

The Work Disability Prevention CIHR Strategic Training Program: Program Performance After 5 Years of Implementation

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Abstract *Introduction* The Work Disability Prevention (WDP) Canadian Institutes of Health Research (CIHR) Strategic Training Program was developed in 2001 and is a unique program in the world. The main objective of this program is to help future researchers develop transdisciplinary knowledge, skills and attitudes regarding WDP. The purpose of this paper is to present a descriptive portrait of the program's performance over the past 5 years, as well as the trainees' and alumni's perspectives on the WDP CIHR Training Program. *Methods* Data on the program's performance were collected from documents in the

program records. The trainees' opinions on the WDP training program were obtained through focus groups and telephone interviews. The data collected were compiled and divided into themes to summarize the qualitative findings pertaining to each question. *Results* From 2003 to 2007, five successive summer sessions have been offered, involving 44 high-caliber applicants from nine countries, 34 mentors and collaborators, 29 guest speakers and 15 stakeholders. Overall, trainees appreciated the networking, the opportunity to interact with people from different disciplines and countries, the openness, and the international perspective and uniqueness of the program. The least appreciated aspects concerned mainly the e-learning course, evaluations and information on optional courses. The coordination and logistics were judged appropriate and several topics were suggested to improve the program quality. *Conclusion* In general, the program implementation went well, with good participation from mentors, speakers and stakeholders; the program was appreciated by the trainees and alumni. This paper underscores the importance of the international perspective, the transdisciplinarity and the scientific networking established through the program.

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Introduction

Work disability, occurring when a worker is unable to remain at or resume work because of a health problem, is prevalent, imposes large social and economic burdens and is a major concern to workers, their families

and employers, policymakers, insurers and occupational healthcare specialists. In 2000, the costs of worldwide social exclusion from the workplace of people with disability was estimated at an annual loss of US\$1.37 to \$1.94 trillion in gross domestic product (GDP) [1].

Researchers in the field of work disability prevention (WDP) are challenged by the complex interplays involving several dimensions and partners (employers, insurers and healthcare providers) interacting with the patient/worker in the disability process [2, 3]. Aside from the usual skills required of a researcher, an in-depth knowledge with methodological rigor of such a complex problem and requires special skills in order to address the various perspectives of the many stakeholders, socio-political challenges, ethical issues, intervention costs, and systemic variations [2]. Hence, addressing this systemic and multi-dimensional disability problem requires adopting a transdisciplinary perspective. However, no training programs offering appropriate transdisciplinary training in WDP existed until 6 years ago, and there was a shortage of resources in this field [4].

In order to build capacity in the field, 24 Canadian researchers joined together in 2001 to develop and implement the first transdisciplinary advanced training program in WDP. The program is supported by the Canadian Institutes of Health Research, the Fonds de la recherche en santé du Québec (FRSQ), the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST) and the Réseau provincial en adaptation-réadaptation (REPAR), and named the WDP Canadian Institutes of Health Research (CIHR) Strategic Training Program [4].

The purpose of this paper is to present a descriptive portrait of the program's performance over the past 5 years, as well as trainees' and alumni's perspectives on the WDP CIHR Strategic Training Program.

Overview of the Training Program

The WDP CIHR Strategic Training Program is intended for PhD trainees and post-doctoral fellows already registered full-time in a Canadian or recognized foreign university, or young researchers (less than 5 years after PhD completion). Hence, the WDP program is superimposed onto a regular PhD or post-doctoral training program where the student's main interest may lie in various WDP-related fields, such as clinical rehabilitation, disability management, the epidemiology of work disability, program development and evaluation, or rehabilitation ergonomics. Thanks to the funding received from the CIHR, FRSQ, IRSST and REPAR, tuition fees, travel and accommodation expenses are covered for trainees.

The main objective of the program is to enable the trainees to act as researchers in the field of WDP with a transdisciplinary perspective. More specifically, the course content and educational methods have been developed to promote the acquisition of five key competencies important to the process of becoming a WDP researcher: (1) analyzing a disability problem through research that uses a transdisciplinary and contextual perspective to maximize research relevance and impact; (2) integrating relevant ethical and legal issues in the design and implementation of WDP research; (3) effectively communicating a specific research rationale and methods to other researchers in disciplines linked to the WDP field; (4) incorporating the necessary elements for development of a research approach that involves the participation of relevant stakeholders; and (5) participating in activities promoting knowledge translation and exchange.

The WDP CIHR Training Program offers part-time research training in WDP over a 3-year period, using transdisciplinary and collaborative training methods. The program is offered in English. One main theme is targeted each year: methodological challenges, socio-political challenges and ethical challenges. The trainees' own disciplinary knowledge and research projects are used to contribute to the group's transdisciplinary experience. Briefly, the program includes the following:

1. *Summer sessions*: Three consecutive intensive 2-week sessions are held in June at the Longueuil Campus of the Université de Sherbrooke (south shore of Montreal). Each session includes (1) *problem-solving activities* where trainees solve a complex and multi-factorial problem in small groups; (2) *formal lectures* given by mentors and guest speakers and focused on various WDP issues that are approached from diverse disciplines, methodologies and perspectives; (3) *seminars* where all trainees have to present their research projects to their classmates and mentors, and are assessed from a transdisciplinary perspective; (4) *stakeholder roundtables*, where employers, unions, insurers and policymakers share their perspectives; (5) *workplace visit* where the first-year trainees visit a manufacturing facility, thereby grounding their knowledge in the realities of an actual work setting; and (6) *morning forums* held each morning to address trainees' questions and comments. Training activities are assessed by the program mentors according to Université de Sherbrooke evaluation rules. Two chair-mentors are assigned to each cohort of trainees in all training activities, where they facilitate discussions, assess the process and give feedback to the trainees.
2. *E-learning*: To maximize the effectiveness of the summer training sessions, trainees are prepared for the

thematic summer session through e-courses developed on the WebCT platform.

3. *Optional courses—special projects or training practicums*: Six main training centers (laboratories) allow possible practicums in various research centers in Canada (IRSST, Centre for Action in WDP and Rehabilitation (CAPRIT), Institute for Work & Health (IWH), and the Occupational Health & Safety Agency for Healthcare in British Columbia (OHSAH)), The United States (Liberty Mutual Research Institute for Safety) and The Netherlands (EMGO Institute). Also, as special projects related to the competencies targeted by the program, the trainees can earn credits by writing scientific articles, giving presentations at meetings or developing and running knowledge translation activities, all under mentors' supervision.

Upon successful completion of the necessary credits and demonstration of acquisition of the program's competencies, the trainee receives an advanced WDP CIHR Diploma from the Université de Sherbrooke.

Methods

Data on the program's performance were collected from documents prepared by the program committee for the program assessment. Also, some data on participating mentors and trainees were retrieved from the program records.

The trainees' opinions on the WDP training program were obtained through focus groups and telephone interviews. Focus groups were held during the 2007 summer session. Two research assistants not involved in organizing the WDP training program collected data. One acted as moderator and the other one took notes. After each focus group, the research assistants met to compare and complete their notes. All focus groups were held in English and lasted a maximum of 1 h. Program alumni (first and second cohorts) received an e-mail message inviting them to participate in a telephone interview that was conducted by one research assistant in either English or French and lasted 15–45 min. Five questions were asked: (1) What aspects of the program do you appreciate most?; (2) What aspects of the program do you appreciate least?; (3) How would you assess the organization of the training program?; (4) What is the added value of this training program for you? What has been, or do you think will be, the impact of this training program on your career prospects?; (5) Are there other topics not addressed in the training program that should be added? The data collected were compiled and divided into themes to summarize the qualitative findings pertaining to each question.

Results

General Data on the Program's Performance

The program was implemented in 2002 and the first cohort was admitted in January 2003. From 2003 to 2007, five successive summer sessions have been offered, involving 34 mentors and collaborators, 29 invited speakers, and 15 stakeholders. The program was initially designed by 24 researchers from 9 Canadian universities who were also the first designated mentors. They came from different disciplines such as anthropology, biomechanics, law, epidemiology, ergonomics, occupational therapy, ethics, engineering, kinesiology, medicine, neuropsychology, physical therapy, psychology, and biostatistics. Seventy-five percent of the mentors participated as instructors and/or chair mentors during the five summer sessions, in addition to their work as advisors regarding optional courses. Since the beginning of the WDP program, the number of mentors has increased, as well as the number of countries they come from. Hence, nine new university professors in the WDP field from six different universities in Canada, The Netherlands and The United States were added as mentors. They represented six different disciplines (psychology, medicine, sociology, chiropractic, epidemiology and physiotherapy) and three were previous trainees of the WDP program.

In each summer session, the program involved the participation of recognized guest speakers in the field of WDP and/or transdisciplinarity, as well as stakeholders. The speakers came from 13 different universities and 3 research centers in Canada, The United States, Australia, France, The Netherlands and Brazil. The speakers also represented a wide array of disciplines, from economics, management and administration, to social medicine, neuropsychology, medicine, biomechanics and physics. Also, Canadian stakeholders such as employers, unions, workers' compensation boards (WCB), healthcare providers and disabled workers were invited to participate in the training activities to share their experiences and views of the field.

The CIHR's Mid-Term Assessment

As the training program is funded by the CIHR, this research funding agency has required regular reports and conducted its own mid-term assessment (after 4 years of implementation). Based on the CIHR's assessment criteria, the program was found to have achieved, and in most cases to have exceeded, its objectives. The CIHR reviewers made no negative comments or suggestions for improvement, acknowledging satisfactory progress in all six evaluation areas. The CIHR's intermediate assessment highlighted the following points: international competitiveness, success in

recruiting high-caliber trainees who are extremely productive in terms of publications and research grants, rigor in emphasizing a training experience that deepens interdisciplinary expertise, and outstanding progress towards attainment of the program objectives.

Trainees' Profiles

Since its implementation, the WDP CIHR Strategic Training Program has admitted five successive cohorts, for a total of 44 high-calibre applicants. As shown in Table 1, the cohorts were predominantly composed of females (70.5%) and the mean age was 34.4 years. The trainees were registered in 27 different universities in 8 countries. They were also trained in 14 different disciplines. Among these applicants, two dropped out of the program because they changed their career orientation. Also, as of 2007, 11 had obtained all the credits and successfully completed the diploma.

Chairmentors' Appreciation of the Program

During the summer sessions, the chairmentors mention they enjoyed the stimulating and open discussions with trainees and mentors, small group size, and contacts with stakeholders. Also, they underlined the variety of perspectives, experiences and international connections they had benefited of in teaching in this program. They suggested having less passive lectures on theoretical models and including more practical examples, "real cases" and workshops to help trainees understand and interpret the theory. They also suggested adding gender and work as a topic.

Results from Focus Groups and Interviews with Trainees

During the 2007 summer session, four focus groups were held with trainees from the third ($n = 6$), fourth ($n = 8$) and fifth cohorts ($n = 9$), and with alumni from the first cohort ($n = 4$). Also, six telephone interviews were conducted with program alumni.

Question no. 1: Most Appreciated Aspects

The most appreciated aspect mentioned by participants was the networking with mentors and trainees, which allowed them to forge long-term professional relationships. It also offered them the opportunity to develop and collaborate on new research projects. In addition, trainees appreciated the group diversity: of experience, of disciplines, of origin, and of types of research conducted. This diversity provided them with an overview of the different aspects of the

Table 1 Characteristics of trainees in the WDP program ($n = 44$)

Characteristics	
Age (mean (SD)) (years)	34.4 (8.5)
Gender (n (%))	
Female	31 (70.5%)
Male	13 (29.5%)
Discipline ^a (n (%))	
Anthropology	1 (2.3%)
Education and rehabilitation	1 (2.3%)
Epidemiology	5 (11.4%)
Ergonomics	4 (9.1%)
Ethics	1 (2.3%)
Kinesiology/exercise science/human movement sciences/biomechanics	6 (13.6%)
Medicine	1 (2.3%)
Nursing	2 (4.5%)
Occupational therapy	2 (4.5%)
Physiotherapy	12 (27.3%)
Psychology	7 (15.9%)
Public health	1 (2.3%)
Sociology	1 (2.3%)
Country of university attended (n (%))	
Canada	23 (52.3%)
Netherlands	8 (18.2%)
Australia	4 (9.1%)
Sweden	1 (2.3%)
Denmark	4 (9.1%)
United States	2 (4.5%)
Germany	1 (2.3%)
Brazil	1 (2.3%)
Status (n (%))	
PhD trainee	32 (72.7%)
Post-doctoral fellow	4 (9.1%)
Young researcher or university professor	8 (18.1%)

^a Trainees may combine several disciplines in their research interest. In this table, only one discipline per trainee was retained

problem as seen from outside their own discipline and region/country. Also, having feedback from trainees coming from different disciplines and using different disciplinary languages was considered a helpful experience that facilitated communication with people from other disciplines. The fact that this program is unique and that it focuses on knowledge translation (not just transfer) were mentioned as positive aspects.

In general, the environment/atmosphere was considered as positive and open, which allowed room for collaboration between trainees. They also appreciated the small group size, the high scientific level of the program and the rigorous selection of the applicants. The caliber and number of mentors and the value of the close relationships with the mentors were mentioned as well. Having close contact with

international speakers and renowned researchers was also appreciated.

Concerning the program activities, the morning forum was regarded as a good time for exchange, the e-learning enabled better time management, the practicum offered the opportunity to gain a new perspective in another research environment, the workplace visit was appreciated, and the stakeholders' panel provided a better understanding of the stakeholders' perspectives.

Question no. 2: Least Appreciated Aspects

Although the e-course was considered worthwhile as a means of obtaining information and preparing for tasks, the system used was criticized as being not "user-friendly." Also, the chat room and group work via the e-course were considered difficult due to the different time zones of the participating trainees' countries and each student's availability. Some also mentioned that the connection between the e-course and the summer session was not clear.

The information available on optional courses was judged insufficient by some trainees who felt they did not have enough guidance regarding the courses options, mentors, and deadlines. With regard to the summer session, several trainees commented that some of the compulsory readings were outdated and that insufficient time was allowed for reading the articles and for interacting with the speakers. Some questioned the validity of the requirement of having to ask questions every day in the morning forum, and commented that the course content was too focused on low back pain. Also, others mentioned that a few lecturers did not cover their topics at as high a level as expected, were not practical enough or did not have an international perspective.

Several alumni considered that the program was too credit-based and course-based, and found that too much work was required given the number of credits allotted and that too short a time was allowed for assignments. In the first years of the program, peer evaluation in the seminars was used. This was regarded negatively as it created competition, focused on performance and had an adverse impact on the learning environment/atmosphere. Also, some emphasized that the evaluation criteria were not clear enough, that little feedback on homework was given by mentors and that there was a need to standardize the grading system since the mentors came from different countries.

Question no. 3: Assessment of the Program Organization

In general, the trainees appreciated how the program was organized and that care was taken to ensure that things ran smoothly. Some comments about the program facilities

were also made. The compressed format of the summer session in June was considered intense but appropriate. Some trainees would have liked more opportunities for the three cohorts interacting together.

Some alumni commented on the fact that it was hard to stay in touch with the network once the three summer sessions were over. Their access to the web course was cut off and they had no information on the options available to them after the end of the program. They suggested that a web platform be created where trainees and alumni could meet.

The language issue was also mentioned with regard to the information provided on program registration procedures, given that the forms to be filled out and the diplomas issued by the Université de Sherbrooke were all written in French. Also, some participants would like to have more information about what costs were covered by the program, more guidance regarding visa requirements, and a more effective administrative process. Finally, some suggested developing a logo that could be used to advertise the program (e.g., on posters), including mentors from more disciplines (such as nursing) and admitting more trainees each year in order to offset drop-outs.

Question no. 4: Added Value of the Program

Several of the comments made in the Most Appreciated Aspects section (question no. 1) were also mentioned here as an added value. Hence, making new contacts and creating a network with mentors and trainees was considered helpful in terms of developing collaborative research and international collaboration. The possibility of talking and collaborating with people from different fields gave a sense of not being isolated in their own discipline and opened them up to other disciplines.

Acquiring new knowledge as well as an international perspective helped them to form a broader view of work disability and gain better insight into the research done to date, approaching the problem differently, taking home new ideas (to discuss with colleagues) and forming new ideas for research projects. Also, it made them more aware of other types of disabilities.

Some participants saw other favorable effects, such as the possibility of writing joint articles or developing joint projects with other trainees or mentors. Also, some mentioned that the program helped improve their ability to give presentations in public and their English language skills (for those with English as their second language), while offering an opportunity to travel. Another added value mentioned was that of gaining a broader perspective than researchers who have not taken the program, since several topics, such as socio-political challenges in WDP, are not addressed in other programs.

Some trainees mentioned that the training could be included in their *curricula vitae*. Others commented that their career prospects did not change and that their universities did not value the program. Still others mentioned that it helped them to plan their research career, earn a promotion, or obtain a research fellowship or a new position, as the program helped them use their contacts and knowledge. Also, some mentioned that it gave them more confidence as researchers working in the WDP field and in seeking research grants.

Question no. 5: Topics that Should be Added to the Program

Several new topics were suggested by trainees for inclusion in the program. Some proposed offering a course on work disabilities in developing countries, on political aspects, and on human resource management. Also, although they recognized the importance of focusing on theories, some suggested the need to address more practical/pragmatic aspects of research, such as computer software used in research, how to write articles, how to prepare grant applications, how to “sell” research projects to stakeholders and how to approach and communicate with stakeholders (marketing/negotiation strategies). Some indicated that they would like to see a researchers’ panel (along the same lines as the stakeholders’ panel), where they could discuss their research projects. A few also wanted the program to address biological, anatomical and structural issues in order to facilitate communication with healthcare professionals. Finally, some said they would like the program to address the issues of what can be done when a return to work is impossible and how to improve quality of life.

Trainees requested that more time be allocated to certain topics already included in the program, such as the economic aspect of work disability and how to reconcile the various concerns of the different systems presented (healthcare, legal, workforce), that the legal issue be addressed from a more international perspective, that there be more methodological courses (they expected more quantitative and qualitative studies), that there be another workplace visit, that the psychosocial issue be addressed in greater depth, and that the strategies used to conduct research in the workplace and the means used to implement them also be covered.

Discussion

As a whole, the collected data indicated that the program implementation went well, with good participation by the mentors, guest speakers and stakeholders and that the program was appreciated overall by the trainees and

alumni. They also underscored the importance that trainees place on the international perspective, transdisciplinarity and the networking opportunities made possible through the program.

Over the years, the WDP program has consolidated its international foundations and network thanks to the involvement of international mentors and trainees. For instance, the trainees, alumni and mentors have come from Canada, Australia, Germany, France, Denmark, The Netherlands, The United States, Sweden and Brazil. This geographical distribution, along with the diversity of disciplines, provides an invaluable opportunity for knowledge exchange and for the development of joint projects by trainees and mentors, who can broaden their perspectives, networks and approaches. Furthermore, research in the field is disseminated through the WDP community’s participation in conferences, projects and research centers, which in turn fosters the growth of research networking and opens up new opportunities for all involved.

Transdisciplinarity is mandatory in the multidimensional field of WDP, which requires the involvement of numerous disciplines with a shared theoretical model [2, 5]. In our view, transdisciplinarity is the capacity of scientists and stakeholders from diverse disciplines and perspectives to form alliances in order to pool their specific expertise on the common field. Although transdisciplinarity is not easy to embrace in an educational context, the experience was facilitated by the transdisciplinary nature of the group of mentors and their previous experience working on collaborative projects that focused on the same disability problem from their different perspectives, as well as by the fact that the trainees came from various disciplines. Transdisciplinarity was implemented in a way that allowed for a common understanding and collaborative efforts undertaken with rigor, openness and tolerance [6]. Trainees further acknowledged that this program changed their perspectives, their understanding of other disciplines and their approach to WDP problems.

Due to this transdisciplinary experience, trainees and alumni from different disciplines developed a real, spontaneous network: some have maintained continuous contacts via email and a web-based chat group, and have collaborated on new research projects and publications (40 joint articles have been published from 2003 to 2007). These activities demonstrate the impact and value of the networks developed between mentors and trainees, which in turn serve to strengthen research capacity in this field. Some alumni criticized the fact that this networking ceased after the three summer sessions were over. More effort should be made to preserve the international research network created during the program, for example, by developing an interactive website or organizing meetings through videoconferencing.

One strength of this study was that it gathered information from a wide variety of trainees, including some who have already finished the program and all those who are starting it. It is therefore possible that not all the viewpoints documented in this paper are shared by all trainees, which explains why some points of view may be contradictory. Changes have already been made to the program in light of alumni's comments during the program evaluation: the peer evaluation was no more part of the marks, the introduction of disability mental health and cancer survivors and more information given on optional courses. The aim of this paper was to present an overview of all the trainees' points of view, regardless of the number of times they were reported. Also, non-respondents ($n = 11$) may have voiced different comments on the program. This study was limited to the trainees' perspectives. A more complete picture might be obtained by surveying the mentors and guest speakers for their opinions on the program.

Conclusion

Over the past 5 years, the WDP CIHR Strategic Training Program has attracted trainees, mentors, guest speakers and stakeholders from various disciplines and many countries, and has delivered high-quality transdisciplinary research education in the WDP field. Training researchers in this field makes it possible not only to develop research capacity, but also to “train the trainers,” allowing for expansion of knowledge translation in a field where considerable implementation efforts are required in the future if evidence-based practice in work disability is to be disseminated to workers, industries, insurers and healthcare providers [2].

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References

1. Metts RL. Disability issues, trends and recommendations for the World Bank. Washington: World Bank; 2000.
2. Loisel P, Buchbinder R, Hazard R, Keller R, Scheel I, van Tulder M, et al. Prevention of work disability due to musculoskeletal disorders: the challenge of implementing evidence. *J Occup Rehabil.* 2005;15(4):507–24. doi:10.1007/s10926-005-8031-2.
3. Frank J, Sinclair S, Hogg-Johnson S, Shannon H, Bombardier C, Beaton D, et al. Preventing disability from work-related low-back pain—new evidence gives new hope—if we can just get all the players onside. *Can Med Assoc J.* 1998;158(12):1625–31.
4. Loisel P, Côté P, Durand MJ, Franche RL, Sullivan MJ, Baril R, et al. Training the next generation of researchers in work disability prevention: the Canadian Work Disability Prevention CIHR Strategic Training Program. *J Occup Rehabil.* 2005;15(3):273–84. doi:10.1007/s10926-005-5936-8.
5. Loisel P, Durand MJ, Berthelette D, Vézina N, Baril R, Gagnon D, et al. Disability prevention—new paradigm for the management of occupational back pain. *Dis Manage Health Outcomes.* 2001; 9(7):351–60. doi:10.2165/00115677-200109070-00001.
6. de Freitas L, Morin E, Nicolescu B. Charter of transdisciplinarity. International Center for Transdisciplinary Research, adopted at the First World Congress of Transdisciplinarity, Convento da Arrábida, Portugal, November 2–6, 1994. Available from <http://nicol.club.br/ciret/english/charten.htm>. Accessed 24 Dec 2008.