1) Interdisciplinary work, 2) Access to services, 3) Psychosocial support for families, 4) Community and group interventions and 5) Family-centred care. Discussions focused around how activities related to these themes could be implemented in a coordinated manner to increase service quality.

[Insert Table 2 about here]

With respect to interdisciplinary work, use of this approach was perceived as strength in the SWOT analysis and it was felt that it should be maintained and further facilitated. Specifically, time for peer support and interdisciplinary and professional discussions, also perceived by service providers as important strengths for service quality, would be put aside for these activities as part of the new model. On the other hand, lack of service coordination was reported as a weakness of the programme and as an obstacle to interdisciplinary work and adequate planning of services. To address these issues, the planning committee members decided to create interdisciplinary *evaluation* teams to ensure that the global needs of the children and their families would be addressed throughout their life span. Moreover, they decided to develop a new

interdisciplinary method of planning services that would describe the type of services that should be offered to children according to their diagnosis, prognosis and age. This new way of planning services would help ensure a better coordination of services over the life span, avoid long periods when services are not provided and other periods when too many services are offered at the same time. In addition, these service planning guidelines could address other weaknesses expressed in the SWOT, such as the difficulties in managing clinicians' case loads, the inconsistency among service providers regarding criteria used for follow-up interventions and discharge management, and the lack of continuity of care.

Access to services and Psychosocial support to families were the two most important weaknesses expressed in the SWOT. They are however closely related since lack of access to services can have negative psychosocial impacts on children and their families [3,36,37]. To address these concerns, it was thought that services could be provided in a more timely and responsive fashion if a scanning of needs was done by a clinical coordinator and an interdisciplinary team soon after the child was referred to the PRP. Group and community interventions were felt to be more efficient ways of addressing some common needs and were expected to help improve access to the programme. For instance, instead of waiting for *individual* services, a child could be referred to speech and language therapy *groups*. To address the psychosocial support, a new service was created. A social worker began telephoning the family soon after referral to the programme to offer a first human contact, to answer the families' questions, to give information, to identify any risks for social crisis and the need for psychosocial support. By targeting specific stressful periods for families, such as when children are first referred or during crucial (e.g. post operative) and transition periods (e.g. entering school), coordinated services could better identify

and respond to families' needs and diminish their anxiety. Other features of the new model would include more opportunities for parent encounters (e.g. family to family support sessions during group interventions) and better access to information (e.g. documentation centre).

Community and group interventions were perceived as something positive by many clinicians but also as a threat for the PRP. They were felt to be time consuming, to require more coordination and to lack flexibility to respond to some specific children's needs. Discussions led the planning committee members to clarify the objectives of these interventions, to identify their essential elements and to identify mechanisms of communication necessary to inform everyone involved in a child's treatments about all the services this particular child would be receiving. Services providers also felt that the development of group and community interventions would be an added burden to their already heavy caseload (a SWOT weakness). The planning committee members thus decided to consult all of the PRP service providers to identify the resources that needed to be developed to support these types of interventions (e.g. material for the group, written information for family, evaluation forms for children, simplified statistic and administrative procedures, etc.). Programme managers subsequently granted time to some service providers to facilitate the implementation of these new interventions.

Family-centred care, including an individualized approach, was identified as strength of the current programme but was perceived to be threatened by the new service model. To ensure patient-centred care, flexible criteria guiding the selection of intervention categories were developed. For instance, if a child presented specific features impeding group participation (e.g. child in a region where not enough children have similar needs to create a group), individual

interventions could be proposed. This was in line with the notion that interventions centred on processes instead of structure tend to be associated with greater family satisfaction and perception of quality of services [38]. This flexibility in the selection of interventions would address three major threats and weaknesses expressed in the SWOT (structural rigidity limiting professional autonomy in the choice of treatments, lack of responsiveness to families' needs and different realities across regions).

Perception of the SWOT analysis and its usefulness for fostering quality improvement

The planning committee members all agreed that the SWOT provided useful and important information to assist in the development and the implementation of the new model of services. They reported that the SWOT questionnaire seemed to raise awareness among service providers regarding current programme functioning, the need for future reorganization of services and the weaknesses that could be improved. Some felt that this increased awareness facilitated changes and service providers' adherence to the reorganization project because of the common recognition of actual problems and the need to find solutions. Planning committee members felt that the SWOT analysis had given service providers the power to influence the development of the new model, fostering their implication in the project and their sense of ownership. One member wrote: 'the questionnaire forced them to reflect on the quality of our services and generate ideas and solutions. By building on our strengths and diminishing our weaknesses, we surely can improve the quality of our services'. Committee members reported that since the service providers were well aware of the needs of the children and their family, their comments were interpreted as 'a source of information and inspiration to ensure the development of quality services'.

In general, the planning committee members felt there were many benefits associated with conducting a SWOT analysis. For instance, the revision of the project goals and the participatory approach helped foster a more positive perception of the new model among the PRP staff and their partners and contributed to diminishing resistance to change. A participatory approach is believed to diminish the disconnect between what one believes and what one does [39] because nothing is imposed but rather changes come from one's introspection and contribution to a project. The SWOT was a reflexive yet challenging exercise bringing clinicians to build on already known opportunities and to create solutions by transforming weaknesses and threats into opportunities. The SWOT also provided information regarding the areas that were perceived as stressful for service providers and helped identify what could be done to support them during the implementation phase of the new model (e.g. reduce fatigue and offer support and training when necessary).

Indeed, SWOT analysis was a useful tool for all service providers since it actively involves them in the reorganization process. Their participation appeared to increase their feelings of ownership and to empower them as change agents. Generally, members of the planning committee felt that the comments made by clinicians during the SWOT were taken into account in the development of the new model. However, as suggested by the committee members and by the literature [16], strengths, weaknesses, opportunities and threats of a programme evolve over time. Following up on SWOT would thus be very useful and could be well suited for programme evaluation once the new PRP model is fully implemented. As the SWOT is a subjective evaluation tool, it could be used in the future in conjunction with other evaluation tools [40], such as the Measure of Processes of Care [41], to evaluate the programme's strengths and areas for improvement.

Limits of the study

The strengths, weaknesses, opportunities and threats reported here are based on stakeholders' perceptions of their clinical reality and may reflect a social desirability bias. Although efforts were made to ensure confidentiality, the service providers may have reported what they felt management wanted to hear from them. The results are specific to the PRP limiting their generalisability outside of the programme. However, the concerns raised by the PRP service providers about service quality and delivery are those currently addressed in the literature and thus these results are likely relevant to those interested in quality improvement efforts in paediatric rehabilitation. Although all the members of the planning committee participated in almost every step of the process, only one member coded the data and data regroupings were not formally cross validated by the group. These regroupings may have been influenced (negatively or positively) by this person's experience and thoughts about the service delivery reorganization process.

Conclusion

This paper presented the strengths, weaknesses, opportunities and threats of the PRP and how SWOT results can be used to help reorganize rehabilitation services aimed at improving service quality. Although SWOT analysis was previously reported to be a useful tool to document the organization of health services and to develop action plans [11-13], to date, little research has been available regarding how to concretely use the data it generates to improve service quality. According to our results, SWOT analysis can be used as a starting point in a process of quality improvement. Once strengths, weaknesses, opportunities and threats are identified, clinical settings can apply and transfer these findings into actions for quality improvement. Although

reducing waiting times was the initial driving force behind the reorganization of services (and one of the most important weaknesses of the PRP as perceived by the service providers), analysis of SWOT results led to a shift in the project's goal by fostering a global vision of quality improvement at the PRP. Clearly, SWOT is a useful tool for quality improvement.



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Table 1. Five most frequently reported sub-themes within each SWOT category by service providers (n=36).

	Sub-themes	Frequency n (%)
	Interdisciplinary work and good working climate	16 (44%)
Strengths (97 items grouped in 19 sub-themes)	Individualized approach and personalised care (services responsive to specific needs)	
	Continuous quality improvement (many positive changes in past years – e.g. revision of admission procedure)	11 (31%)
	Human quality of clinicians and innovation capacity	10 (28%)
	Many homogeneous groups already responding to specific children needs	8 (22%)
Weaknesses (79 items grouped in 29 sub-themes)	Few psychosocial services for children and their family	10 (28%)
	Long waiting lists and waiting times	9 (25%)
	Heavy case-load for clinicians (exhaustion)	8 (22%)
	Regional differences in service delivery	7 (19%)
	Lack of service coordination limiting interdisciplinary work - clinicians working alone because other therapies have not yet begun	6 (17%)
	Working more with community partners	12 (33%)
ies 25	Developing an annual calendar of group interventions	8 (22%)
Opportunities (54 items grouped in 25 sub-themes)	Working more with family and parent associations	5 (14%)
Opportuni (54 items grouped in sub-themes	Human caring (philosophy recently introduced in the Centre)	4 (11%)
Opj (54 gro sub	Professional mentoring – peer supervision	3 (8%)
Threats (84 items grouped in 25 sub-themes)	Fears related to too many group interventions (e.g. fear of losing quality or spending too much time on group preparation)	19 (53%)
	Losing contact with parents	13 (36%)
	Fear of structural rigidity being non responsive to family needs, or to clinicians' preferences	11 (31%)
Threats grouped themes)	Fear of losing professional expertise and autonomy	6 (17%)
Thi gro thei	Poorly defined roles for community partners and lack of implication	6 (17%)

Table 2. SWOT analysis results presented according to global overarching themes and subthemes within each SWOT category

Sub- themes Over arching themes	Strengths	Weaknesses	Opportunities	Threats
Inter- disciplinary work	Interdisciplinary work already existing Interdisciplinary evaluation (global vision of children)	 Not enough interdisciplinary evaluation and intervention Service providers working in isolation because other therapists are not involved in the care at the same time Many therapies at the same time risk overburdening parents 	Creation of guidelines about interdisciplinarity at the Center	 Many service providers from the same discipline providing services to a child at the same time Lack of communication mechanism allowing each service provider to know what others are doing for a child The programme requires better coordination of services
Access to services		Waiting list	 Addition of a one-time consultation service for children on the waiting list Society's concern about the effect of long waiting times on children 	
Psychosocial support for families	Key worker	 Insufficient psychosocial support for families Lack of written information 		 Insufficient psychosocial support for families during the waiting period Losing track of parents/child – falling through the cracks in the system
Community and group interventions	Variety of group and community interventions already existing	 Annual group interventions calendar not yet developed Lack of follow up with community partners 	 Working more with community partners Develop an annual group interventions calendar Develop partnerships with parents' associations 	 Implication and role of community partners are undefined Time needed to develop group and community interventions Groups – risk of losing quality
Family- centred care	 Individualized and personalized care Current model allows flexibility for different kinds of interventions Intervention plans centred on children and families' needs Already started to integrate more families within therapies 	 Not always successful in identifying families' priority needs Not enough implication of families in their children's rehabilitation 		Loss of flexibility and professional judgement with the new service model