

Beliefs of Healthcare Professionals about Training and Institutional Development Actions

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Abstract: Objective: measure the beliefs of healthcare teams about training and institutional development actions. Methods: A quantitative, descriptive and correlational research was composed among 937 healthcare professionals who work in public and private institutions in all three healthcare levels. A previously validated instrument used in the data collection process was revalidated in this study. Data were hence submitted to descriptive and inferential statistics, and factor analysis. Results: Three factors emerged: Beliefs about the contributions of training programs both to the individual and the organization; Beliefs about the assessment process for training needs; and Beliefs about training results and processes. The study revealed that professionals showed strong favorable beliefs about the training system. Beliefs are increasingly stronger as the complexity level of the healthcare practice increases. The variables care level, function, time past graduation and work time, work shift, participation in training programs, and length of training time in the past 12 months showed significant differences regarding the beliefs of the professionals about training processes in at least one of the factors. Conclusions: Comprehension of the beliefs of healthcare professionals enables not only the implementation of managerial actions directed to the maintenance of favorable beliefs, but the change of unfavorable ones.

Keywords: Interdisciplinary Health Team; Inservice Training; Education.

INTRODUCTION:

Faith and belief are related to the will of truth, in that way, the believer believes have found it, and somehow enslaves himself to that image or ideal. But the individual who has faith seeks truth and meaning, however, without the certainty of having found them. The meaning is in the search itself⁽¹⁾.

The influence of beliefs in the teaching-learning processes has been the focus of research, such as the study that investigated the beliefs of college degree students about the nature of knowledge or epistemological beliefs and the relationship of these beliefs with learning approach⁽²⁾.

Entering these observations in training processes and taking into account that previous experience help in the formation of beliefs, it is important to identify which experiences generate favorable beliefs about the training system, development and education (TD & E) that will lead to a greater impact the-job training⁽³⁾.

Moreover, the professionals perceptions related to support, cause a direct influence in the impact of training in the workplace⁽⁴⁾.

After the identification of beliefs about the contributions of formal actions on the training for job performance, there is the possibility of making decisions management over the qualifications of instructional systems, including the procedures, processes and dissemination review, looking forward to modify unfavorable beliefs about the training effectiveness⁽⁵⁾.

The understanding of the human being, under a complex perspective, reinforces the statement that personal beliefs, as part of the individuality, influence the mental functioning thought organization and thus acts along with the cognitive processes⁽⁶⁾.

As a social phenomenon, education is articulated with the political, economic, cultural, and scientific development. The ways to understand and operationalize education are determined by the perspective of social groups living in a specific time and space⁽⁷⁾.

The acknowledgement of the learner and his/her social context is a crucial step toward transforming education into an emancipation tool. For this purpose, the beliefs of healthcare professionals about the educational actions in the labor environment should be taken into account.

Hence, the aim of this study was to assess the beliefs of the

healthcare team about the training and institutional development system, as well as to verify the existence of correlations between beliefs and socio demographic variables.

METHODOLOGY:

This quantitative study may be characterized as an empirical research, as it produced results that may subsidize theoretical concepts toward the creation of educational policies in organizations.

The study was carried out in 14 public and private healthcare institutions in the cities of São Paulo and Sorocaba, São Paulo State, Brazil. The practical educational content of the selected institutions was connected with the Nursing School of the University of São Paulo, represented by members of the research group called "Study and research center on the psychosocial aspects of education and nursing/health management". The group is registered in the Brazilian National Council for Scientific and Technological Development, responsible for this study.

The assessed sample corresponded to the total amount of healthcare professionals participating in educational programs in those institutions. In order to calculate the size of the sample and to guarantee the proportionality of the work and function units, a proportional stratified sampling process⁽⁸⁾ was carried out, totaling 937 professionals.

A validated⁽⁹⁾ and revalidated⁽³⁾ psychometric scale was created and submitted to a new verification procedure for semantic and content validity. The jury was composed by the members of the research group that carried out this study, so that the language and technical terms could be adapted to the population. After such process, the final scale was comprised of 34 items, with response intervals from 1 (do not believe) to 10 (fully believe). The closer to 10 the response was, the stronger the belief.

The responses to the instrument items were subjected to analysis Exploratory Structural Equation Modeling⁽¹⁰⁾ from the soft Mplus 7. This analysis has the advantage of accommodating more adequately factor structures with complex cross items or loads, providing indicators to the statistical significance level of $p < 0.05$. Furthermore, by means of algorithms Mplus 7 software, it is possible that the exploratory factor solutions are evaluated in terms of the degree of adjustment to the empirical from a structural model data.

In order to achieve the number of factors in the scale, parallel analyses⁽¹¹⁾ were carried out by means of the R software⁽¹²⁾. Factor analyses took into account Pearson's correlation coefficient as a source of information, the maximum likelihood estimation method, and the GEOMIN-rotated solution^(10,13,14). After testing three factor solutions,

the three-factor solution was chosen as it was more compliant with theoretical and psychometric adjustment criteria.

The model's general adequacy indexes were CFI = 0.91; RMSEA = 0.064 [IC90%: 0.062 – 0.067]; and SRMR = 0.034. A rigorous criterion was adopted toward maintaining the items in their factors (saturation ≥ 0.40). Such decision resulted in the exclusion of two items from the instrument. All factor loads were significant at $p < 0.005$.

In order to represent mean scores in each factor, a score scale was created by taking the total sample into account (N=937). The factor scores identified extreme univariate cases (n=13) - criterion: score $z \geq \pm 3.29$ ⁽¹³⁻¹⁴⁾. As these scores represented 1.39% of the total sample, they were excluded from subsequent analyses.

Variance analyses (student t-tests and Anova) were carried out in order to verify the existence of significant differences in the means of each factor as a result of the characteristics of the sample. In cases where the variance of Levene homogeneity test was not significant compared between the variables, we used the test of multiple comparisons of Tukey's HSD. In cases where the variance among groups was not homogeneous, Dunnett's T3 multiple comparison test⁽¹⁵⁻¹⁶⁾ was applied.

The study was approved by the Research Ethics Committee the Nursing School of the University of São Paulo, the applicant institution, under protocol 1043/2011, and by the Research Ethics Committee existing in partnering institutions.

RESULTS:

All 937 participants were predominantly women (79.4%) with a mean age of 37.18 ± 9.6 years. As for their professional activity, 47.8% of them worked in the tertiary healthcare sector; 25.9% in the secondary healthcare sector; and 26.3% in primary healthcare (PHC). The majority of professionals (78.5%) worked in the nursing area and had completed high school (48.1%). The time past graduation showed a mean of 9.37 ± 7.36 years and the mean time of work at the institution reached a mean of 6.99 ± 6.93 years; 56.1% of the participants had been in their departments for five years. The work shifts were homogeneously divided: 29.7% worked in the night shift; 23.2% full-time; 23.9% in the morning shift; and 16.9% in the afternoon shift.

As for the participation in training processes, the mean reached 6.3 ± 7.1 of professionals who had attended training programs in the previous 12 months, with a median of 12 hours per program in the same period. It should be highlighted that 8.4% of professionals did not attend training programs in the last 12 months, and 68.2% of respondents were not engaged in educational activities at the moment the research was being carried out.

Table 1. Factor matrix of the belief scale of healthcare professionals about the training system. São Paulo, SP, Brazil, 2013

Items	Factors			rit
	F1	F2	F3	
The participation in training programs promotes the improvement of people.	0.86	-0.02	-0.07	0.70
Training programs may improve work processes in the institution.	0.75	0.00	0.10	0.78
The participation in training programs generates more advantages than disadvantages to participants.	0.72	0.00	0.05	0.69
The quality of the work is improved when the contents learned in training programs are practically applied.	0.69	0.03	0.00	0.65
The participation in training programs is fundamental toward the professional's career growth.	0.63	0.01	0.06	0.63
The more diversified the training programs (distance education, classroom education, workplace education), the better.	0.59	-0.02	0.01	0.56
Training programs contribute to a more effective operation of work teams.	0.55	0.10	0.18	0.71
The work of professionals is facilitated after their participation in training programs.	0.46	0.11	0.24	0.65
Training programs contribute to consolidate the institution's objectives.	0.43	0.11	0.30	0.68
Training programs contribute to the professionals' self-realization.	0.40	-0.06	0.34	0.59
People in my work place are informed on the institution's training programs.	0.02	0.74	0.00	0.65
The institution is capable of identifying the real training needs of professionals.	0.08	0.73	-0.03	0.72
The institution provides conditions to the application of contents learned in training programs.	0.08	0.71	0.09	0.72
The institution has been increasingly applying training programs into the realities of its professionals.	0.09	0.69	0.02	0.73
Managers/leaders are capable of adequately identifying the training needs of their professionals.	-0.02	0.57	0.15	0.64
Training programs are aligned with the institution's organizational strategy.	0.29	0.55	0.01	0.68
The professional's initiative toward participating in training programs in this institution is quite rewarded.	0.24	0.53	-0.08	0.57
The criterion to distribute training opportunities is solely based on the learning needs of professionals.	-0.11	0.46	0.13	0.41
Training programs aid in the creation of a more favorable organizational environment.	0.18	-0.10	0.77	0.76
Training programs alter the way people carry out their activities.	0.18	-0.06	0.71	0.74
Training programs contribute to the creation of new organizational values.	0.26	0.01	0.63	0.76
People take part in training programs exclusively for the need of developing new knowledge.	-0.03	0.05	0.59	0.61
The dissemination of training programs facilitates the choice of the institution for more adequate professionals to their needs.	0.08	0.01	0.58	0.59
Training programs provide people with realities they experience in their work environment.	0.09	0.19	0.53	0.69
Learners take proposed training programs very seriously.	-0.02	0.28	0.53	0.69
People learn the contents addressed in training programs.	-0.04	0.31	0.51	0.67
People apply what they learn in training programs in their daily work.	-0.01	0.27	0.49	0.66
It is easy for people to choose the training programs that are more appropriate to their needs.	-0.02	0.25	0.48	0.65
Experience exchange processes in training programs facilitate learning processes.	0.28	0.08	0.47	0.69
People are at ease when they are taking part in training programs.	0.05	0.28	0.44	0.65
The essential values of the institution are strengthened by training programs.	0.14	0.33	0.43	0.74
The contents addressed in training programs may be applied in the daily work.	0.23	0.25	0.41	0.73
Adequacy index: CFI = 0,91; RMSEA = 0,064 IC: [0,062 – 0,067]; SRMR = 0,034				
Eigenvalues	15,54	2,09	1,33	
Cronbach's Alpha	0,90	0,88	0,93	
Items	10	08	14	

The factor analysis determined three factors: Factor 1, "Beliefs about the contributions of training programs both to the individual and the organization"; Factor 2, "Beliefs about the assessment process for training needs; and Factor 3, "Beliefs about training results and processes" (Table 1).

It is important to highlight that the lowest load reached 0.40 and the highest load reached 0.86. Two items with factor load lower than 0.40 were excluded. Cronbach's Alpha scores were 0.90, 0.88 and 0.93 for Factors 1, 2 and 3, respectively (Table 1).

Table 2. Beliefs of healthcare professionals about the training system, per factor. São Paulo , SP, Brazil, 2013

Factors	N	M	SD	Confidence Interval 95%			Amplitude	
				Standard Error	Lowest limit	Highest limit	Min.	Max.
Factor 1	924	8.52	1.15	0.04	8.44	8.59	4.60	10.00
Factor 2	924	7.78	1.50	0.05	7.68	7.88	2.75	10.00
Factor 3	908	7.67	1.34	0.04	7.58	7.76	3.36	10.00

As demonstrated, the beliefs of the professionals were very strong, as the mean scores of each factor were higher than 7.67. Additionally, low scores and variations were observed for both the standard deviation and the confidence interval, thus indicating homogeneity of beliefs (Table 2).

As for the existence of an association among socio demographic variables and beliefs, sex and age range did not show any association with the beliefs in the training system in any of the factors.

The analysis of the variable “institution” showed significant differences in all three factors Factor 1 [$F(2,921)=4,569$, $p \leq 0,011$]; Factor 2 [$F(2,921)=77,378$, $p \leq 0,001$]; Factor 3

[$F(2,923)=14,362$, $p \leq 0,001$]. Regarding Factor 1, PHC professionals showed a significantly lower mean when compared with secondary and tertiary healthcare professionals. Factor 2 showed that the higher the healthcare level, the stronger the referred belief: PHC ($M=6.86$); secondary healthcare ($M=7.84$); tertiary healthcare ($M=8.24$). In Factor 3, PHC professionals showed significantly lower means when compared with the other groups.

Comparing the group of nursing professionals with the groups related to other functions, it is observed that Factor 1 showed no significant difference among the groups. In Factor 2, the nursing group ($M=8.56$) presented a significantly higher score ($p \leq 0.001$) in comparison with the groups related to the other functions ($M=8.36$). In Factor 3, the nursing group ($M=7.94$) showed a significantly higher score ($p \leq 0.001$) in comparison with all others ($M=7.01$).

Graduated professionals showed a lower mean score (7.42) when compared with the scores obtained by the professionals with a high school degree (8.09) in Factor 2 [$F(2,873)=23,037$, $p \leq 0,001$]. Such difference was statistically significant. The same pattern was observed in Factor 3 [$F(2,873)=13,422$, $p \leq 0,001$], whose mean scores reached 7.42 for the highest level and 7.89 for the mean level. Factor 1 did not show any significant difference among the groups.

In Factors 1 and 3, the “Time past graduation” variable showed no differences among the beliefs of professionals. In Factor 2 [$F(3,794)=11,228$, $p \leq 0,001$], professionals graduated for at least five years ($M=7.34$) displayed significantly lower scores when compared with the other groups (groups: 6 to 10 years – $M=7.93$; 11 to 20 years –

$M=7.99$; 21 years or over – $M=7.99$).

Significant differences were observed only in Factor 2 ($p \leq 0.008$), where beliefs are correlated with the length of time working in the institution.

The analysis of the “Work shift” variable showed significant differences in the scores of Factor 2 [$F(3,860)=18,546$, $p \leq 0,001$] and 3 [$F(3,856)=6,252$, $p \leq 0,001$]. Full-time workers ($M=7.22$) showed a significantly lower mean in comparison with the groups that worked in the morning ($M=7.68$), night ($M=7.99$) and afternoon ($M=7.99$) shifts. On its turn, the group that worked in the afternoon shift showed a significantly higher mean in comparison with the other groups. There was no significant difference among the groups that worked in the morning and night shift. In Factor 3, the morning and the full-time group presented significantly lower means in comparison with the afternoon shift.

As for the amount of training programs the professionals attended in the previous 12 months, no significant differences were found in Factor 1. Factors 2 [$F(4,701)=22,573$; $p \leq 0,001$] and 3 [$F(4,669)=4,846$; $p \leq 0,001$] showed significant differences in all four subgroups: no training, from one to two, from three to four, from five to 10, and 11 or over.

The “Amount of training hours in the previous 12 months” variable showed significant differences in all three factors ($p \leq 0.001$, in all factors). For Factor 1, the group composed of professionals with “Not even one hour of attendance” ($M=8.19$) achieved a lower mean in comparison with the group that attended 30 training hours ($M=8.74$) ($p \leq 0.012$). No difference was observed for the other groups. In Factor 2, the group composed of “Not even one hour of attendance” ($M=6.50$) reached a lower mean in comparison with the other groups: up to six hours ($M = 7.41$); from seven to 16 hours ($M = 7.87$); 30 hours or over ($M = 8.05$); and from 17 to 29 hours ($M = 8.19$). The “From seven to 16 hours” group ($M = 7.87$) scored higher in this factor in comparison with the “Not even one hour of attendance”

($M=6.50$) and “Up to six hours” ($M = 7.41$) groups. No significant difference was observed among the groups. In Factor 3, only the “Not even one hour of attendance” group differed from the others.

The beliefs of professionals participating in training

programs at the moment the research was carried out showed significant differences ($p \leq 0.001$) in all three factors in comparison with those who were not engaged in training programs.

DISCUSSION:

Although the saturation mode of Factors 1 and 3 in this study was different from the one demonstrated in the original study⁽³⁾, the distribution of items in the three-factor scale reproduced the factor structure of studies developed with employees of financial institutions and electric energy companies to which the same scale was applied^(3,9).

Such elements demonstrate consistence in the tested model and reveal a set of evidences regarding the internal validity of the scale, as the participants, the structures of the training area and the modalities of educational actions in these referred studies showed distinct characteristics. Additionally, the employed assessment methodology differed from the one adopted in the previous studies.

The professionals showed strong and homogeneous beliefs. The beliefs in the contribution of training programs to the individual and the organization displayed the highest score. The beliefs in the process and results of training programs presented the lowest scores, thus diverging from those previously found^(3,17), in which the lowest score was observed in the assessment process for training needs.

Educational actions are capable of producing individual benefits, a largely disseminated and consolidated aspect clearly reflected by the positive and uniform belief about the contributions of training programs.

Even so, there are scarce studies on the assessment of training programs, generating limited progress in the area and showing that this issue has not yet been consolidated as a research object⁽¹⁸⁻¹⁹⁾. The methodological approaches of the current studies on the assessment of results are poor and have produced restricted evidence regarding the evaluation of skills, attitudes and impacts⁽²⁰⁾. The absence of an assessment practice may delay decision-making processes that could create an environment in which the competences acquired in training programs could be transferred to the daily work of the professionals.

No association between sex/age range and training beliefs was observed, which agrees with other results⁽²¹⁾, pointing out that sex is not a significant indicator of the participation of professionals in educational actions in the work environment. It is worth highlighting, however, that the female sex is predominant in the healthcare field, especially in the nursing area.

As for the age issue, the results found were different from those achieved by one study⁽²²⁾, but similar to others⁽²³⁻²⁴⁾ in which age was not related to belief in the training system.

Regarding the healthcare level, the characteristics of the labor processes differ in complexity, as well as in technological and instrumental demands, and consequently concerning the type of training need and its repercussions in the daily work.

The lowest scores found in the assessment process for training needs of the PHC are directly proportional: the higher the complexity level, the stronger the belief of the health team in training programs.

Training processes stand out as an opportunity professionals have to resignify, embrace, reflect and act favorably toward the well-being of populations⁽²⁵⁾; for this reason, the healthcare level may influence the beliefs of the professionals.

The association between the symbolic dimension of human development and sociocultural practices demonstrates that the constructions pertaining to the dimension of signification processes are constituted of and inserted into contexts of concrete interactions among individuals⁽²⁶⁾. In this sense, the concrete work environment impacts and is impacted by beliefs and values composing the motivational dimension. Bearing this in mind, it is crucial that the healthcare environment, comprised of structural and human dimensions, be prepared to deal with the effectiveness of planned educational actions.

The PHC sector, where work objects are broader and less objective, displayed the lowest scores, perhaps as a result of the reduced offer of training programs provided within the care context, taking into account that the sources for information update are bound to the disclosure of institutional information and the acknowledgement of manuals and bulletins, being the participation in formal educational action a secondary feature⁽²⁷⁻²⁸⁾.

A study⁽²⁵⁾ revealed that 58.1% of the educational activities stemmed from demands originated outside the healthcare service, pointing out the lack of participation of professionals in the assessment of training needs. The opinion of the professionals in the planning process of educational activities, however, should be based on the reflection of daily work processes, thus enabling changes in healthcare practices^(25,29).

Opposed to this aspect, other studies showed that the assessment processes for training needs carried out in hospital services were directed to the service context, based on direct needs pointed out by nursing professionals or supervisors. A large portion of such demand is uniquely related to the difficulties professionals present regarding the execution of procedures⁽³⁰⁻³¹⁾.

Historically, this professional category shows a predominance of physicians and nurses in healthcare teams; hence, it is expected that these professionals be more connected with the training system, thus favoring the creation of beliefs about it.

According to the Brazilian Institute of Geography and Statistics, however, there was a remarkable increase in the insertion of new professional categories into permanent healthcare teams, generating a new work logic that demands a period of adaptation to the new reality⁽³²⁾. Such trend may justify the low scores observed among these new professionals.

The demonstration of stronger beliefs in the contribution, process and results of training programs among mid-level professionals may be a result of heavier educational investments made available to these professionals, taking into account the broader access less qualified professionals have to educational actions⁽³³⁾. Another fact is the strong investment of the National Policy of Permanent Healthcare Education (PNEPS, as per its acronym in Portuguese) in the qualification of mid-level professionals⁽³⁴⁾. These aspects allow us to comprehend the stressed emphasis these professionals give to their beliefs, as they are more focused on the relevance of their investments in educational actions.

The lowest scores of beliefs in the assessment of training needs concerning the time past graduation and length of time in the function should be related to the admission training process made available to new workers in the health institution. The process aims to prepare professionals to render a care practice based on institutional guidelines⁽³⁵⁾.

As for the work shift, a study⁽³⁶⁾ showed that in eight out of 10 assessed countries, professionals who work full-time had more limited opportunity to participate in training programs when compared with part-time workers. Exceptions were observed in the United Kingdom and Finland.

In order to explain the strong beliefs professionals working in the afternoon shift had in the assessment of training needs, as well as the strong beliefs professionals working in the morning shift had in the training process and results, it is assumed that the larger number of tertiary-based employees working during the day would make it difficult for the healthcare institution to create alternate work days among them, as well as the collaboration with the professionals working in the night shift, or even the usual increased availability educators have to carry out training programs in the day shifts.

Although there is a lack of elements to establish a causal link, the lowest scores observed in the beliefs of the professionals who had not participated in any training program in the previous 12 months are assigned to the assumption that beliefs are originated in the professionals' daily experiences in the training programs proposed by the institution, although some beliefs are also influenced by the observation of colleagues who have already taken part in educational actions⁽³⁾. Such lack of experience may explain the weakest beliefs.

Additionally, repeated or multiple training contents produce more consolidated learning processes, as well as important changes in attitude⁽²⁰⁾.

Professionals showing inadequate experiences in the assessment of training needs, planning and execution of training programs, or who missed opportunities to transfer knowledge, develop negative beliefs and generate organizational cynicism⁽³⁷⁻³⁸⁾, resulting in a generalized disbelief in the possibility of changes in work processes⁽³⁹⁾. The absence of feedback finally causes professionals not to realize the effectiveness of the educational programs⁽²⁰⁾.

The group that had not participated in any training program in the previous 12 months displayed a critical difference in the training contribution issue in comparison with the group that had participated in more than 30 hours, thus corroborating studies carried out in several areas⁽³⁹⁻⁴⁰⁾, which show that the steady participation of professionals in more lengthy training programs draw the attention of the subjects more efficiently and cause them to acquire more knowledge.

Stronger beliefs in the training system among participants in a close period to data collection were also pointed out by another research⁽³⁾. In such study, recent participants showed stronger beliefs than those who had not participated in training programs for over 60 days.

CONCLUSIONS AND LIMITATIONS:

In a general perspective, the beliefs of professionals in educational actions are favorable concerning the dimensions of the assessed beliefs: Contributions of the training program both to the individual and the organization; Assessment process for training needs; and Training process and results.

The comprehension of beliefs and the influence of their variables enable the implementation of managerial actions directed to the maintenance of favorable beliefs and change of unfavorable ones. The results that will return to the healthcare institution and its professionals will consequently benefit healthcare patients.

The strength of emerging association and the impact of their effects are very low, which lead to an insufficient explanatory power these variables have to elucidate beliefs. New studies, however, should further analyze these results in order to verify the influence of social desirability on them.

The employed instrument showed several validity evidences highlighting the internal structure of the scale, given the results of the factor analysis and Cronbach's alpha; since the results of the ANOVA showed evidence related to relevant external variables as criteria groups. Despite being an exploratory study in the healthcare area, the number of items per factor should be reviewed; complex and excluded items concerning the latent feature should be theoretically assessed; and association variables should be reexamined. These aspects may be understood as limitations of this study.

Taking into account the analysis potential of the obtained data, this research will be broadened. The authors will proceed to an individual analysis of each institution, aiming at verifying results and assessing other correlations, with the intention to reproduce this research methodology in other regions of Brazil, in order to verify distinct local and regional needs.

Such action will certainly allow for the establishment of predictors of beliefs healthcare professionals have, as well as the formulation of managerial proposals and measures.

The study builds up a specific knowledge on the "belief-

based education” issue, not fully explored in training and development processes in the healthcare area.

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