Critical Event Card: analytical tool for knowledge translation

Cartão de Evento-Crítico: ferramenta analítica para translação do conhecimento

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ABSTRACT This study aims to use analytical tool, the Critical Event Card (CEC), to potentialize the application of scientific knowledge in health promotion to decision making. A workshop and seven interviews with users of knowledge (management representatives, users, and health professionals) were conducted in order to map these critical events related to health promotion. From the workshop were extracted the events related to health promotion that marked the evolution of the intervention in Nova Aliança; and from the interviews, the pre-established codes on the theory present in the CEC: actants/actors, interests, interactions, technical mediation, actions and consequences, using directed content analysis. Three critical events related to health promotion actions were identified: the arrival of the Community Health Workers Program (Pacs); the first Local Council and the implementation of multidisciplinary and medical residency, which were systematized according to the categories presented. It was observed that the present categories made it possible to understand the intervention and that the CEC is a useful tool that can help decision-makers benefit from the scientific knowledge produced.

KEYWORDS Family Health Strategy. Health promotion. Health evaluation. Translational medical research.

RESUMO *Este estudo objetivou utilizar ferramenta analítica, o Cartão de Evento-Crítico (CEC), para potencializar a aplicação do conhecimento científico em promoção da saúde à tomada de decisão. Foi realizada oficina e sete entrevistas com usuários do conhecimento (representantes da gestão, usuários e profissionais de saúde) com intuito de mapear esses eventos-críticos ligados à promoção da saúde. Extraíram-se da oficina os acontecimentos ligados à promoção da saúde que marcaram a evolução da intervenção em Nova Aliança; e das entrevistas, os códigos preestabelecidos a partir da teoria presentes no CEC: actantes/atuantes, interesses, interações, mediação técnica, ações e consequências, utilizando a análise de conteúdo direcionada. Foram identificados três eventos-críticos relacionados com as ações de promoção da saúde: chegada do Programa de Agentes Comunitários (Pacs); 1º conselho local e implantação da residência multiprofissional e médica, os quais foram sistematizados de acordo com as categorias apresentadas. Observou-se que as categorias presentes possibilitaram a compreensão da intervenção e que o CEC é uma ferramenta útil que pode ajudar os tomadores de decisão a se beneficiarem dos conhecimentos científicos produzidos.*

PALAVRAS-CHAVE *Estratégia Saúde da Família. Promoção da saúde. Avaliação em saúde. Pesquisa médica translacional.*

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Introduction

The need to apply knowledge in practice is not a recent fact, and accompanies the evolution of humanity. As an example, there are the early hunters who succeeded in agriculture and who passed on practical knowledge, which was passed down from generation to generation[1]. In recent years, researchers and policy makers have been questioning what can be done to integrate and provide an effective bridge between research and practice[2,3]. For Dias[4], a challenge of public health research is to use the result of scientific research in more effective health actions and policies that meet the real needs of the population.

Thus, the applicability of knowledge in practice is globally recognized as a relevant factor for the improvement of health care assistance[4], understanding that Knowledge Translation/Transfer (KT) is interactive and dynamic, including synthesis, dissemination, exchange and application of knowledge for health practice, with flexible boundaries between knowledge creation and action development to produce beneficial results for society[5,6], that is, it represents the process of putting knowledge into action[5,7].

Over the last decades, one notices the increase in research on how to reduce the gap between practical-political evidence. In this sense, several authors suggest a strategy to potentiate KT by reducing the gap between the knowledge produced and its translation in the resolution of health problems, in the interface with other sectors and to progress in the science and practice of KT in the health area[8,9].

One field in which the interface between research and action is already well established is Health Promotion (HP). It aims to empower people to increase control and improve their health, being a concern and a challenge for the field to delineate the contours and appropriate method for research on HP[10]. Reflecting on the practical dilemmas for HP, Potvin and McQueen[11] argued about the need for tools to reflect, value and reproduce HP practices.

In this sense, approaches capable of capturing the dynamics of the actors' actions involved, as well as the interactions that are established in this process of transformation of knowledge into action, are necessary and timely[12]. Based on the Actor-Network Theory (ANT), it is proposed that the elements of an intervention make up a Sociotechnical Network[13], which create events that change or reinforce the trajectory of an intervention, becoming markers of its evolution[14,15]. However, health interventions are permeated by controversy, which arises from differences between positions, points of view, social and political projects of many actors, or anything else at stake among those involved[13,16]. Controversy can destabilize routines and relationships between actors. We call critical events those that are linked to controversy, generate consequences, and lead to the reconfiguration of an intervention[17,18].

Thus, this study aimed to use the analytical tool, the Critical Event Card (CEC), to enhance the application of scientific knowledge about HP in decision making, with a view to contributing to the improvement of the service users' quality of life.

Methodological procedures

This is an evaluative research based on ANT. From this theory, critical events were captured, considered the unit of study analysis. The period for the accomplishment of the study was 1992, when HP actions were implemented at the Nova Aliança Unit, located in the municipality of Camaçari, metropolitan region of Salvador, until 2017.

Nova Aliança has a unique configuration because it is a school unit, based on the partnership established between the management of Camaçari and the Family Health State Foundation (Fesf) of the State of Bahia. It consists of four family health teams, composed of: physicians, nurses and dentists, who are first year residents (R1) and second year residents

(R2). Included in this group are: preceptor of nursing, medicine and dentistry, who work 40 hours a week directly with residents. The Community Health Workers (CHW), nursing technicians, unit manager, general and administrative services make up the municipality's staff, which is divided into contracts, commissioned positions and public servants.

For data construction, workshop and interviews were carried out. The workshop took place with the three oldest CHW of Nova Aliança and was based on the question: 'what events has marked the history of this health unit?', aiming to identify the HP events that has marked the unit.

The interviews took place with the help of a semi-structured script, in which the questions were related to the HP actions implemented in the unit, with seven knowledge users, being a community leader (representing users), a management professional (primary care coordinator), a resident (physician), two preceptors of the residence (medicine and nursing), a municipal server (nursing technician) and a professional at the time of the Traditional Health Unit (nurse). These were selected according to the explicit involvement with the unit. At the end of the interviews, the events related to the HP that marked the intervention, identified in the workshop, were presented, and the interviewees could add other occurrences when they thought relevant. It is relevant to point out that the relationship of these events with the HP was based on the interviewees' conception of what this concept would become.

Data obtained after semi-structured interviews were fully read, transcribed and analyzed according to content analysis with a targeted approach, as ANT provided the basis for data capture. Through exhaustive reading of the interviews and the identified events, the various pre-established codes from the theory were extracted from the lines: actants/actors, interests, interactions, technical mediation, actions, registrations, place, time and consequences *(chart 1)*[19]. This movement facilitated the identification of occurrences that were classified as a critical event, enabling the implementation of the CEC. It could only be considered as a critical event if it fulfilled all categories of the card, if it had caused some change in intervention and was preceded by controversy.

Chart 1. Analytical categories of the Critical Event Card (CEC)

Categories	Operationalization of analytical categories
Actant/actor	It aims to identify what is at stake for specific actors in the event and/or their particular perspective on the event.
Interaction	Indicates how different groups and organizations worked together and made changes.
Mediation	Understood as a process, the transformation of a situation, which leads to the redefinition of the problem and the relationships between agents of the system.
Action	Identifies practices, activities, work processes performed by actors in the emergence, implementation and stabilization of an event.
Registration	All types of transformation that materializes an entity into a sign, file, document, piece of paper, stroke.
Consequences	Results of critical events, what was produced after the controversy, which could be the re-stabilization or disruption of the intervention.

Source: Oliveira et al.[19].

This study was conducted following the ethical precepts defined in the current resolutions and was submitted to the Research Ethics Committee – CEP/Aggeu Magalhães Institute – IAM, and approved with CAAE 73416217.3.0000.5190.

Results

With the applicability of the CEC, three critical events linked to the HP were identified that led to changes in the Nova Aliança health unit, namely: Arrival of the Nova Aliança Community Agents Program (Pacs); Implementation of the 1st Local Health Council; and Implementation of the Multiprofessional Residency Program and Family and Community Medicine.

The use of the tool allowed the understanding of each critical event in relation to the development of HP actions. The 'actants/actors' who shaped the network in the intervention were both human actors – management professionals, Pacs' professionals, Family Health Strategy professionals, users, community leaders, residents – as non-humans: scientific knowledge, medical specialties, reception, dialogue, HP concept, health council, residency program, Fesf, among others.

Two non-human actors identified should be highlighted: the residence program and the concept of HP. The residency program through the teaching-service process becomes a facilitator for performing HP actions, discussing the concept of HP from the problematization of social determinants. Besides the social determinants, the residence discusses with its pedagogical body ways to expand access, improving the context of life in the community.

> *The residence demands it much more, because it is a training place, it is a place that has people thinking about it, thinking about advancing, thinking about developing a better health system, so when you stay there in that reflection, it ends up pointing to a north, but the servers in the journey end up being pulled to this and also participate in this.* E3.

This concept of HP worked by the residence, therefore, goes far beyond the absence of disease, truly acting on social determinants, which would be the conditions of housing, education, basic sanitation, income, work, food and leisure. It cares about social and environmental problems, valuing and encouraging public policies that aim at social transformation.

It is noticed that the participants shared their actions for changes in the policy, practice and provision of health services, and acted as users of knowledge ensuring its use for decision making.

> *It discussed the best for the community, and they went in search of improvements. It brought a lot of improvement to the community, even a reform happened, didn't it? A little restoration here, the board really was on the front line, seeking and seeing this need.* (Rose).

Understanding the action mode of the interventions allowed us to identify the 'interests' of the active, which may be convergent or divergent in relation to some actions, including HP actions, depending on the period studied.

It was seen that, in critical event 1, there were opposing interests between community and CHW: while the former valued traditional health facilities and did not support intervention, CHW had an interest in the program, performing various actions without support from municipal management or participation of other team members acting as an aggregating agent, a node in the network.

It is observed that the conflicting interests can be modified depending on the articulations established in the Sociotechnical Network. It is noticed that, in the critical event 2, an alliance between actors was formed by community, professionals of the basic unit and the Pacs, as a result of the action of non-human actor Local Health Council. This articulation was the result of the empowerment of users and a common interest: social changes from the 'interaction' between health, community and

other sectors. Such statement strengthens the intersectoriality and the actions of HP.

> *It is important to emphasize that in this local council, we inserted directly, we inserted the community, directly.* (Rose).

This empowerment of the community gained consistency with the critical event 3, being the multiprofessional residency program and family and community medicine established in that territory from the 'interest' between municipal management and Fesf. However, the established network was dismantled from the disinterest of the unit's servers, initially hindering the realization of the work process and, consequently, HP actions.

It is noticed that the divergence of interests is closely related to context and time. This process of intervention evolution is characterized by controversies and 'mediators' that stabilize the network formed from these interactions. It can be highlighted as crucial mediators some management professionals, being also accompanied by their didactic and technological tools, non-human mediators that facilitated the work process and relationships, leading to the sustainability of intervention and advances of HP actions.

> *She made the program grow and advance, because although the municipality did not offer conditions, but she used to create situations where we could be more empowered, where we could... it sought with the Ministry of Health and brought, and with that we already learned a lot, with that.* (Orchid).

Dialogue was also a 'mediator' of relationships, being used from tools such as: welcoming and team meeting. Some specific actors, such as the preceptor physician and the new residents, can also be considered mediators for the continuity of the process. With the CEC, it was possible to identify the main weakness points for subsequent decision making, and dialogue is a crucial factor in the implementation of an intervention.

> *In fact, it wasn't just us, it was all the professionals in the unit. None were put 'will come such a day, come to put such a thing', it didn't happen.* (Sunflower).

Through interactions and mediations, therefore, relations were improved and the network of allies stabilized, and the actions of the HP were established. It can be identified from the critical event 1: area mapping and statistical map construction; waiting room with lectures; home visits; registration of areas; Elderly group and lectures in the territory. These actions are present in the CEC, which facilitates the evaluation process of decision makers. Among the actions developed related to the critical event 2 were: monthly meetings in the community, survey of problems in the community and proposals for improvement in many areas.

The actions established in Nova Aliança with the residence were: territorialization, user registration, reception of spontaneous demand, home visit, organization of groups and actions aimed at prevention and health promotion, such as: pregnant group, School Health Program (PSE), collective consultation etc. Regardless of all the difficulties encountered, the positive results of the work done in the community by the residency groups also impacted the training process, broadening the integral view of the user by residents and staff. The developed HP groups brought the participation of the users, being often conducted by them.

> *The last group that existed, the last meeting was a user who was facilitating. She does karate and she brought it to the group, she is yellow karate belt I don't know, something like that. She brought this activity to the group, so she facilitated the process. So, it is something that we seek, it is gradual, but it is something that we seek. The idea is exactly that, is that later on the users can themselves, themselves can move the group along and have a greater independence of health facilities.* E1.

In addition to the actions evaluated, it is pertinent to bring that every change leads to 'consequences', which tells us how important a particular program was. As a 'consequence' for intervention from Critical Event 2, we had: a stronger strengthening of social control, improvements (reform) to Nova Aliança unity from the council's articulations and a strengthening of the community for social change. The consequence category was also evaluated in the study, being identified with the arrival of Pacs: increased vaccination coverage in children, improvement in the health conditions of the population and greater organization of the Pacs work process.

> *It has greatly reduced cases of measles, child paralysis, greatly, greatly indeed. We were very congratulated for that.* (Sunflower).

Finally, the 'consequences' described in the CEC generated by critical event 3 were numerous. One of the most important was the change of assistance model after the arrival of the residence, breaking with a model in force for more than 30 years, improvement in the work process, improving the reception to users, improvement in the health levels of that population and greater integration with the community.

Discussions

The study aimed to show the use of an analytical tool for identification and analysis of critical events, and its potential for the application of scientific knowledge in decision making. It was found that the analytical categories based on ANT form a set of powerful elements to understand the complexity of interventions and explain the KT process, being an interactive and flexible approach, as has been advocated by KT studies[20,21]. KT is conceived as a system of actions that operate with the Sociotechnical Network that produces innovations, creates and reconfigures the connections between actors[22].

Observing the findings regarding the actatns/actors, it is clear that the creation of networks and the construction of 'effective cooperation' strengthened the relationships between those involved, creating nodes that allowed the application of knowledge related to HP[14,23]. The use of ANT has enabled the recognition of actors who relate in Sociotechnical Network. These actors are not only those traditionally involved in the process of knowledge construction, as users already listed in the literature, but a set of entities that, in general, are not considered.

The non-human actor must be pointed out: the concept of HP. By analyzing it, the relationship that interventions have with the time and space in which it develops is observed. According to Latour[24], the fact that this concept is traced, generating traces and marks in the intervention, makes it a non-human in the network, and this study is in accordance with what the theory addresses. The initial focus of HP linked to disease prevention and the evolution of the concept to the focus of social determinants brings us consequences in the implementation of promotion actions and networks built from each approach. Valuing this finding, the knowledge itself, technological resources and the whole set of non-human actors interacting and acting within the intervention facilitates KT.

Knowledge occurs in an active and multidirectional flow of information[25], where interactions and exchanges are established among a wide range of interested parties; understanding such applicability in the intervention, based on the complex interaction between all process actors, with multiple factors determining and interfering with the research-based knowledge found on the path to practice[26].

Understanding ANT interventions made it possible to initially connect distant universes, negotiating interests in the (re)configuration of their identities and relationships, perceiving KT as a distinct entity. The interactions evidenced in the critical events were the product

of alliances that interfere and suffer interference from relationships that are aligned due to common goals[27].

The mediators identified here were able to transform, translate, distort and modify meanings[28], enhancing actions within a universe, a network consisting of a heterogeneity of mediators. In the occurrence of actions resulting from critical events, it was indispensable to measure 'dialogue', for example, which allowed the creation of bonds that did not exist[29].

Thus, it is understood that the CEC analytical tool can contribute to the action or application cycle proposed by Graham, as it allows understanding the interventions, their interactions with the local context, as well as the possible barriers and facilitators in the process of translating this knowledge to clinical practice[18,30]. The need to use tools that translate the results of investigations into language and formats directed to decision-making should be a precept adopted by knowledge users. It is known that the use of strategies ensures a more relevant research and better use of the results of the investment, as well as facilitate the expansion of the network of allies.

It is also appropriate to clarify that translational research is useful for decision-makers to benefit from the scientific knowledge produced[31], evaluating beyond the effectiveness of interventions. It is also understood how factors can enhance the uses of these interventions in real contexts[32]. This field also involves collaboration among all knowledge users, including researchers (within and among disciplines), policy makers and managers, health care providers and consumers (that is, patients, family and informal caregivers)[8,33].

Another point that can be emphasized is that the learning potential of organizations can be improved by allowing them to assimilate and apply knowledge[34]. As stated by Proctor et al.[35], it is necessary, in order to carry out translational research, both a research and theory body that informs effective implementation processes as well as the research workforce capable of conducting rigorous and relevant studies.

Final considerations

It is understood that, by analyzing analytical tools such as CEC, one can find ways to apply knowledge and, consequently, improve the use of research results in practice. Thus, it is emphasized that the science of implementation has a practical relevance. In this sense, the scope of this discussion is to overcome the few researches carried out in Latin America and to call the various actors in the national scenario, regarding translational research, to establish a distinct look at the application of knowledge that can improve health outcomes.

Collaborators

Silva JC (0000-0002-1210-9121)* contributed to the conception, planning, analysis and interpretation of data; critical review of the content; and approval of the final version of the manuscript. Alves CKA (0000-0001-8870-7972)* contributed to the conception, planning, analysis and interpretation of data. Oliveira SRA (0000-0002-6349-2917)* contributed to the critical review of the content and approval of the final version. ■

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