Assessment of perceptions of clinical management in courses oriented by competency

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Abstract *The study aims to assess perceptions of mastery of abilities in clinical management in participants of courses oriented by competency and based on active methodologies of teaching and learning, before and after the offered training process. Three conceptual frameworks were utilized: clinical management, expectation of auto-efficacy, and the holistic concept of competency. Methodologically, an electronic instrument was made available to students of the training courses, adapted to the Likert scale, in two stages: before the courses were undertaken and after their completion. The group of subjects that participated simultaneously in both stages was comprised of 825 trainees. Average, mean, standard deviation, and the Wilcoxon test were utilized in the analysis. Generally, in terms of findings, the perception of mastery of abilities in clinical management increased after the courses, proving a positive contribution of the training process of the students. Among other aspects of their results, it is concluded that the educational initiatives studied, oriented by competency and based in active methodologies of teaching and learning, can obtain the increase in perception of their participants regarding the mastery of abilities present in the competency profile, confirming the study's hypothesis.*

Key words *Assessment, Perception, Clinical management, Competency*

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Introduction

The increased closeness of administration and education to the area of healthcare that has taken place in recent decades has been supported by distinct suppositions and purposes that result in a polysemy of meanings attributed to these articulations. From a logic of cost reduction, associated with the standardization of practices and stemming from managed care, as well as a concept originating in clinical governance concerned with broadening the quality of health systems with efficiency and security, aspects of administration and education have been producing tensions and changes in healthcare[1-4].

In this field, the terminology "clinical management" was introduced to Brazil by Mendes, in the sense of "developing the technologies of administration of health condition, case management, clinical auditing, and waiting lists"[5]. In this dialogical mode, the combination of these technologies with others, stemming from the organization of integrated health systems and from an approach to health administration that encourages autonomy, with co-responsibilization of professionals and the co-administration of health services[6-10], has been broadening the guidelines of clinical management, particularly by valuing the subjectivity in the interaction between subjects in the health production process.

Beginning with this dialogue and the broadening of meanings within clinical management, a cluster of educational initiatives oriented toward combining new capacities in the fields of administration and education for health professionals are being constructed, based on the demands of administrators of the Unified Health System – SUS. In these initiatives, access, integrality, quality of care, and safety of patients and professionals have come to be addressed in a manner oriented towards: (i) production of health improvement in people; (ii) maximum benefit within the available resources (articulation and collaboration among services in order to obtain economies of scale and better cost-benefit relationship); (iii) transformation of practices with the establishment of quality standards, humanization, and safety in health care; and (iv) deepening the degree of satisfaction and confidence in SUS[11,12].

Considering this set of guidelines, the training of health professionals to perform according to this approach of clinical management cannot be reduced to a single disciplinary domain, and needs to be contextualized as much in relation to the characteristics of healthcare networks in which the participating professionals are inserted, as in the singularities of the persons under care. In this sense, the development of strategic, critical, and reflexive thought, geared toward the transformation of actual contexts in health work, is a fundamental element for a training process focusing on this concept of clinical management[11,12].

Thus, the educational initiatives concentrated in this investigation use competency profiles to select the content to be explored with the learners. The teaching-learning process takes places using triggers presented in the format of real or simulated problem-situations. The educational goal of the processing of problem-situations is the development of capacities according to competency profiles.

The profiles are expressed in areas of competency, key actions, and performances. The areas of competency characterize dimensions of professional practice that conform to a determined field of activity. The grouping of performances into associated nuclei give rise to key actions that, for their part, characterize a given work process. As actions or activities related to a professional practice, they are grounded in combinations of cognitive, attitudinal, and psychomotor capacities. These capacities should be mobilized by the professionals faced with a challenge in practice, according to context and criteria of excellence[11,12].

The educational initiatives in question utilized active methodologies, based on a constructivist approach to education, for the development of capacities that underpin the performances of the competence profile. By way of exploring the problem-situations, apart from the more specific performances of clinical management, the active methodologies were chosen as a teaching method because they facilitated the following: the valorization of prior knowledge of the participants; the promotion of bridging everyday health work problems with the situations studied; the stimulation of the search for and critical analysis of scientific information; and the promotion of reflection regarding the constructed knowledge[11,12].

In the active methodologies, the learning needs of the pupils are placed at the center of the learning process and the representations constructed by them, in the way of living life and relating to others, are brought to the center of the educational process that begins with this previous knowledge[13]. The teachers, unlike transmitters of knowledge, come to support the development of students' capacities, guided by the respective profile, considering the areas of competence and performance[14].

It is worth emphasizing that, while the active methodologies use learning triggers contextualized in the social circumstances and in the problems and challenges of health work, seeking to consider the complexity of the reality, there is a greater chance of professional development of the participants in this process if it occurs in a way compatible with a commitment to the transformation of society[14,15].

One of the ways we can evaluate if an educational proposal managed to promote the development of the proposed competence profile consists in comparing the initial perception of the mastery of abilities of those who seek training with the perceptions of these participants in light of the results of training at the end of the course.

In this sense, we are not dealing with the assessment of performance, which would require an observation of specific actions in a determined context, but of the perception of the learners about their mastery in relation to the capacities that underpin the performances.

From this point of view, the goal of this study is to evaluate perceptions of mastery of abilities in clinical management, considering the perspective of participants of courses focused on competency and based on active methodologies, before and after the offered training process.

The clinical administrative guidelines used in these courses, together with two other conceptual guideposts, form the foundation of the discussion of the findings. Orientations that qualified the competency profile in three major areas of competence were identified as guidelines: healthcare, health administration, and health education. The orientations found in the area of healthcare focused on: the improvement of quality of care in health system, expressed via (i) wholeness of healthcare, as much in biological, psychological, and social aspects as in relation to continuity of care, and (ii) articulation between the clinic, administration, and education in micro, meso, and macro health events. In the area of health administration, the guidelines point to the organization of the production process in health care, in a manner oriented toward adding value to life and health, with quality, effectiveness, feasibility, efficacy, and efficiency of care. Finally, in the area of health education: the utilization of a constructivist educational approach to promote learning by people and organizations, in the sense of the transformation of practices.

The second conceptual frame is based on the socio-cognitive theory of Bandura[16,17]. At the center of this theory, an expectation of personal efficacy is understood as the conviction that the subject has to carry out the required behavior with success to produce results. Bandura differentiates expectation of result from expectation of personal efficacy, in that the former is related to an expectation that a given behavior will lead to certain results, while the latter concerns the conviction that the necessary behavior can be carried out with success in order to produce the results[17].

The third conceptual frame regards the concept of competency and the understanding of performances as actions contextualized and carried out according to criteria of excellence, in the face of a problem in professional practice. This focus of competency emphasizes the mobilization of abilities or attributes to resolve problems and confront the unexpected in a work situation[18]. Within this conception, the holistic or integrated perspective of competency maintains that the subjectivity of the worker, as much as their psychomotor and attitudinal abilities, assume equal importance in relation to the specific knowledge in the respective area of activity[19]. However, the dialogical approach to competence, tied to the constructivist conception and the integrated perspective, considers that a competence profile in a determined era and society is the product of a social construction, woven from the tensions and contradictions resulting from the dialogical interaction, simultaneously ambiguous and complementary, between: individual-society; school-work; society-school and individual-profession; and workers-organizers, among others. In this sense, it is a construction that results in a meta-perspective[20]. The competency profiles utilized in the courses studied were constructed according to holistic perspective and the dialogical approach to competence[11,12].

In relation to the concept of competence, Schwartz[18] points to the constant interaction among the elements that constitute it, emphasizing: scientific knowledge, codified or formal; and knowledge related to the singularity of each situation. This author notes that the relation between "the scientific" and "the situation" is mediated by values, by the context, and by collective work. In the competence profiles in the courses studied, the tension between the formal and the singular, as well as between the context and the interaction with others that are present in the performance of the three areas: administration, health, and education.

Working from these initial considerations, the hypothesis of the study asserts that the courses oriented by competency and based in active

methodologies of teaching-learning manage to promote, among their results, the increase of the perception of its participants regarding the mastery of abilities, in this case focused on clinical management.

Methodology

This study is part of a larger research project – approved by the Research Ethics Committee of the Syrian-Lebanese Hospital – that constitutes an *ex ante* and *expost* assessment with a target audience of specialization courses that have clinical management as one of their objectives. The analysis turns to the difference of perceptions of the domains that the courses intend to modify in the target group. This is a non-experimental group, in that the study group cannot be compared to a control group[21]. In the larger research project, triangulation[22] between quantitative and qualitative methods is used, although in this text we work only with the quantitative approach.

The research involved trainees in eight courses of specialization, promoted by the Syrian-Lebanese Institute of Teaching and Research of the Syrian-Lebanese Hospital, in partnership with the Ministry of Health. These courses occurred in the period of August 2013 to December 2014, happening non-simultaneously. The courses were the following: (1) Clinical management in the Health Regions/2nd Edition (GCRS/2nd Edition); (2) Clinical management in the Health Regions/3rd Edition (GCRS/3rd Edition); (3) Health Regulation in the SUS/2nd Edition (RSUS/2nd Edition); (4) Regulation in Health in the SUS/3rd Edition (RSUS/3rd Edition); (5) Management in Health Surveillance/2nd Edition (GVISA/2nd Edition); (6) Management in Public Health Emergencies (GESP); (7) Health Education for SUS Preceptors/2nd Edition (RSUSPRECP/2nd Edition); and (8) Health Education for SUS Preceptors/3rd Edition (PRECP/3rd Edition).

In this study – the quantitative part of the aforementioned research – an electronic instrument specifically constructed for the investigated objectives was used, and applied in two moments: before the realization of the courses and at the end of them. The instrument was structured in three parts: characteristics of the research subjects (Part 1); open question about the concept of clinical management (Part II); and questions about the perception of mastery in clinical management (Part III). For this final part, performances oriented to clinical manage-

ment were identified in the competence profiles of the courses studied. From these were selected combinations of abilities that pointed to a competent practice in clinical management. The analysis of questions from the first part of the instrument was presented in the form of tables with absolute and proportional distribution. The second part of the instrument, which is not the subject of this article, was given a treatment of Qualitative Research.

The assessment of perception of mastery (Part III) was carried out by way of an adaptation of the Likert scale[23]. In this version of the scale, the degree of mastery was expressed in positive or high values – associated with declarations of agreement – and negative or low values – related with declarations of disagreement. The mastery of capacities were established using actions common to all of the courses. For each of the twenty questions or variables, relative to the mastery of capacities (Part III), there were five options for answers: "Did not master"; "Mastered a little"; "Mastered"; "Mastered averagely"; and "Mastered with excellence."

Of the twenty variables, six were relative to the area of health care: (1) identify health needs of a person; (2) identify health needs of a group or a population; (3) construct therapeutic plans/projects based on the needs of people; (4) construct plans based on the needs of groups or populations; (5) promote assistance that integrates the biological, psychological, and sociocultural dimensions; (6) match health care plans to the context of the person or the local reality. Another nine variables referred to the area of health administration: (1) promote negotiations and consensus building; (2) identify possibilities and difficulties for the execution of a healthcare plan; (3) monitor and evaluate the development and results of healthcare plans; (4) participate in a team for the development of health actions; (5) coordinate a team for the development of health actions; (6) promote the articulation of health actions and services, in such a way as to construct a health network; (7) promote the improvement of quality and safety of healthcare; (8) organize the work process using user embracement tools with classification of risk, lines of care, matrix support, case management, clinical audits, waiting lists, and individual therapeutic projects; (9) utilize concepts of efficacy, efficiency, and effectiveness for the improvement of process in health work. Finally, five variables approached abilities in the area of health education: (1) consider and take advantage of the previous knowledge of

patients, family members, caretakers, and other health professionals; (2) utilize day-to-day health work to contribute to the training of students and other health professionals; (3) access remote databases and utilize virtual platforms for distance education; (4) base actions on scientific evidence, and (5) listen to and tolerate ideas and opinions different from your own opinions.

Each one of these options was assigned values, respectively, between 1 and 5. The total score was obtained by the sum of the values of the scores of twenty variables, and the summation measures were calculated (average, median, standard deviation, among others).

First, before the start of activities with specific course content, 2,016 trainees responded to the instrument, corresponding to 23.1% of those who matriculated. Second, after the completion of the courses, the quantity of responses was 2,386 students, corresponding to 35.3% of those that completed the course. In relation to those who participated in both stages, the quantity was 825 trainees, corresponding to 12.2 of those who concluded the courses (Table 1).

With the goal of verifying modifications in the evaluated abilities, the participants who responded to the two stages of research, which correspond to the subjects investigated in this research, had their responses paired, and an analysis of these results was carried out. The Wilcoxon signed-rank test for paired samples[24] was used, using a 5% level of significance, to verify possible differences in each of the twenty variables related to the abilities investigated in the data collection instrument and also in the total score. First, the possible increase in the median score of these abilities after the course was evaluated. Afterwards, possible differences in these scores were verified, according to region of residence and the course taken.

Results

Table 1 presents the distribution of trainees according to the eight courses researched. It can be observed that 77.6% of those enrolled completed their courses. This percentage varied from 72.4% in the Course of Administration of Public Health Emergencies (GESP) to 87.2% in the Course of Management of Health Surveillance (GVISA)/2nd Edition. In relation to the students that participated in the two stages of research, the low percentage of respondents in the courses GVISA/2nd Edition (4.7%) and GESP (4.1%) is noteworthy. Perhaps this low percentage is due to the fact that, at the end of the courses, there had not been sufficient dissemination that the final stage of the research was available in the courses' platforms. Evans and Mathur[25] observe that, to the contrary to popular belief, online surveys do not always obtain a higher rate of response in relation to other types of surveys. Sometimes these surveys achieve worse rates than those of other types. The cited authors argue that the reasons for this occurrence deserve to be studied further.

In relation to the respondents that participated in the two stages of research, they were pre-

Table 1. Distribution of enrolled students, graduates, and those who participated in the two research phases per course.

Course	Enrolled students	Graduates		Respondents	
	N	n	%*	n	%**
PRECP/3rd Edition	1593	1198	75.2	182	15.2
PRECP/2nd Edition	952	716	75.2	43	6.0
GCRS/3rd Edition	1507	1210	80.3	228	18.8
GCRS/2nd Edition	941	722	76.7	71	9.8
GVISA/2nd Edition	467	407	87.2	19	4.7
GESP	912	660	72.4	27	4.1
RSUS/3rd Edition	1462	1162	79.5	175	15.1
RSUS/2nd Edition	884	689	77.9	80	11.6
Total	8718	6764	77.6	825	12.2

* Percentage calculated in relation to the total enrolled students. ** Percentage calculated in relation to the total graduates.

dominantly female (83.4%). The age range of 26 to 35 years was the most frequent (41.0%), followed by the age-range of 36 to 45 years (32.1%). More than half self-identified as white (58.2%), and the most frequent region of residents was the Southeast (35.2%) (Table 2).

Regarding the background of the research subjects, the predominance of undergraduates and specializations/residencies in the area of health (78.3% and 48.5%, respectively) is noteworthy, especially Nursing (45.5% and 31.3%, respectively). Regarding the courses *stricto sensu,* it is observed that the great majority, at the time of data collection, did not possess masters (89.0%) or doctorates (97.9%) (Table 2).

In relation to the time of experience in the area of health administration, it is observed that the majority of subjects possessed between one and less than five years of experience (33.8%), followed by those that possessed from five to less than ten years (21.9%), and those who did not possess this type of experience (21.8%). The majority of subjects indicated more than ten years of experience in the area of health care (38.7%). Among these respondents, 29.1% stated they did not possess experience in the area of health education, while 32.6% stated a period of experience between one and less than five years. Approximately half of the respondents did not possess research experience (48.4%) and 24.6% reported between one and less than five years of research experience (Table 3).

Concerning the perception of mastery of abilities evaluated, the application of the Wilcoxon test for paired samples pointed to differences in the total scores in the two phases of the research, to the level of 5% significance. The same behavior was verified for the twenty variables analyzed that yielded the total score (p < 0.001). The median score of the differences was 9 units, and thus based on this information we can conclude that there was a significant increase in the perception of mastery of abilities evaluated (Table 4).

Significant differences were found in the total scores of all the regions of residence, at the level of 5% significance. In analyzing each of the described variables in isolation, according to region of residence, only two items did not present significant differences: *listen to and tolerate ideas and opinions different from your own opinions* in the North Region (p = 0.073) and *identify health needs of a group of people or a population* in the Center-West Region (p = 0.170) (Table 4). Based on the ideas of Schwartz[18], we can consider that these combinations of abilities relate to the in-

Table 2. Absolute and proportional distribution of the interviewee profiles.

Variable	N	%
Sex		
Male	137	16.6
Female	688	83.4
Age-Range		
Under 25 years	26	3.2
26 to 35 years	338	41.0
36 to 45 years	265	32.1
45 to 55 years	176	21.3
56 to 65 years	19	2.3
Over 65 years	1	0.1
Race/Color		
Asian	22	2.7
White	480	58.2
Indigenous	3	0.4
Brown	299	36.2
Black	21	2.5
Region of residence		
North	107	13.0
Northeast	229	27.8
Southeast	290	35.2
South	114	13.8
Center-West	85	10.3
Discipline		
Administration	32	3.9
Biology	17	2.1
Nursing	375	45.5
Pharmacology	31	3.8
Physiotherapy	30	3.6
Speech Pathology	3	0.4
Medicine	55	6.7
Veterinary Medicine	4	0.5
Nutrition	13	1.6
Other Area	147	17.8
Psychology	53	6.4
Social Services	58	7.0
Occupational Therapy	7	0.8
Specialization/Residence		
Administration	46	5.6
Health	400	48.5
Other Area	252	30.5
None	127	15.4
Masters		
Administration	3	0.4
Health	45	5.5
Other Area	43	5.2
None	734	89.0
Doctorate		
Health	4	0.5
Other Area	13	1.6
None	808	97.9

terventions that require exchanges of opinions/ideas, approached in a direct way in the first item and in an indirect way in the second. Both imply the confrontation between different values and perspectives, considering the involved subjects and their reading of a given situation. Although this is a dimension of fundamental importance in the conception of competence, it is also the most difficult one to access in the educational initiatives. Even considering that the second item also implies a more specific component of knowledge related to the area of health, the result found in this variable was not observed equally in others with the same characteristic. Taken together, this can reflect difficulties relative to the specific training of the students.

In relation to the training (undergraduate in the area of the health or other areas) and experience in health management, the graduates in Administration present differences among the total scores in the two phases of research. However, only in eleven of the twenty evaluated abilities were such differences observed (p < 0.05). For graduates in the area of Health and also for graduates in other areas different from Health or Administration, differences in the two phrases of research were observed (p < 0.05) in all of the abilities evaluated and also in the total score.

For all the categories in the variable related to time of experience in Health Administration, differences in the total scores and in each of the abilities evaluated were observed in both phases of the research. Significant differences were also found in the total scores and in each of the abilities evaluated in the male and female sex (p < 0.01).

Finally, significant differences were found in the total scores in all of the courses, at the level of 5% significance (Table 5). The course of Administration of Public Health Emergencies, while showing an increase in abilities, presented a lower number of items when the total score was analyzed, with a significant increase in abilities after it was carried out, with between 7 and 20 items analyzed. Of the 20 variables analyzed, two of them demonstrated insignificant results in four courses each. These are: *to participate in a team for the development of health actions* and *to listen*

Table 3. Absolute and proportional distribution of experience of respondents by area.

Experience	Health Administration		Healthcare		Health Education		Research	
	n	%	n	%	N	%	n	%
None	180	21.8	56	6.8	240	29.1	399	48.4
Less than one year	56	6.8	22	2.7	93	11.3	102	12.4
One to less than five years	279	33.8	221	26.8	269	32.6	203	24.6
Five to less than ten years	181	21.9	207	25.1	135	16.4	86	10.4
More than ten years	129	15.6	319	38.7	88	10.7	35	4.2

Table 4. Summary measures for the sample of differences (phase 2 – phase 1) of the total score* in the two phases of research according to Course and Total.

Categories	North	Northeast	Southeast	South	Center-West	Total
Total respondents	107	229	290	114	85	825
Minimum value	-22	-20	-29	-19	-24	-29
Maximum value	43	54	41	41	35	54
Average	8.8	10.0	8.5	10.3	8.3	9.2
Median	9.0	9.0	8.0	10.0	6.0	9.0
25th Percentile	0.0	2.0	1.0	4.0	-0.5	2.0
75th Percentile	17.0	17.0	15.0	17.0	17.0	16.0
Standard Deviation	12.6	11.6	12.3	11.6	11.6	12.0

* The total score was formed using the sum of responses regarding the mastery of each of the twenty items about abilities for each of the phases.

and tolerate ideas and opinions different from your own opinions.

Discussion

It is worth emphasizing that, while the courses investigated have been oriented by competence, the investigative focus was not given to the assessment of performance that would require an analysis of actions. Apart from this aspect, Schwartz[18] calls attention to the degree of difficulty in evaluating competency, in light of the nature of the three dimensions that comprise it. These are: codified knowledge, produced by science; historical knowledge, translated in the singularity of the situations; and relational knowledge, expressed by the values constructed in the interactions of man with the environment. In spite of the difficulties, the author emphasizes the need for us to confront the challenge to attempt it.

In this sense, various studies have looked for a better translation of the competence profile in a way that can express activities of professional work that can be taken as representative of a competent practice, much more than educational intentionalities frequently reported as indicative of a competence profile[26]. Considering the need for a better expression of activities that translates what should really be done in a competent practice, the twenty variables elaborated respond to this attempt and, initially, the perception of the trainees was investigated for each of these variables in relation to the mastery of abilities at their foundation.

Thus, the investigated variables interpreted activities that represent the particular concept of clinical management, taking into account the existing polysemy around this concept[3]. In this way, as specificities of the concept utilized, we can emphasize (i) in the area of healthcare: the orientation of care to the needs of individual and collective health, as much as the identification of biological, psychological, and social dimensions as in the elaboration of care plans in line with the identified needs, as well as the interaction of the different perspectives of those involved; (ii) in the area of health administration: facing problems and taking advantage of opportunities for the production of healthcare with integrality, quality, efficiency, efficacy, effectiveness, and safety, giving emphasis to teamwork and healthcare networks; and (iii) in the area of health education: respect for the diversity of values and previous knowledge of people, the problematization of challenges in health work, and the use of scientific evidence and reflexive spaces to promote the transformation of practices. Particularly, in the area of education we note a strong correspondence between the abilities in this area and those stimulated by the use of teaching and learning methodologies.

In focusing the opinion of the trainees on their mastery of abilities for a practice considered competent in clinical management, we seek to give visibility to their perceptions, before and after courses oriented by a determined competence profile and teaching methodology. In this sense, by using a self-assessment of mastery and not a verification of performance, we seek to identify, in the perspective of the trainee-evaluator themselves, their perception of displacement, in light of the activities that were considered descriptors of a competent act[26].

In relation to the analyzed results, the perception of mastery of abilities in clinical manage-

Table 5. Summary measures for the sample of differences (phase 2 – phase 1) of the total score* in the two phases of research according to Course.

Categories	Cursos							
	PRECP/2nd Edition	GCR/ 2nd Edition	GVISA/ 2nd Edition	GESP	REG/ 2nd Edition	PRECP/ 2nd Edition	GCR/ 2nd Edition	REG/ 3rd Edition
Total respondents	43	71	19	27	80	182	228	175
Minimum value	-14	-20	-7	-14	-19	-25	-18	-29
Maximum value	36.0	38.0	43.0	32.0	36.0	41.0	54.0	46.0
Average	10.3	9.5	12.9	5.9	9.3	8.8	11.0	6.9
Median	9.0	10.0	11.0	5.0	9.0	7.5	9.0	6.0
25th Percentile	2.0	0.0	1.0	-2.0	1.0	2.0	3.0	0.0
75th Percentile	18.0	17.0	23.0	11.0	15.8	15.0	17.0	14.0
Standard Deviation	11.1	11.6	14.2	10.2	11.6	11.8	11.9	12.5

* The total score was formed using the sum of responses regarding the mastery of each of the twenty items about abilities.

ment increased after the courses, proving a positive contribution of the process in the training of the students. In this sense, with a basis in the conceptual framework of Bandura[16,17], it can be said that the courses – oriented by competence and based on active methodologies of teaching and learning – contributed to the increase of the perception that the trainees had of mastering and mobilizing abilities related to a competent practice in clinical management.

The increase of the perception about this mastery, in spite of there being a significant portion of trainees with a background outside the area of health, can possibly be attributed to the use of methodologies that promoted the engagement and commitment of these participants with their learning. Apart from this aspect, the utilization of these methodologies in the courses to promote greater interaction of the trainees in small work groups tended to potencialize the inter-relation among different disciplinary backgrounds.

The research of Marins et al.[27], which evaluated the findings of a multi-professional graduate program in health based on active methodologies of teaching and learning, also concluded that these methodologies contributed to the exchange of experiences among nurses, doctors, and other professional categories. In the identification of problems and in the formulation of questions, the participants shared knowledge and identified learning needs[20]. This can be potencialized when there is dialogue between distinct perspectives, constructed from different backgrounds.

On the other hand, it can be argued from the aforementioned theoretical framework that the high perceptions before the courses were undertaken could have influenced the high perceptions after the courses. This argument could be defended if it were understood that the high initial perceptions were the expression of a belief of auto-efficacy.

Another argument that can relativize the results, is that "a student that has more expectations in relation to curricular and vocational involvement has their performance augmented"[28]. Thus, broadened for the case of perceptions, the high expectations in relation to the courses influenced the high initial perceptions that, for their part, influenced the high final perceptions, confirming the predictive aspect.

Nonetheless, these arguments can be answered in light of the findings of the present study that took into account the influence of active methodologies of teaching and learning. These methodologies, that begin with the previous knowledge of the participants and stimulate the search for new information, are noted for the development of critical thought of the trainees. In this sense, even though the initial expectations were high, during the courses it was hoped that the participants would manage to think critically about the results achieved, including broadening the very concept of competence, which could reduce the perception of displacement. Thus, the high perception of mastery of abilities in clinical management may express that the participants credited the courses with their shift in mastery. The same logic applies to auto-efficacy. When incentivized to problematize different situations of learning, those trainees who may have believed in their self-efficacy were able to search for new forms of understanding that were not part of their accumulated knowledge in courses or previous experiences, as well as resignify their past experiences.

It is worth noting that, in the perception of the trainees, the lesser mastery of abilities related to the desired competency profile was found in those variables that involved, to some degree, interaction with others, especially concerning the confrontation between different values and perspectives of the subjects involved and their interpretations of a given situation. This finding points to a frontier in the development of competence, regarding the challenge of accessing and exploiting, in the context of work situations, the abilities relative to the affective mastery. From the differences observed in the results according to course, regions, and training, the cultural aspects and repertoires accumulated by the participants in previous experiences may have been limiting factors in the construction of new abilities, especially those that most strongly involved the exchange of ideas and values. For these variables, the need for development of abilities, even making use of active methodologies, may have fallen short of the desired profile.

Finally, in light of the group of variables investigated and results obtained, the increase in the perception of mastery may indicate a positive assessment of the courses. Based on their findings, Gonçalves and Mourão[29] evaluated that the high perception verified after a training process indicated a positive assessment concerning the educational program offered because the program corresponded to the needs of the participants.

Conclusion

In summary, it was possible to assess that the educational initiatives studied, oriented by competence and based in active methodologies of teaching and learning, obtained in their results the increase of their participants' perceptions regarding the mastery of clinical management abilities, confirming the study's hypothesis. This increase was observed in the total score that was shown to be higher at the conclusion of all the courses, as well as in each of the twenty variables that comprise the total score. It is noteworthy that this perception reflects the opinion of the trainees in relation to what they thought they mastered before and after the courses.

In terms of the obtained results, we emphasize that the coherence between the orientation of the various abilities in clinical management and the principles of the constructivist educational approach and active methodologies may have had a favorable influence on the increase of perception of mastery. In this sense, reflection on the work as a trigger of learning and the utilization of previous knowledge in dialogue with scientific evidence are examples of this coherence. Aside from these aspects, the relation between teaching centered on the trainee and their learning needs also presents strong coherence with activities in clinical management when healthcare is oriented by the identification of needs of people and populational groups.

The singularization of the educational process combines with that of healthcare, which intends to promote holistic assistance, as much by the articulation of biological, psychological, and social needs of the people under care, as by the ac-

tions and services offered in a healthcare network. In this context, the reflexive and creative abilities, valorized in active methodologies, are fundamental for the application of clinical guidelines and protocols, in a way that is critical and contextualized to the singularity of the work situations. They are equally fundamental for activity in healthcare networks that prioritize the commitment to use management to get results that add value to peoples' lives and health, guaranteeing and improving the quality of processes and products.

Finally, to investigate aspects that relate to competence involves a complexity relative to the articulation between scientific standards, singularities of work situations, and mobilized values[18]. Considering that this research focused on the perception of the participants regarding the development of abilities related to the desired competence profile, the results add reflexive elements to the challenge of assessing competence. In the first place, by the definition of the activities that might indicate a competent professional practice[26]; and, second, by the need to consider them in the dialogue between scientific standards and the singularity of work situations, as much as in the dimension that involves the values of competent action. Even in a curriculum centered around the articulation of the three dimensions, we still find the need to broaden the educational investment in the development of relational abilities that involve the exchange of ideas and values.

As a limit to the study, we note that these results cannot be extrapolated for the universe of specialization courses oriented by competence and based in active methodologies of teaching and learning, in that the sample was not designed for this purpose.

Collaborations

R Gomes participated in all phases of the research and in the writing of the article. RQ Padilha, VV Lima and CMFP Silva participated in the analysis phase of the research and in the writing of the article.

References

1. Christensen CM, Grossman JH, Hwang J. *Inovação na gestão da saúde: a receita para reduzir custos e aumentar qualidade*. Porto Alegre: Bookman; 2009.

2. Fairfield G, Hunter DJ, Mechanic D, Rosleff F. Managed care: origins, principles, and evolution. *BMJ* 1997; 314(7097):1823-1826.

3. Gomes R, Lima VV, Oliveira JM, Schiesari LMC, Soeiro E, Damázio LF, Petta HL, Oliveira MS, Silva SF, Sampaio SF, Padilha RQ, Machado JLM, Caleman G. A polissemia da governance clínica: uma revisão da literatura. *Cien Saude Colet* 2015; 20(8):2431-2439.

4. Scally G, Donaldson LJ. Clinical governance and the drive for quality improvement in the new NHS in England. *BMJ* 1998; 317(7150):61-65.

5. Mendes EV. *As redes de atenção à saúde. Brasília: Organização Pan-Americana da Saúde*, 2011. [acessado 2015 Jul 7]. Disponível em: http://apsredes.org/site2012/wp-content/uploads/2012/03/Redes-de-Atencao-mendes2.pdf

6. Ceccim RB e Merhy EE. Um agir micropolítico e pedagógico intenso: a humanização entre laços e perspectivas. *Interface (Botucatu)* 2009; 13(Supl. 1):531-542.

7. Cecílio LCO. Autonomia versus controle dos trabalhadores: a gestão do poder no hospital. *Cien Saude Colet* 1999; 4(2):315-329.

8. Campos GWS. *Um método para análise e cogestão de coletivos*. São Paulo: Ed. Hucitec; 2000.

9. Feuerwerker LCM. *Micropolítica e saúde: produção do cuidado, gestão e formação*. Porto Alegre: Rede UNIDA; 2014.

10. Onoko Campos R. O encontro trabalhador-usuário na atenção à saúde: uma contribuição da narrativa psicanalítica ao tema do sujeito na saúde coletiva. *Cien Saude Colet* 2005; 10(3):573-583.

11. Oliveira MS, Padilha RQ, Lima VV, Soeiro E, Oliveira JM, Silva SF. *Gestão da clínica nas regiões de saúde: caderno do curso 2013*. São Paulo: Instituto Sírio-Libanês de Ensino e Pesquisa - Ministério da Saúde; 2013. [acessado 2015 Set 4]. Disponível em: http://ensino.hospitalsiriolibanes.com.br/downloads/AF_Caderno_GCSUS_2013_v2.pdf

12. Padilha RQ, Ramos L, Lima VV, Vecina Neto G, Caleman G, Silva SF. *Gestão da vigilância sanitária: caderno do curso 2013*. São Paulo: Instituto Sírio-Libanês de Ensino e Pesquisa - Ministério da Saúde - Agência Nacional de Vigilância Sanitária; 2013. [acessado 2015 Set 4]. Disponível em: http://ensino.hospitalsiriolibanes.com.br/downloads/AF_Caderno_GVISA_2013_v2.pdf

13. Bruner J. Cultura da Educação. Lisboa: Edições 70; 1996.

14. Gauthier C, Tardiff M. *A pedagogia: teorias e práticas da antiguidade aos nosso dias*. Petrópolis: Vozes; 2010.

15. Perrenoud P. Formar professores em contextos sociais em mudança: prática reflexiva e participação crítica. *Rev. Bras. Educ.* 1999; 12:5-21.

16. Bandura A. A evolução da teoria social cognitiva. In: Bandura A, Azzi RG, Polydoro S, organizadores. *Teoria social cognitiva: conceitos básicos*. Porto Alegre: Artmed; 2008, p. 15-42.

17. Bandura A. Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review* 1977; 84(2):191-215.

18. Schwartz Y. Os ingredientes da competência: Um exercício necessário para uma questão insolúvel. *Educ. Soc.* 1998; 19(65):101-139.

19. Gonczi A, Hager P. The Competency Model. In: Peterson P, Baker E, McGaw B, editors. *International Encyclopedia of Education*. Volume 8. Oxford: Elsevier; 2010. p. 403-410

20. Lima VV, Feuerwerker LCM, Padilha RQ, Gomes R, Hortale VH. Ativadores de processos de mudança: uma proposta orientada à transformação das práticas educacionais e da formação de profissionais de saúde. *Cien Saude Colet* 2015; 20(1):279-288.

21. Maia JAF. Metodologia para avaliação ex ante e expost da relevância social de políticas públicas. *Sitientibus* 2008; 38:35-56. 2008. [acessado 2013 Jul 24]. Disponível em: http://www2.uefs.br/sitientibus/pdf/38/3_metodologia_para_avaliacao_ex_ante_e_ex_post.pdf

22. Gomes R, Souza ER, Minayo MCS, Silva CFR. Organização, processamento, análise e interpretação de dados: o desafio da triangulação. In: Minayo MCS, Assis SG, Souza ER, organizadoras. *Avaliação por triangulação de métodos: abordagem de programas sociais*. Rio de Janeiro: Editora Fiocruz; 2005. p. 185-221.

23. Likert R. A technique for the measurement of attitudes. *Archives of Psychology* 1932; 140:1 55.

24. Triola MF. *Introdução à Estatística*. Rio de Janeiro: LTC Editora; 2005.

25. Evans JR, Mathur A. The value of online surveys. *Internet Research* 2005; 15(2):195 - 219

26. ten Cate O, Billett S. Competency-based medical education: origins, perspectives and potentialities. *Medical Education* 2014; 48(3):325-332.

27. Marin MJS, Gomes R, Marvulo MML, Primo EM, Barbosa PMK, Druzian S. Pós-graduação multiprofissional em saúde: resultados de experiências utilizando metodologias ativas. *Interface (Botucatu)* 2010; 14(33):331-344.

28. Gomes G, Soares AB. Inteligência, habilidades sociais e expectativas acadêmicas no desempenho de estudantes universitário. *Psicologia: Reflexão e Crítica* 2013; 26(4):780-789.

29. Gonçalves A, Mourão L. A expectativa em relação ao treinamento influencia o impacto das ações de capacitação? *RAP — Rio de Janeiro* 2011; 45(2):483-513.