

## EDITORIAL

# Childhood disability: can people implement the F-words in low and middle-income countries – and how?

Since the beginning of the 21st century, there have been important developments in thinking about the concepts of health and disability. In 2001, the World Health Organization (WHO) published an updated version of its framework for health: the International Classification of Functioning, Disability and Health (usually called the ICF). Based upon this framework, Canadian researchers published an approach to childhood disability, in a paper called “*The F-words in Childhood Disability: I swear this is how we should think!*”.<sup>1</sup> The six ‘F-words’ (function, fitness, family, friendship, fun, and future) present a set of linked ideas. These words aim to unfold, and bring to life, new ways of thinking about childhood disability, indeed about all aspects of child development, and to engage stakeholders (any “individual or group who is responsible for or affected by health- or healthcare-related decisions that can be informed by research evidence”) to implement these new ideas in clinical practice.<sup>2</sup>

This proposed shift in paradigm expands beyond looking solely at “fixing” impairments to focus on promoting activity and participation engagement in home, school, and community settings. This change is consistent with current evidence that shows that gains obtained from “treatments” in the domain of body structure and function do not, as has traditionally been assumed, automatically transfer to other domains, such as activity and participation. Indeed, while all the ICF domains are interconnected, functional improvement depends on a myriad of factors and not solely on improvement in impairments.<sup>1,3,4</sup>

The authors of the ‘F-words’ paper advocate that these six words, designed to bring the ICF to daily use, encompass the basis of every child’s life.<sup>1</sup> In this context, the ‘F-word’ **Function**, in the activity domain of the ICF framework, means what a child does, such as executing an action or a task on his/her environment – however he/she can accomplish it! **Fitness** is incorporated in the body structure and function domain and refers to become physically active

– something that is often a challenge for people with impairments. **Fun**, an element of the ICF framework (participation and personal factors), means what a child wants to do – and can be used for ‘therapies’! **Friendships** are also placed within the same ICF domain as Fun, and are considered an essential component of social development (namely, **Participation**), highlighting the quality of social interactions. **Family** encompasses the most essential environment of any child and represents a key focus for family-centered service. Finally, the sixth ‘F-word’, **Future**, represents the imperative to think about the ‘F-words’ concepts in a positive way.<sup>1</sup> Taking all these ‘F-words’ together will remind us what is relevant to consider in (re)habilitation (we prefer to say ‘developmental’) services of children whose development is always moving forward toward the future.

Since its publication about a decade ago, the ‘F-words’ paper has been cited more than 250 times and downloaded more than 20 000 times from the publisher’s website.<sup>5</sup> Soper and colleagues undertook a citation analysis study to explore “Who is using the ‘F-words’?” and “How are the F-words being cited/referenced/used?”.<sup>5</sup> This study showed that the ‘F-words’ have been used: (i) to reach a variety of stakeholders (audiences) focused on diverse health conditions (populations); (ii) to present the ‘F-words’ as an application of the ICF concepts; (iii) to support the modern way of thinking about disability approaches, in contrast to traditional ideas (i.e., people with disability should be “fixed”); and (iv) as facilitators to promote participation in physical activity and rehabilitation interventions. Among the 26 countries contributing to the information, just three countries from WHO-defined low and middle-income countries (LMICs)<sup>6,7</sup> (Brazil, China, and South Africa) had more than two ‘F-words’ citations. However, it is still uncertain how the ‘F-words’ are being implemented and what barriers/facilitators limit their use in clinical practice in LMICs.

Although service providers from high income countries (e.g., United States, Wales, Austria) and LMICs (Brazil,

Belize, Philippines, and Puerto Rico) have approved the use of 'F-words' as good practice, they have reported challenges in implementing them in clinical settings.<sup>8</sup> The reported potential barriers were: (1) the strong focus of stakeholders on the biomedical approaches ("fixing the child"); (2) limited resources to support the 'F-words' implementation, especially access to health care systems and financial limitations in LMICs; and (3) the meaningful translation and cultural adaptation of the 'F-words' in other languages. These findings highlight the challenges of transferring the 'F-words' knowledge for use in LMICs.

In 2014, aiming to disseminate the 'F-words' into practice, a research team from *CanChild Centre* (Canada) created a three-minute English-language awareness video.<sup>9</sup> At that time, the video reached a broad audience, with the majority of the views being from high income countries. In 2015, this same team's interest to provide tools and action-oriented resources led to the development of a Web-based Knowledge Translation (KT) resource entitled "The 'F-words' in childhood disability Knowledge Hub", hosted on *CanChild* website.<sup>10,11</sup> A pilot study survey was conducted to evaluate the 'F-words' Knowledge Hub. Individuals who completed the survey (families and researchers) from high and LMICs reported that the "F-words" videos and the "F-words" tools (e.g., 'F-words' agreement, picture collages, profile and goal sheet) (supplemental online material)<sup>1,12-16</sup> were the best features on the Knowledge Hub.<sup>9</sup> The 'F-words' poster has been translated into well over 20 different languages (including languages used in LMICs). But only one WHO-classified LMIC (Brazil) has created an 'F-words' awareness video (produced by [nossacasa.org.br](http://nossacasa.org.br))<sup>17</sup> and translated the 'F-words' tools into their own language (data available at [www.canchild.ca](http://www.canchild.ca)).<sup>11</sup> The 'F-words' Brazilian video available at *Instituto Nossa Casa* YouTube.com<sup>18</sup> has had approximately 5700 views, but considering the population in Brazil (more than 200 million people), the number of views is still very small. Taken together, a knowledge-to-action (KTA) framework is crucial to translate the 'F-words' knowledge to practice, especially in LMICs.

The KTA framework provides a conceptual map of the steps needed to translate knowledge to practice, called the 'action cycle'. This action cycle encompasses a dynamic model where first the knowledge is created and refined and then, through planned action, the knowledge is implemented considering the diversity of each context (e.g., non-English language, financial limitations and resources, etc.).<sup>19</sup> Since the 'F-words' knowledge creation (i.e., knowledge inquiry, synthesis, and tools/products) is already refined and available in the 'F-words' knowledge hub,<sup>11</sup> the action strategies by the agents of these ideas must be implemented considering the challenges of the LMICs.

A diversity of strategies have been reported by studies in LMICs that could be used to increase 'F-words' KT<sup>8,20</sup>: (1) establish regional 'F-words' opinion leaders, who will engage and implement others' strategies; (2) create training programs (e.g., demonstrations and practical activities); (3) distribute materials for tailored implementation (e.g., posters, manuals, videos, and photographs); (4) involve local partners (e.g., health professionals, parents, and community members); (5) disseminate materials on-line and publicly (e.g., awareness-raising activities, health kiosks at public events, home visits, educational messages transmit-

ted through the media and social networks, distributions of T-shirts, and scientific communications; (6) do educational outreach and meetings (e.g., workshops and discussion forums); (7) create artistic performances and games (e.g., theater, dance); and (8) promote policy dialogs and disseminate the policy briefs with strategies for implementing the 'F-words' in clinical setting.<sup>8,20</sup> The *Instituto Nossa Casa*, a non-governmental institute in Brazil, has been a pioneer in Latin America because they have been translating the 'F-words' content to Portuguese, sharing the new concepts of disability management with stakeholders, and developing knowledge translation tools for parents and therapists.<sup>17</sup>

Finally, to overcome the limited use of the 'F-words' in clinical settings, these 21st century ideas need to flourish across stakeholders. Thus, the advocates and agents of the 'F-words' from LMICs are called upon to become 'knowledge-broker agents,' adapting new knowledge to the local context, assessing potential barriers, and identifying supports that can be used.<sup>8,21</sup> We still have a long road to travel in LMICs to implement the 'F-words' into practice, but the first steps have been made. As we know things *can* change, let us continue on this path.

## Conflicts of interest

PR contributed to the creation and promotion of the 'F-words' ideas, all of which are freely available. HL and PC declare no conflicts of interest.

## Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at [doi:10.1016/j.bjpt.2020.07.006](https://doi.org/10.1016/j.bjpt.2020.07.006).

## References

- Rosenbaum P, Gorter JW. The 'F-words' in childhood disability: I swear this is how we should think! *Child Care Health Dev.* 2012;38(July (4)):457-463.
- Petkovic J, Riddle A, Akl EA, et al. Protocol for the development of guidance for stakeholder engagement in health and healthcare guideline development and implementation. *Syst Rev.* 2020;9(February (1)):21.
- Novak I, Morgan C, Fahey M, et al. State of the evidence traffic lights 2019: systematic review of interventions for preventing and treating children with cerebral palsy. *Curr Neurol Neurosci Rep.* 2020;20(2):3, <http://dx.doi.org/10.1007/s11910-020-1022-z>.
- Wright FV, Rosenbaum PL, Goldsmith CH, Law M, Fehlings DL. How do changes in body functions and structures, activity, and participation relate in children with cerebral palsy? *Dev Med Child Neurol.* 2008;50(April (4)):283-289.
- Soper AK, Cross A, Rosenbaum P, Gorter JW. Exploring the international uptake of the "F-words in childhood disability": a citation analysis. *Child Care Health Dev.* 2019;45(July (4)):473-490.
- WHO. Definition of regional groupings. World Health Organization. [https://www.who.int/healthinfo/global\\_burden\\_disease/definition\\_regions/en/](https://www.who.int/healthinfo/global_burden_disease/definition_regions/en/). Accessed 03.06.20.
- WHO. *Country Grouping*; 2017. <https://www.who.int/airpollution/data/countryregion.2017.pdf?ua=1>.
- Soper AK, Cross A, Rosenbaum P, Gorter JW. Service providers' perspectives on using the 'F-words in childhood disability

- ity': an international survey. *Phys Occup Ther Pediatr*. 2020;(February):1–12.
9. Cross A, Rosenbaum P, Grahovac D, Kay D, Gorter JW. Knowledge mobilization to spread awareness of the 'F-words' in childhood disability: lessons from a family-researcher partnership. *Child Care Health Dev*. 2015;41(November (6)):947–953.
  10. Cross A, Rosenbaum P, Grahovac D, et al. A web-based knowledge translation resource for families and service providers (the "F-words" in childhood disability knowledge hub): developmental and pilot evaluation study. *JMIR Rehabil Assist Technol*. 2018;5(December (2)):e10439.
  11. CanChild. CanChild, McMaster University. <https://www.canchild.ca/>. Accessed 27.05.20.
  12. F-words translations. Canchild, McMaster University. <https://www.canchild.ca/en/research-in-practice/f-words-knowledge-hub/f-words-translations>. Accessed 10.06.20.
  13. Brugnaro BH, de Campos AC, Rocha NACF. Tradução do Termo de Compromisso das Palavras Favoritas (F-words). In: Kay D, ed. *The F-words Agreement*. Universidade Federal de São Carlos (UFSCar): Laboratório de Análise do Desenvolvimento Infantil (LADI); 2019.
  14. Brugnaro BH, de Campos AC, Rocha NACF. Tradução da Folha de Metas das Palavras Favoritas (F-words). *The F-words Goal Sheet*. Universidade Federal de São Carlos (UFSCar): Laboratório de Análise do Desenvolvimento Infantil (LADI); 2019.
  15. Brugnaro BH, de Campos AC, Rocha NACF. Tradução da Colagem das Palavras Favoritas (F-words). In: Grahovac D, ed. *F-words Collage*. Universidade Federal de São Carlos (UFSCar): Laboratório de Análise do Desenvolvimento Infantil (LADI); 2019.
  16. Brugnaro BH, de Campos AC, Rocha NACF. Tradução do Perfil das Palavras Favoritas (F-words). In: Cross AGD, Brocklehurst J, Kay JD, eds. *The F-words Profile*. Universidade Federal de São Carlos (UFSCar): Laboratório de Análise do Desenvolvimento Infantil (LADI); 2019.
  17. Instituto Nossa Casa. Nossa Casa. <https://nossacasa.org.br/>. Accessed 27.05.20.
  18. Instituto Nossa Casa. Nossa Casa. <https://www.youtube0.com/watch?v=xPMzPJwWop8>. Accessed 27/05/20.
  19. Graham ID, Logan J, Harrison MB, et al. Lost in knowledge translation: time for a map? *J Contin Educ Health Prof*. 2006;26(Winter (1)):13–24. <http://dx.doi.org/10.1002/chp.47>.
  20. Siron S, Dagenais C, Ridde V. What research tells us about knowledge transfer strategies to improve public health in low-income countries: a scoping review. *Int J Public Health*. 2015;60(November (7)):849–863.
  21. Longo E, de Campos AC, Palisano RJ. Let's make pediatric physical therapy a true evidence-based field! Can we count on you? *Braz J Phys Ther*. 2019;23(May–June (3)):187–188.

Hércules Ribeiro Leite<sup>a,\*</sup>, Paula Silva de Carvalho Chagas<sup>b</sup>, Peter Rosenbaum<sup>c</sup>

<sup>a</sup> Graduate Program in Rehabilitation Sciences, School of Physical Education, Physical Therapy and Occupational Therapy, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil

<sup>b</sup> Graduate Program in Rehabilitation Sciences and Physical-Functional Performance, Universidade Federal de Juiz de Fora, Juiz de Fora, MG, Brazil

<sup>c</sup> CanChild Centre for Childhood Disability Research, McMaster University, Hamilton, Ontario, Canada

\* Corresponding author at: Graduate Program in Rehabilitation Sciences, Escola de Educação Física, Fisioterapia e Terapia Ocupacional, Universidade Federal de Minas Gerais, Avenida Presidente Antônio Carlos, 6627, Pampulha, CEP: 31270-901, Belo Horizonte, MG, Brazil. E-mail address: [hercules@ufmg.br](mailto:hercules@ufmg.br) (H.R. Leite).