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Evaluation of an interdisciplinary training course in eye health in early intervention: participants' perspective

Avaliação de curso de formação interdisciplinar em saúde ocular na intervenção precoce: perspectiva dos participantes

Evaluación de un curso de formación interdisciplinar sobre salud ocular en intervención temprana: perspectiva de los participantes

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This is a study with a qualitative-quantitative, descriptive-explanatory and longitudinal approach, carried out between April and December 2018, in the city of Curitiba, in the state of Paraná, Brazil. It aimed to evaluate an interdisciplinary training course in attention to the eye health of children with developmental disorders or multiple disability, for early intervention professionals. Questionnaires and focus groups were applied, and exploratory-descriptive statistical analysis, application of tests and content analysis were performed. 35 professionals from health and education participated. The results were organized into the *Reaction*, *Learning* and *Behavior* phases, and *Learning and Impact predictors and correlation between levels*, namely: positive reaction to the course and the instructor; increase in average learning; impact on behavior at work; motivational variables, instrumental value of the course and the use of cognitive-affective strategies as predictors of impact at work; and positive reaction/impact correlation. The focus group reports reinforce and deepen the quantitative results. The importance of conducting interdisciplinary courses that add knowledge and encourage interprofessional collaboration is highlighted.
Descriptors: Health human resource training; Evaluation studies as topic; Interdisciplinary placement; Eye health; Early intervention, Educational.

Este é um estudo com abordagem quali-quantitativa, descritiva-explicativa e longitudinal, realizado entre abril a dezembro de 2018, em Curitiba, Paraná, tendo como objetivo avaliar um curso interdisciplinar de formação em atenção à saúde ocular de crianças com alterações no desenvolvimento ou múltipla deficiência, para profissionais da intervenção precoce. Aplicou-se questionários e grupo focal e foram realizadas análise estatística exploratória-descritiva, aplicação de testes e análise de conteúdo. Participaram 35 profissionais, da saúde e da educação. Os resultados foram organizados nas fases de *Reação, Aprendizado* e *Comportamento* e, *Preditoras de aprendizagem e impacto e correlação entre níveis*, a saber: reação positiva ao curso e ao instrutor; aumento da média de aprendizado; impacto no comportamento no trabalho; variáveis motivacionais, de valor instrumental do curso e de uso de estratégias cognitivo-afetivas como preditoras de impacto no trabalho; e correlação positiva reação/impacto. Os relatos do grupo focal reforçam e aprofundam os resultados quantitativos. Destaca-se a importância da realização de cursos interdisciplinares que agreguem saberes e fomentem a colaboração interprofissional.
Descritores: Capacitação de recursos humanos em saúde; Estudos de avaliação como assunto; Práticas interdisciplinares; Saúde ocular; Intervenção educacional precoce.

Este es un estudio con enfoque cualitativo-cuantitativo, descriptivo-exploratorio y longitudinal, realizado entre abril y diciembre de 2018 en Curitiba, Paraná, Brasil, con el objetivo de evaluar un curso interdisciplinar de formación en atención a la salud ocular de niños con cambios en el desarrollo o discapacidades múltiples, para profesionales de la intervención temprana. Se aplicaron cuestionarios y grupos de discusión y se realizó un análisis estadístico exploratorio-descriptivo, la aplicación de pruebas y el análisis de contenido. Participaron 35 profesionales de la salud y la educación. Los resultados se organizaron en las etapas de *Reacción, Aprendizaje* y *Comportamiento* y *Predictoras de aprendizaje e impacto y correlación entre niveles*, a saber: reacción positiva al curso y al instructor; aumento del promedio de aprendizaje; impacto en el comportamiento en el trabajo; variables motivacionales, de valor instrumental del curso y uso de estrategias cognitivo-afectivas como predictores del impacto en el trabajo; y correlación positiva reacción/impacto. Los informes del grupo focal refuerzan y profundizan los resultados cuantitativos. Se destaca la importancia de los cursos interdisciplinarios que agregan conocimientos y fomentan la colaboración interprofesional.
Descriptores: Capacitación de recursos humanos en salud; Estudios de evaluación como asunto; Prácticas interdisciplinarias; Salud ocular; Intervención educativa precoz.

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INTRODUCTION

The understanding that health is multi-determined with actions and services articulated to achieve comprehensiveness in care requires efforts by professionals in the acquisition of skills of collaboration and teamwork[1-4], incipient perspectives in training courses, marked mainly by the logic of specialization.

Collaboration among professionals is frequently found in the approaches to interdisciplinarity, intersectoriality and interprofessionality. Despite the history of fragmentation of knowledge and actions according to specialties in different areas of knowledge, collaboration is understood as a form of mediation capable of overcoming compartmentalization and limitations[3,5] in professional practice. Intersectoriality has been presented as one of the possible ways to resolve impasses in the areas of health and education[2]. Meetings between specialists constitute a space for sharing information and epistemological ruptures, seeking interaction and implementation of a common work[6].

In the field of habilitation or rehabilitation, specifically in relation to early intervention, it is essential to add different knowledge and professionals in a collaborative practice[7,8] considering the multifactorial aspects of these programs and the clientele served. Coordination between interdisciplinary and intersectoral services in early intervention programs supports children and families in their context and over time, enabling comprehensive actions, and promoting a feeling of competence and empowerment[7,9].

The complexity of the problems that arise in the fields of health and education can lead to feelings of insecurity, impotence and uncertainties, requiring professionals to have a critical-reflective capacity, dynamism and skills and abilities for teamwork, directive aspects of professional training[6], being necessary attitudinal changes of teachers and students. Course evaluation is a tool capable of generating information and feedback to training proposals, enabling their improvement[10,11].

The aim of this study was to evaluate an interdisciplinary training course in eye health care for children with developmental disorders or multiple disabilities, for professionals in early intervention.

METHODS

This is a study with a qualitative-quantitative, descriptive-explanatory and longitudinal approach[12], carried out between April and December 2018.

Health and education professionals working in early intervention services aimed at caring for children with developmental disorders in the city of Curitiba, in the state of Paraná, or its metropolitan region were included in the study.

Participants signed the Informed Consent Form and participated in the extension course "*Atenção interdisciplinar à saúde ocular na intervenção precoce*" ("Interdisciplinary attention to eye health in early intervention), with 40 hours of attendance, seeking to sensitize professionals about interdisciplinary care.

The course proposal followed the planning-development-assessment cycle[13]. During planning, the participants answered the identification questionnaire and the structuring of the course and organization of the material for its implementation were carried out.

The development stage included the execution of the course. The contents addressed: magnitude of disability; eye health care in early intervention services; development, role of vision and impact of visual changes; functional vision; promotion of eye health and prevention of visual damage; interdisciplinarity; and the family as a colaborator. Among the pedagogical procedures were: dialogued expository classes; experiences; problem-solving exercises; reading and discussion of texts; elaboration of educational material; fixation and revision exercises.

The course evaluation was based on the model proposed by Kirkpatrick[14], specifically the reaction, learning and behavior stages. The choice for this evaluation model was based on the identification that this is a classic, consolidated, internationally known model[15] and used as a reference for evaluating experiences in Interprofessional Education - IPE[16]. In addition, it provided a logical structure for the assessment and guided the development and choice of instruments.

The reaction phase was aimed at measuring the impressions of those involved regarding the course and their participation; the learning phase sought to identify changes in the conceptualization of content (eye health and interdisciplinarity); and the behavior-related phase aimed to identify changes in behavior at work.

The data collection instruments were composed with questions in different formats (open, closed, scales), according to the baseline and the aspects to be investigated (concepts and actions) and are presented in Chart 1.

Chart 1: Evaluation phases, data collection instruments, characteristics and reliability. Curitiba, 2018.

PHASE	TOOL	CHARACTERISTICS/INTERPRETATION	Reliability
Reaction	• Course Reaction Scale (CRS)*	• Scale of 6 concepts, ranging from 'Great' to 'Poor' and 'Not applicable'; • Average values between 1 and 2 – low satisfaction; between 2.1 and 3 – moderate satisfaction; between 3.1 and 5 – high satisfaction[10].	• 0.89 (Reapro) • 0.95 (Reares)
	• Instructor Performance Reaction Scale (IPRS)*		• 0.96
Learning	• Questions Knowledge Scale	• Open and closed questions, prepared by the researchers**.	---
	• Training Instrumental Value Scales (TIVS)*	• Likert scale from 1 (Not at all important/useful) to 5 (Totally important/useful); • Average values between 1 and 2.5 – low perception of importance/utility; between 2.6 and 3.9 – moderate perception; between 4 and 5 - high perception[10].	• 0.79 (Importance) • 0,84 (Utility)
	• Motivation to Transfer Scale (MRS)*	• Likert scale from 1 (Strongly disagree) to 5 (Strongly agree); • Average values between 1 and 2.5 – low interest in transferring; between 2.6 and 3.9 – moderate interest; between 4 and 5 - high interest[10].	• 0.86
Behavior	• On-the-job Training Impact Self-Assessment Scale-Measured in Amplitude (OJTISASMA)*	• Likert scale from 5 (I totally agree with the statement) to 1 (I totally disagree with the statement); • The higher the average, the greater the perception of impact and application of what was learned[10].	• 0.93
	• Learning Application Strategies Scale (LASS)*	• Likert scale from 1 (never) to 7 (always); • Average values between 1 and 3 – never or rarely use of the strategy; between 3.1 and 5 – moderate use; between 5.1 and 7 - high frequency[10].	• 0.83 (Cognitive-Affective Strategies) • 0.92 (Behavioral Strategies)
	• Practical application issues	• Open and closed questions, prepared by the researchers**.	---

* Escales adapted from Abbad *et al*[10].

** For analysis, the questions were grouped (knowledge and frequency of practical application), classified with a 5-point Likert scale and transformed into a percentage from 0 to 100, with 0 being no knowledge/frequency of practice and 100 full knowledge/frequency of practice.

The collected data were tabulated and analyzed in different ways, including: descriptive and exploratory statistics; Mann Whitney and Pearson's Chi-square tests (5% significance level); for pre and post-course Wilcoxon test data; for correlation of the scales the Spearman coefficient; and for Alfa Cronbach reliability. SPSS 25 software was used.

At the end, a focus group was held in order to better understand the repercussions of the course. As triggering questions, the participants were asked about: What is the main

relationship of the course with daily practice? What are yourfree considerations about the course? and; Would you change anything in the course?

The meetings were recorded, transcribed and analyzed based on the content analysis of Bardin[17], going through the phases: pre-analysis; exploration of material; and interpretation of results. The categories were defined according to the phases of reaction, learning and behavior, following the 'boxes' procedure[17]. The choice of excerpts from the participants' statements was made due to the representativeness of the corresponding categorical content.

The study was approved by the Research Ethics Committee under Opinion No. 3.312.888.

RESULTS

35 professionals participated, 45.7% of which were teachers, followed by occupational therapists (17.1%), educators (14.3%), physical therapists (11.4%), among others (11.5%), therefore, the majority of education (65.7%) and with a mean age of 41 years (±10.1). Those with specialization prevailed (74.3%), who had worked for less than 10 years in early intervention (62.9%) and who identified the team in which they work as multidisciplinary (65.7%), followed by interdisciplinary (14, 3%).

Most professionals had experience with people with visual impairment (68.6%) and had previously participated in an eye health care course (60%); they worked in Specialized Educational Service Centers – Visual Impairment (37.1%), Special Schools (25.7%), rehabilitation clinic or hospital (20%), Municipal Specialized Service Center (14.4%) and in Care Primary – Family Health Support Center (8.6%).

The results were organized into the *Reaction*, *Learning* and *Behavior* phases, and *Learning and Impact Predictors and correlation between levels*.

Reaction

The averages obtained on the course and instructor reaction scales indicate great satisfaction of the participant in relation to all aspects evaluated (>3.1), with substantial answers in the categories 'Excellent' and 'Very good', as shown in Table 1.

Table 1: Course and Instructor Reaction Scales. Curitiba-PR, 2018.

Course Reaction Scale (items)	Mean	Standard Deviation	Great/Very Good (%)*	Good (%)	Average/ Poor (%)
Schedule (7)	4.5	± 0.52	89.0	8.0	3.0
Support for course development (3)	4.8	± 0.31	100	--	--
Applicability and usefulness of the course (3)	4.5	± 0.50	90.0	10.0	--
Training results (8)	4.4	± 0.51	89.0	10.0	1.0
Organizational support (3)	4.2	± 0.80	78.0	18.0	4.0
Mean	4.5	± 0.42	89.3	9.0	1.7
Instructor Reaction Scale					
Teaching performance (10)	4.6	± 0.38	93.0	7.0	--
Conte knowledge (2)	5.0	± 0.08	100	--	--
Engagement with participants (3)	4.9	± 0.20	99.0	1.0	--
Mean	4.7	± 0.28	97.4	2.6	--

* Average of participants who marked between excellent and very good.

Regarding the reaction in the focus group, theoretical density and lack of time to exchange experiences were cited as limitations of the course:

I think that what this exchange lacked a little, I left it as a suggestion [...] *because it really was a lot of theory, which I also know demands you to exchange with us* [...]. (P10)

Positive reactions to the course, methodology, material and participation itself were mentioned, highlighting:

I put it like this [...] *the importance of the material itself, of the bibliographic references* [...]. *I attend thclass, I get home and I don't remember it anymore. So I need to have some material for me to revisit, to go back to.* [...] *So I may not remember it, but I'll see and I know where to look. So it was very valid.* (P24)
[...] *So I think that everything you discussed here with us moved us. And it did, at least in my case, made me realize that I need to study it even more* [...]. (P11)
[...] *So I had this with the course, to review my practice.* (P28)

Regarding content, the following stood out: the interdisciplinary character, evidenced in statements related to the applicability of the course in different areas of knowledge and performance in the field of early intervention; fostering collaborative practices - both consistent with the course objectives; and the arrangement of themes:
I would like it for what you say, what you teach, get to be disseminated, to be placed in different areas. Because everything you mentioned is very important and it's a different look [...]. (P28)
I think this approach is cool. [...] *For us to start changing, many times we don't have that experience of that reality* [...]. *So things that can show usstrategies to work together. I think this exchange has to be intersectorial, in different realities of the municipality. It's very important and interesting. And it's also not that you can't change, it's not the same anymore. Because, for example, I almost never go to courses other than health, specific to health, so I think this exchange is very rich.* (P33)
So you can see that these things are talked about, right? [...] *one subject complements the other. Nothing is off, everything is on, everything is intertwined.* (P28)

Aspects related to the instructor's didactics were also mentioned:
I leave here doubly in love with you, your brain, and the fun, light, interesting person you are. I learned a lot, anyway. [...]. (P08)
And I realize that they are very much in need, you know, for people who understand, who have a very clear, objective speech. [...] (P32)
Is different. [...] *it was a completely different look, it really surprised me because that was not what I was expecting* [...]. (P28)

Learning

TIVS measures the importance given by the participant to rewards related to professional life and the respective usefulness of the course in achieving these results. A total mean of 3.55 (±0.73) of importance of the items evaluated and of 3.41 (±0.75) of perceived usefulness of the course were obtained, both moderate.

Among the items classified as having a high perception of importance and attributed usefulness were: solving work problems; improving performance related to the tasks of one's position; improving resume; improving performance in tasks not related to one's position.

The results obtained showed uniformity between importance and usefulness, that is, in the items considered highly important, the course presented high contribution utility. This correlation was statistically significant (p=0.001).

At this stage, questions were applied that sought to identify if there were changes in the participants' conceptualization of key course content - eye health and interdisciplinarity, as shown in Table 2.

Table 2: Pre and post extension course knowledge. Curitiba-PR, 2018.

	Mean	Deviation	Median	Min.	Max.	< 70%*	≥70%**
Pre-course knowledge	46.3	15.12	50.0	20;8	79.2	33	2
Post-course knowledge	67.7	13.11	66.7	45.8	95.8	20	15
Change	+21.4	--	--	+25.0	+16.6	-13	+13

* Number of participants with less than 70% correct answer on knowledge questions.
** Number of participants with 70% accuracy or more.

The average of 82.8% of the participants increased, of 8.6% it was maintained and the same number of participants had a decrease in average. There was a significant increase in the mean and minimum value of the knowledge score, with statistical relevance (p=0.000), indicating the acquisition of knowledge after the course.

Regarding learning, speeches emerged during the focus group that referred to the impact on knowledge:
[...] *for me it was wonderful for having many terms, this nomenclature that we get confused, differentiating concept from concept* [...]. (P10)

[...] *The issue of early intervention, interdisciplinarity, multi, uni... Anyway, what is it, what I am* [...]. (P29)

Behavior

The MRS average was 4.6 (±0.43), indicating high interest of the participants in applying contents, attitudes and strategies learned in their daily work.

To identify changes in behavior at work, we opted for the amplitude measure, which measures the indirect influence of the course on global performance, attitudes and motivation. The OJTISASMA and LASS scales were applied three months after the end of the course. The average obtained for the OJTISASMA, associated with the responses agree/totally agree (79.1%), indicates a high perception of impact at work. For the LASS, the means obtained in the behavioral and cognitive-affective factors indicate high frequency (> 5.1) and moderate (3.1 < mean < 5) of use of the strategies, respectively (Table 3).

Table 3. OJTISASMA and LASS. Curitiba-PR, 2018.

Escala	Min.	Max.	Mean	Standard deviation
OJTISASMA	2.1	5	4.1	± 0.69
LASS – Behavioral factor	2.1	7	5.6	± 1.01
LASS – Cognitive-affective factor	2.2	7	5.0	±1.13

Questions were asked regarding the frequency of performance of eye health care and interdisciplinary actions in practice, before and after the course, indicating that 74.3% of participants increased the frequency of application of these actions and a significant increase in the minimum value (p= 0.000). However, the results point to the occasional application of actions in both moments (Table 4).

Table 4. Pre-course and follow-up actions (eye and interdisciplinary health). Curitiba-PR, 2018.

	Mean	Median	Min	Max	<70%	≥70%
Pre-course actions	50.1	54.2	8.3	79.2	32	5
Follow up actions	66.0	66.7	41.7	83.3	18	17
Change	+15.9	--	+33.4	+4,1	-14	+14

Corroborating the results obtained in the OJTISASMA and LASS scales, changes in work behavior were reported during the focus group. Among the practical repercussions stood out:

[...] *I learned to do evaluations here.* [...] *With the course I was also able to adapt many materials* [...]. (P22)

[...] *I'm sure the biggest point was how now I have a team with a physio, speech, OT and psychologist, it is to develop in the team that they also need to have this care. If they have it, if they have this look and if this is interfering with the service or not.* (P35)

I think you were able to reach your goal overall. Sensitize everyone and that we could replicate this to other colleagues, teachers, other therapists and family members[...]. (P14)

[...] *In any situation I'm in, how can I look differently at the issue of looking, the issue of the eye.* [...] *So, without my wanting it, it is incorporated into my way of thinking* [...]. (P08)

Attitudinal and relational repercussions were also mentioned.

And I think that brought us closer too, you know? [...] *It changed, we got together, I think it was something we needed in the beginning.* (P21)

[...] *how much the course brought me too, this humility of recognizing that we professionals do not know everything, that we need to seek this exchange of experience with each other.* (P20)

For me, it was reviewing my practice. Because we are really vertical, we know about the subject and they [user] *come to us and I just have to inform them* [...]. (P28)

Learning and Impact Predictors and correlation between levels

The characterization, motivational (motivation for training, for learning and for transferring, instrumental value) and cognitive-behavioral variables of professionals were crossed with the scales and questions of learning and/or impact.

The characterization variables did not present a significant correlation with learning or with the impact on work, not being configured as predictors.

As for the motivational and cognitive-behavioral variables, the motivation to learn (p=0.025), the instrumental value of the course (p=0.002) and the cognitive-affective and behavioral strategies for the application of the learned (p=0.000).

Regarding the correlation between the reaction, learning and impact levels, a significant correlation was obtained between the reaction and impact scales: CRS Reapro (p=0.010); CRS Reares (p=0.000); and IPRS (p=0.005). There was no correlation between reaction and learning, as well as there was no correlation between learning and impact.

DISCUSSION

Reaction

The results obtained on participant satisfaction in relation to all aspects evaluated were similar to a study that obtained averages of 4.26 and 4.75 for course and instructor[18], respectively, and with substantial answers in the excellent and very good categories, with scores satisfaction rating of 74.4%[19]. The rates of this study were higher than those described in a study that indicated 54.03% of professionals considered the course excellent, 39.59% good and 6.38% poor[13]. And, in a survey that evaluated the training program carried out in Egypt and India, the average satisfaction with the course was 97.6% and with the instructor, 91%[20].

As for the speeches of the focus group, despite using strategies that favored interactivity (problematization, simulation)[16]; and recognizing the importance of shared learning[21], it is a challenge to change the professor's conception of their role as facilitators and encouragers of learning[19]. However, during the performance of activities in a discussion group, resistance was observed in composing groups with people who were not from the same work nucleus, even after request, limiting the possibilities of exchange of experiences, unlike the investigation that described the "[...] *availability to relate, share knowledge and work as a team*" (p.123)[19] as facilitators in conducting the course.

In the positive reactions to the course, methodology, material and participation in eye health care courses for non-ophthalmologists, adequate materials are needed, directed to reality and clientele[22], an aspect considered in this study, considering the intervention services early childhood and children with other developmental disorders and their particularities.

Training courses are for bringing new perspectives and reflections on theory and practice, so that participants verbalize reactions to review their practices and their knowledge, highlighting the mobilizing role that the course played.

Regarding the content highlighted in the speeches, the contexts and multi-determined health conditions pose complex challenges in practice, which cannot be solved by just one professional, requiring the integration of knowledge and different views on a reality and the collaboration between the professionals[6]. The statements emphasize the interdisciplinary knowledge of the course (cognitive sphere)[5], being educational actions for two or more categories of health professionals, as recommended in continuing education in health. However, few courses involve health and education, despite being sectors commonly associated in the daily routine of services that address intersectorality[2].

Health courses often contribute to the fragmentation of knowledge and the sectorialization of practices, thus, educational actions of an interdisciplinary nature are urgent and fundamental to reconnect knowledge, validate the knowledge of others and foster collaborative practices[1,4]. Regarding the arrangement of themes, the complementarity of theoretical assumptions is fundamental[18], and the contents covered in the course are consistent with those recommended[22].

In a British study, with professionals predominantly from the secondary level of care, the relationship between instructor and student positively influenced the training experience[23]. Studies highlight the role of the instructor in establishing a good interaction with students and the role of this relationship for learning and for the formation of critical professionals who

openly relate to the people they work with[4,19]. The focus group data reinforce what was found in the scales, with positive reactions to the course and the instructor.

Learning

The importance/utility relationship found was considered relevant because the course contributed more to those aspects considered important, especially those related to performance and problem solving at work. The mean of usefulness found was slightly higher than the Iranian survey, which obtained 3.26 regarding the applicability of work-related content[24].

The results obtained regarding pre and post-course knowledge corroborate studies that pointed to an increase in scores >70[19]; increase in average knowledge[15], with statistical relevance[18]; and it came close to the percentage of increase in other work[13]. The average of knowledge before the course was slightly higher than that obtained in an Iranian study (45.23) and lower than the one after the course (79.31)[24]. Unlike what was found in the reference[18], there was a decrease in the standard deviation in the post-course, indicating a decrease in the heterogeneity of knowledge. The change in the distribution of means differed from a study that indicated a decrease in means between 30 and 60, from 21 to 13[19].

The conceptual aspects reported in the speeches of the focus group reinforce the terminological issue that surrounds contents related to health and education. Health-education intersectoral communication is incipient and encounters technical-scientific and practical barriers. The terminological specificities, perspectives and training of each area do not dialogue much and end up increasing difficulties in communication between professionals[25].

It is essential that the assessment instruments at this stage address, in addition to conceptual knowledge, skills and attitudes that are expected to be promoted with training. In planning the formative action, the development objectives must be translated into instructional objectives and the instruments must identify the reach of these objectives, and not only the appropriation of the addressed content[18-19], valuing "[...] *learning and not individuals anymore fit.*" (p.137)[19]. Despite the repercussions of the course on skills and attitudes (as evidenced in the behavior phase), the instrument used primarily assessed knowledge issues.

Behavior

The perception of impact on work obtained in this study was also observed in other studies that evaluated health courses[13,18,19,26,27]. The average impact obtained was higher than studies that described averages of 2.23[18], 3.83[13] and 39[19]; similar to that obtained by another[26]; and lower than those identified (4.40/4.34) in another investigation[27]. Studies have also highlighted items such as taking advantage of the opportunity for application[11,18,28], frequent use[11,20], reduced errors[11,18], increased motivation[28] and self-confidence[11,23,28], which in the present study had means >70% between agree/agree totally.

The average obtained for the OJTISASMA and the agree/strongly agree responses (79.1%) indicate a high perception of impact at work[10], with only one assertion with <70% in these categories and highlighting the items 'frequent use' and 'taking advantage of opportunities for putting into practice', both with a frequency >85%, higher than the average of 80% obtained in an international study regarding the frequency of use[20].

Behavioral strategies for applying what have been learned concern the "use of actions to modify the work environment to create conditions for the application of skills developed in educational actions in organizations" (p.236)[10], and cognitive-affective ones "strategies cognitive aspects to identify application difficulties, as well as affective aspects to maintain the efforts to create conditions for the application of the learned" (p.236)[10]. The following items stood out: I believe it is possible to apply the work I learned in this course; I admire people who can apply what they learn in courses at work; I look for the necessary information to apply what I learned; I identify the difficulties I encounter in the work environment to apply what I learned;

It is very important to apply what I learned in this course at work[10], all with response frequencies between frequently, very often and always > 85%.

In terms of the frequency of carrying out actions in their daily work, the average application of actions by 74.3% of participants increased, 20% decreased and 5.7% was maintained. Despite the change in average and the significant increase in the minimum value, the results point to the occasional application of actions in both moments. It should be considered that this data refers to the frequency of realization, relating to the increase in criticism in relation to the configuration of actions (knowledge). Thus, the apparent decrease in the frequency of realization for some professionals may be due to the better delimitation of actions, as observed in relation to interdisciplinary actions.

The incorporation of eye health care in the daily activities portrays the main proposal of the course: to integrate eye health in the view of health as a whole. In order to have an impact on behavior at work, training actions need to be clearly defined and relevant to training needs and practice contexts[11,18].

As observed in the speeches of the focus group regarding the practical repercussions of the course, a British study pointed to impacts related to the functions and abilities of the participants, indicating them as agents that are driving changes in the general context of work[23].

With regard to attitudinal and relational repercussions, it is possible to correlate them with two principles of Popular Education in Health addressed in the course: knowing how to listen and learning/being with the other. The first principle emphasizes that it is necessary to internalize that one is in the world with other people and that this requires recognizing, respecting and valuing the other's right to "*speak their word*"[21].

The direct implication is knowing how to listen, when communication becomes *with* the other and not *to* the other, horizontally. Learning/being with the other, considers that there is no absolute wisdom or ignorance. Two ways of not being with the other stand out: elitism (superiority of intellectual knowledge) and basism (overestimating popular knowledge and considering that the person is not fully inserted in the base, nothing can talk about it)[21]. Qualitative data indicated the attitudinal repercussions of the course. In an Iranian study, this aspect was measured quantitatively and did not change significantly[24].

References on interdisciplinarity, intersectoriality and interprofessionality point out that these approaches imply solidary relationships, of reciprocity and mutuality. The subjects involved in an interdisciplinary project need to be open to the role of learner, with internal availability to carry out a common collaborative project[1,2,5,6,29] and have the confidence to be in a non-hostile environment[3].

The impact on behavior at work is the primary direction of educational actions. The acquisition of knowledge is not enough if it does not bring about changes in the performance of professionals[28].

Learning and Impact Predictors and correlation between levels

The absence of a significant correlation between the characterization variables with learning or with the impact on work differs from investigations that identified, even to a lesser degree, the association of these factors[30] and corroborates an international study that did not identify a significant relationship between demographic variables and learning[24].

Motivational and cognitive-behavioral variables as predictors of impact at work corroborate the findings of other studies[10,30]. The results regarding the significant correlation between the reaction and impact scales support previous studies that pointed out satisfaction as predictors of impact[10,18-19]. There was no correlation between reaction and learning, unlike other studies that identified a relationship, albeit weak[10,18,19], as well as there was no correlation between learning and impact, as found in other studies[10,19], the first factor being necessary, but not sufficient for the second[15].

Although the evaluation model proposed by Kirkpatrick predicts a significant correlation between the levels, references have been showing different degrees of correlation or non-correlation between the levels[10,19].

CONCLUSION

Positive reaction to the course and the instructor was obtained; significant increase in average learning; and major impact on behavior at work. No learning predictor variables were identified. Motivational variables, instrumental value of the course and use of cognitive-affective strategies were shown to be predictors of impact at work. A positive correlation was obtained between levels of reaction and impact.

Considering the positive reactions and impact indices, it was concluded that the instrument related to learning should be focused on the skills to be developed and not on closed concepts, which is a methodological limitation of the study.

It emphasizes the need for courses that bring together not only different health professional categories, but also from other sectors, fostering interdisciplinary knowledge, intersectoral actions and interprofessional collaboration, essential for early intervention services and other health care services .

There are few studies evaluating courses in rehabilitation, indicating the need for studies that assess the effectiveness of training actions at this level of care in a systematic way like this one.

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