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EVALUATIONS OF SATISFACTION, LEARNING AND IMPACT ON A HEALTH CARE TRAINING PROGRAM*

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ABSTRACT

This study analyzed "Training in Introduction to the Family Health Strategy," through evaluations of participant satisfaction, learning, impact and verification of the existence of relationships between the variables of the evaluations. Correlational, quantitative study which analyzed 291 trainee evaluations of the training. Instructors and trainees divided into groups A and B responded to the evaluations. The participants presented good satisfaction scores. There were differences in learning between pre- and post-training ($p = 0.29$), although the mean scores were low for both. There was no difference in impact between groups A and B ($p = 0.52$). Association was found between satisfaction and impact ($p = 0.023$). The instruments for evaluation of satisfaction and impact are reliable. The participants were satisfied with the training, which increased their knowledge for use in professional practice.

Keywords: *Personnel training. Continuing education. Learning evaluation. Education - health care management.*

1. INTRODUCTION

In the corporate world, where there is a frequent search for quality and productivity, training is an operational strategy to align the profile of workers so that they become multivalent and are prepared to assume responsibilities (Mourão, Borges-Andrade, 2005). Given the investments being made in training, it is important to verify their results and impacts.

The most commonly used are reaction or satisfaction, learning and impact evaluations. Satisfaction evaluation surveys allow to raise concerning regarding support factors of training, such as facilities, event coordination, equipment and materials (Vargas, Abbad 2006). Learning evaluation enables comparison between the knowledge and skills that an individual had before and after training (Borges-Andrade, 2002). Finally, impact evaluation assesses the long-term effect on participants' professional performance, motivation and attitudes. In international studies, impact is defined as the degree of content learned transfer in training to daily work (Abbad, Pilati, Pantoja, 2003).

In the field of health care in Brazil and internationally, there are few publications about studies on evaluation of education activities (Mira et al., 2011), and there has been little progress in evaluating the impacts of education activities, or establishing relationships between levels of evaluation (Otrenti et al., 2013).

An integrative review by Bluestone et al. (2013) pointed out that a significant number of studies on results evaluations adopted weak methodological approaches, and little information was found in studies aimed at assessing skills, attitudes and impacts.

It is worth noting that evaluation of training is part of training systems, and is composed of two integrated subsystems: needs evaluation, planning and implementation to develop knowledge, skills and attitudes that enable employees to improve job performance (Abbad Borges-Andrade, 2004). Therefore, evaluations should permeate the entire process of planning for training.

Given the above, this study aimed to evaluate the Training in "Introduction to the Family Health Strategy, in terms of participant and instructor satisfaction, learning and impact.

2. METHOD

This was an empirical study with a correlational design conducted from September to November 2011 at a philanthropic institution that has been offering primary health care services for more than 19 years in the municipality of São Paulo, in the southeastern Brazilian state of São Paulo.

Data was collected through evaluations by training participants, who were divided into groups A and B, according to the distribution shown in Table 1, in which N1 = estimated number of evaluations, and N2 = number of evaluations received (100%).

The study included evaluations by 56 participants who completed the training in September and October 2011 (Group A), 52 participants from 2005 to the first half of 2011 (Group B), and six instructors. Division into two groups was done in order to compare the impact of training after amendment of instructional objectives and teaching strategies, which occurred in the second trimester of 2011. It should be noted that the training content was not changed, thereby enabling application of the same evaluation tools.

Thus, Group A has participated in the satisfaction, learning and impact evaluations; Group B has participated only in the impact evaluation, which enabled comparison of data between the two groups.

For satisfaction evaluation, two psychometric scales with five responses ranging from "strongly disagree" to "strongly agree" were used. The scale for instructors had 17 items and two open questions, and the scale for participants had 25 items. Both scales were adapted from Mira (2010). In order to analyze the overall satisfaction of the participants, the satisfaction score was calculated with a total score of 100 points. To compare the satisfaction of trainees and instructors, the score was calculated only with the 17 items common to both groups, which referred to the training schedule, support for training development, training applicability in practice, and expected results of the training. Application of the instrument occurred immediately after the training.

The instrument for participant satisfaction evaluation sought to advance beyond the reaction assessments traditionally used in health care, in which respondents use highly subjective concepts to evaluate training. Mira (2010) included aspects of possible results from training, and replaced the concepts with a Likert scale. Care was taken to draft some statements in the participant evaluations that explored negative aspects of the training, in order

to ascertain whether the respondents paid attention when filling it out. The instrument was subjected to internal consistency analysis by means of Cronbach's alpha, resulting in 0.901, proving its reliability.

For learning evaluation, the training instructors developed an instrument with ten multiple choice questions based on the training content, which was applied at the beginning and end of the training by the researcher to participants in Group A. The questions were validated by a panel of experts, and on the themes of the questions, and on education, and most of the questions were considered easy. Based on statistical analysis, they showed no power of discrimination between pre- and post- training. It is worth mentioning that the instructors did not routinely perform learning evaluations in the training they administered.

To measure the impact in breadth and depth, was used a self-assessment tool that consisted of sociodemographic data, along with 13 items relating to impact in breadth and five to impact in depth, based on the training content. This instrument was also submitted to Cronbach's alpha test, the result of which was 0.78, indicating its reliability. The last two questions regarding frequency of application of what was learned in the training entailed a Likert scale with five possible responses ranging from "never" to "always." Data collection during this phase occurred one month after completion of the training by Group A in the participants' work units. As regards Group B, data collection was carried out simultaneously with that of Group A, with participants being invited to participate in the study in their work units.

The data were submitted to descriptive and inferential statistical analysis in order to identify relationships between variables, considering a significance level of 5%. For comparison of means between the two groups, a Student's t-test was used; if the normality assumption was rejected, the non-parametric Mann-Whitney test was used. The homogeneity of proportions was tested using a chi-square test; when frequencies were lower than 5, Fisher's exact test was used (Rosner, 1986).

To ascertain the difference between the pre- and post-training scores for the evaluation of learning, the two times were compared by applying the paired t-test. To study correlations between variables, Pearson's correlation coefficient and a linear regression model were used (Rosner, 1986).

In order to compare the mean scores of the pre- and post-training learning evaluations, 55 participants who performed both evaluations were considered.

3. ETHICAL CONSIDERATIONS

This study was approved by the Research Ethics Committee of the School of Nursing at the University of São Paulo, the proposing unit, and the Research Ethics Committee of the City of São Paulo.

4. RESULTS

Most of the instructors were female (66.7%) with a mean age of 37.6 years (SD±11.5), who had nursing degrees (66.7%), and had been training instructors for less than two years (66.7%). Participants' minimum training was six years and maximum was 31 years.

There was a predominance of females in both groups, with a mean age of 30.2 years in Group A and 31.2 in Group B. As regards level of education, 28.1% of the participants in Group A had a higher education, while in Group B this figure was 46.1%.

The mean score for satisfaction was 74.4, ranging from 57 to 91. It was observed that instructors and training participants were satisfied with the training's contribution to professional growth, acquisition of new knowledge, consonance between content and objectives, teaching strategies, and instructors' knowledge of the content and infrastructure, with percentages of "agree" and "totally agree" above 70%. The exceptions were related to items such as training location, audiovisual resources and hourly load, which ranged from 50% to 70%. There was no statistically significant difference ($p = 0.48$) in the satisfaction of instructors and participants.

As regards the open questions, the instructors considered it essential that participatory methodologies be used and that some of the lectures and videos be reformulated. They pointed to participants' interest in the training, their critical capacity and willingness to relate, share knowledge and work as a team. Hindrances mentioned included the inadequacy of the physical space, participants' delays, inappropriate profiles of recently hired workers for the activities, and the difficulty of integrating medical professionals. Previous experience in primary health care (PHC) was highlighted by some instructors as both a facilitating factor and problem. Some believed that daily work experiences enrich discussions, encouraging the exchange of experiences; however, this experience can bring up problems in work processes, and cause resistance to change.

As regards learning evaluation, the training participants had mean scores of 4.98 (SD = 1.9) in the pre-test, and 5.58 (SD = 2) in the post-test (p = 0.29). There was no difference in the standard deviation between the two times.

As regards the final scores on the pre- and post-training learning evaluations, a higher concentration of scores between 3 and 6 was verified for both evaluation times. There was a decrease in the percentage of scores equal to or less than 2, and an increase in post-training scores. There was no zero score for any of the times.

By comparing the final scores on different education levels, it was observed that professionals with higher education performed better than those with primary and secondary level of education (p = 0.02). There were no statistically significant differences between participants with vocational and secondary education.

Fifty-six training participants from Group A and 52 from Group B responded to the impact evaluation, the results of which are shown in Table 2, according to topics covered in the training.

Based on this table, most of the participants used the knowledge they acquired in the introductory training "often" or "always."

Participants in Group A had higher percentages of "often" and "sometimes" when compared to Group B, which had higher percentages of "often" and "always." The statistical analysis showed that the answers did not differ significantly, with the exception of assertive 11 (p = 0.035).

Regarding the overall impact score, participants of Group A had a mean score of 38.1, with a minimum score of 14 and maximum of 47, from a total of 52 points. Group B participants had a mean score of 39 points, with a minimum score of 20 and maximum of 52. There was no significant difference between the means of the groups (p = 0.52).

When considering the impact evaluation, the statement referring to public policy had the lowest percentage of frequency, being 37.4% and 55.7% for groups A and B, respectively, when aggregating the percentages of "always" and "often."

In the relationship between evaluations by means of linear regression, there was an association between satisfaction and impact (p = 0.023), so the greater the satisfaction, the greater the impact. There was no relationship between satisfaction and learning (p = 0.77).

5. DISCUSSION

The instrument showed a good reliability index, and its use in this study is part of a validation process that will undergo other methodological evaluation procedures.

Good rates of satisfaction in this study corroborate other studies that evaluated participant satisfaction with health care training (Otrenti et al., 2013).

The learning evaluation instrument tool showed no power of discrimination pre- or post-training, which can be explained by the fact that the instructors consider evaluation of learning difficult to implement, and it is often done in a bureaucratic manner merely as a means of logging data (Castro, Takahashi, 2008).

Although the learning evaluation tool showed little power of discrimination, some if its results should be discussed.

The participants showed heterogeneity of knowledge. It was expected that there would be a reduction of the standard deviation post-training, indicating the capacity of the training to narrow the knowledge gap between participants (Abbad, 1999). Yet in this study, the post-training standard deviation was slightly higher than the pre-training, indicating that the pre-training heterogeneity of knowledge was maintained post-training. This result differs from that found by Mira (2010), in which participants with mid-level and vocational training increased the final post-training evaluation scores, reducing the standard deviation.

This heterogeneity was also expressed in the significant difference in post-training evaluation scores, with professionals with higher education performing better than those without. This performance was expected, keeping in mind that different learning evaluation content is an element of higher education training programs in health care. According to Abbad (1999), participants who are more familiar with the content have better performance than those who are exposed to it for the first time. In addition, the education activities offered by the

institutions focus on upper-level professionals to the detriment of others (Tronchin et al., 2009). This result corroborates other learning evaluations for training for health care professionals (Lima et al., 2009).

It is also important to include professionals with technical and secondary-level education in training. Countries like Brazil and England have public health policy proposals to increase access to education activities for professionals with lower qualifications (Thomas, Tian, 2012; Brazil, 2009). Health care institutions need to reevaluate their training programs. Including professionals with different qualification levels in multidisciplinary education activities doesn't reinforce knowledge gaps, and dialogue is enabled between the various actors with different education levels. Another aspect to consider is that, according to Gonçalves and Mourão (2011), professionals with lower education levels see training as an opportunity for intellectual growth, and perceive greater impact of training at work. These authors point out that this is a reality in Brazil, where there is less access to higher education than in more developed countries.

According to Meneses, Zerbini and Abbad (2010), low performance in learning evaluations may be related to inadequate definition of instructional objectives, inadequate definition of knowledge, skills and attitudes (KSAs), inattention to client profiles and improper use of teaching strategies. As regards the definition of KSAs, in this study, the instructors pointed to the inadequacy of skills profiles as a problem in the teaching-learning processes, which suggests that there may be problems in the definition or understanding of KSAs.

Although the results for the learning evaluation were below what was expected, such evaluation is important and can contribute to the training system, and pre-training evaluations could be used as a tool for needs diagnosis, keeping in mind that the questions with greater error rates could be treated with more detail during training (Otrenti et al., 2013). In other words, errors show deficits, while successes indicate prior knowledge that should be expanded to assist instructors in adapting strategies and content.

As regards the relationship between trainees' levels of satisfaction and learning, one study of private companies in Rio de Janeiro pointed out that reactions to the training, prior experience with training, type of training and type of instructor were predictors that can individually contribute to explain learning (Mourão, Marins, 2009), in contrast to the results of this study, which found no relationship between satisfaction and learning. However, Mourão & Marins noted that this finding does not corroborate other studies in the field, which affirm that there is no empirical evidence to support the existence of a relationship between satisfaction and learning.

National and international literature recommend that in addition to satisfaction and learning evaluations, more comprehensive assessments be performed to explore other variables to measure the effectiveness of training (Meneses, Abbad, 2003).

In this study, the impact assessment was restricted to checking the frequency of use of knowledge gained in the daily work of the teams, which is only one aspect of evaluation, which also includes improving the quality of the subsequent work performance of training participants (Gonçalves, Mourão, 2011).

In analyzing the impact evaluation results, it was considered that in different proportions, older and recent participants learned concepts and skills in opportunities other than the introductory training.

The results as regards impact refuted the hypothesis that there were significant differences between the studied groups. This was expected, given that working time should provide more opportunities for learning and application of knowledge.

It was observed in the results that the frequency of use of the knowledge acquired in the training was high, and the mean obtained in the post-training learning evaluation was low.

Although the acquisition of knowledge has not been shown to be a determinant in the application of knowledge and skills learned in daily work (Pantoja, Lima, Borges-Andrade, 2001), learning is a necessary condition for successful application of skills acquired in training. In this study, the low acquisition of knowledge and high frequency of application of content learned led to questioning the quality of performance of participants in relation to the content covered in the training showing the need to strengthen the impact evaluation to address this aspect.

This study found an association between the results of the satisfaction and impact evaluations, a result that corroborates a study by Gill and Mourão (2011), which found higher levels of satisfaction with training than impact.

6. CONCLUSIONS

Participants showed increased knowledge after the course, were satisfied, and used the knowledge gained on their professional practice.

The evaluations in this study will contribute to the construction of an evaluation methodology that considers the specifics of health care, seeking to support decision making in compliance with technical, ethical, economic and political aspects. It will also enable feedback and planning of the evaluated trainings.

Further research on the theoretical and methodological dimensions of evaluations of training programs is recommended in order to consolidate the topic of training evaluation as a line of research in health care.

Whereas in the field of health care, satisfaction and learning evaluations are usually used to measure results of actions in training and professional development, this study attempted to advance the methodology for evaluation of health care training by applying a model developed by organizational psychology. Although aspects related to the impact of the training were analyzed, the study had some limitations.

The study verified impact at just one point after the training. The ideal would be to collect information on impact more than once, in order to monitor the long-term effects of the training. In addition, further studies that address how much frequency of use of knowledge acquired in the introductory training translates into changes in health conditions of the population are needed.

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Table 1 - Distribution of the material analyzed by type of evaluation. São Paulo - 2011

Evaluations	N1	N2	Satisfaction		Learning				Impact	
					Pre		Post			
			F	%	F	%	F	%	F	%
Group A	60	66	59	89.3	63	95.5	57	86.4	56	84.8
Group B	70	52	0	0	0	0	0	0	52	100
Instructors	8	6	6	100	0	0	0	0	0	0
Total	**138**	**124**	**59**	**50**	**63**	**53.4**	**57**	**48.3**	**108**	**91.5**

Table 2 - Frequency of use of knowledge from the course in participants' daily work in groups A and B, São Paulo - 2011

Item	Never		Sometimes		I don't know		Frequently		Always	
	A %	B %	A %	B %	A %	B %	A %	B %	A %	B %
1. Prevention and promotion	1.7	0	16	5.7	1.8	1.9	44.6	50	35.7	42.3
2. Territory	1.7	1.9	25	11.5	0	5.7	58.9	67.3	14.2	13.5
3. Humanization	0	3.8	3.6	7.7	1.8	7.7	35.7	36.5	58.9	44.2
4. Information System	1.8	3.8	12.7	13.5	1.8	3.8	34.5	36.5	49	42.3
5. Home visits	5.3	7.7	5.3	9.6	1.8	7.7	39.2	32.7	49	42.3
6. Public policy	12.5	5.7	41	34.6	8.9	3.8	33.9	36.5	3.5	19.2
7. Health care system	1.8	1.9	16	3.8	1.8	1.9	50	48	30.3	44.2
8. Popular participation	5.3	0	12.8	19.2	0	3.8	39.3	44.2	37.5	32.7
9. Professional assignments	0	0	8.9	6	0	0	32.1	26	58.9	68
10. Public health	0	3.8	17.8	15.4	3.6	3.8	55.3	55.7	23.2	21.1
11. SUS	0	1.9	25.5	7.7	1.8	1.9	50.9	50	21.8	38.4
12. Interdisciplinary	3.6	0	14.2	5.7	0	5.7	55.4	53.8	26.7	34.6
13. Family care	0	0	5.3	15.4	0	3.8	37.5	40.3	57.1	40.3

Legend: SUS – Sistema Único de Saúde (Brazilian Public Health System)