

## Online Training of Behavioral Health Providers for Primary Care Practice

Daniel J. Mullin, PsyD, Judith A. Savageau, MPH, and Kate Sullivan, BS  
Department of Family Medicine and Community Health, University of Massachusetts Medical School

**Introduction:** Many behavioral health providers have not received training in primary care practice during their education. Since 2007, the online Certificate in Primary Care Behavioral Health course has been completed by thousands of behavioral health providers. An evaluation of the course assessed whether learner’s baseline confidence in their abilities to address behavioral health concerns in primary care settings changed over time, whether learning outcomes for live offerings of the course differed from asynchronous offerings, and whether learning outcomes for psychologists and social workers differed. **Method:** Learners were asked to rate their confidence in their abilities using 10 retrospective pre–post questions. Responses from 14 cohorts of learners, between 2011 and 2019 were assessed. *T*-tests and analyses of variance were used to compare groups. **Results:** Learners’ baseline confidence in their abilities changed in three of the areas assessed. Those completing the course asynchronously reported outcomes equal to or greater than those completing the course synchronously. In all but one domain, psychologists and social workers reported equal increases in their confidence. **Discussion:** Learners reported significant improvements in confidence in their ability to work as behavioral health providers in primary care. With one exception, these findings did not differ for psychologists and social workers. Over time, baseline confidence of behavioral health providers enrolling in the course increased in some areas, particularly those focused on patients with substance use disorders. Learning outcomes for the asynchronous version of the course support the continued delivery of asynchronous training of behavioral health providers working in primary care.

### **Public Significance Statement**

Many patients with behavioral health needs visit their primary care provider to get those needs addressed. Primary care providers are hiring behavioral health providers to join their teams and help care for these patients. However, it is important to train these behavioral health providers so they understand how to work on these primary care teams. Our study shows that online training can help behavioral health providers increase their confidence for working on these teams.

**Keywords:** integrated primary care, integrated behavioral health, primary care behavioral health, online education, program evaluation

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Daniel J. Mullin, PsyD  <https://orcid.org/0000-0001-7121-9403>

Judith A. Savageau, MPH  <https://orcid.org/0000-0002-3987-7403>

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Correspondence concerning this article should be addressed to Daniel J. Mullin, Department of Family Medicine and Community Health, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, MA 01655, United States. Email: [Daniel.Mullin@umassmed.edu](mailto:Daniel.Mullin@umassmed.edu)

As many as 44% of primary care practices in the United States include a colocated clinical social worker or clinical psychologist (Richman et al., 2020). Other behavioral health (BH) providers such as licensed professional counselors, marriage and family therapists, and certified alcohol and drug counselors are also being added to primary care teams. This heterogeneous group of clinicians is commonly referred to as BH providers, BH clinicians, or BH consultants. They have graduated from diverse academic training programs and received diverse clinical training. However, a majority of BH health providers have not received formal training in primary care practice during their graduate education (Cubic et al., 2011; Rosenberg & Mullin, 2018). This is a concern given that preparation for primary care practice is substantially different from preparation for practice in specialty mental health settings (Hall et al., 2015). For example, primary care practice requires close coordination of care with team members not trained in behavioral health. In addition, primary care practice also requires skill in addressing a very broad range of presenting problems and less time is available for assessment prior to offering an intervention. Likewise, rapid engagement and narrowly targeted interventions are important distinctions between primary care and specialty mental health practice.

In 2007, the Department of Family Medicine and Community Health at the University of Massachusetts Medical School began offering online training designed to prepare BH providers to integrate their care with primary care providers (Blount & Miller, 2009). This program, entitled The Certificate in Primary Care Behavioral Health, includes content in the following areas: Primary Care Culture and Needs; Evidence-Based Therapies and Substance Abuse in Primary Care; Behavioral Health Care for Chronic Illnesses; Psychotropic Medication in Primary Care; Behavioral Medicine Techniques; and Families and Culture in Primary Care. Further details on the curriculum are available at <https://www.umassmed.edu/cipc>. This curriculum was built by psychologists and physicians with real-world experience collaboratively caring for patients in primary care practices. The program was intended to supplement the graduate training of BH providers who were hired to join primary care teams. Since 2007, numerous similar training programs have been deployed to address the needs of the primary care workforce (Serrano et al., 2018).

In September of 2016, the Certificate Program in Primary Care Behavioral Health was transitioned

from a live online course to an asynchronous (pre-recorded) course. Whereas previously learners would gather in real-time to interact with the faculty, after the transition to the asynchronous format, learners engaged with content at their own pace and at a time of their choosing. This change was made to provide greater flexibility for learners to participate in the course. The asynchronous course was produced by editing video-recorded content from the synchronous version. While minor improvements to synchronous content had been integrated in each offering, the asynchronous version was finalized, and has remained static since 2016. At the conclusion of both synchronous and asynchronous course offerings, all learners were invited to complete a self-assessment of their confidence in their own knowledge and skills.

Herein, we report on the results of a program evaluation of this certificate program. This initial evaluation was conducted under Level 1 of Kirkpatrick's Levels of Evaluation (Kirkpatrick, 2006). In Kirkpatrick's framework, Level 1 assesses learner's reaction to educational content. This evaluation had three objectives to determine: (a) whether learners' self-reported baseline confidence in the courses' main subject areas changed in the period between 2011 and 2019; (b) whether there was any significant difference between the self-reported confidence of learners who completed the live course (i.e., synchronous) and those who completed the course asynchronously; and (c) whether the self-reported outcomes of psychologists and clinical social workers were significantly different.

## Method

### Study Design

This study is a retrospective program evaluation of learners' self-reported outcomes after participating in the course between 2011 and 2019. Over the course of 8 years, the training was offered 14 times. The synchronous training was offered seven times between early 2011 and early 2016 while the asynchronous training was offered seven times between late 2016 and late 2019. The details of the curriculum and how it was developed have been described elsewhere (Blount & Miller, 2009).

### Participants

Between late 2011 and late 2019, several thousand diverse health care providers were invited to

register for the course. Marketing for the course was done primarily via Internet promotion using social media and advertisements. The course was also promoted at exhibitions at interprofessional national conferences, such as the annual conference of Collaborative Family Health Care Association. There is a fee for course participation; a certificate is provided upon completion. Typical learners in the course include social workers, psychologists, and licensed mental health counselors although participants may also include, for example, physicians from various specialties, psychiatrists, nurses, graduate students, and marriage and family therapists. Although there has been international participation, learners come mostly from the United States and Canada.

### Data Measures and Collection

At the conclusion of the course, learners completed a self-reported, retrospective, pre/post evaluation of their confidence in their abilities and knowledge. Learners were invited to complete this self-evaluation by email and directed to an online survey tool (Survey Monkey Inc., San Mateo, CA). Three reminders were sent to nonresponders, one reminder per week for up to 3 weeks. This methodology was used for both synchronous and asynchronous courses.

Retrospective pre/post evaluations are completed by the learner when all of the learning activities have concluded. A typical question will ask a learner to report their confidence in their knowledge or skill before the course began and also at the conclusion of the course (Levinson et al., 1990). The difference between the reported pre/post ratings are understood to be a measure of the impact of the course. This evaluation method has been in use for decades and is recognized as a valid approach to evaluating educational interventions (Bhanji et al., 2012; Skeff et al., 1992). While some have raised concerns about cognitive biases introduced by this design, there are notable advantages to this approach. The primary advantage is a reduction in response shift bias, which occurs when learners overestimate their preintervention knowledge (Drennan & Hyde, 2008; Moore & Tananis, 2009).

The course evaluation contained approximately 25 questions assessing confidence in their abilities and knowledge before and after the course as well as several demographic questions. Because of the changing landscape of BH care over the past 10–15 years, questions varied slightly from year to year

with some questions dropped over time. For the purposes of the evaluation described here, 10 retrospective pre/post questions that were asked consistently from Fall 2011 to Fall 2019 were assessed. The full questionnaires from 2011 and 2019 are available in the [online supplementary materials](#). This project was approved by the University of Massachusetts Medical School's Institutional Review Board (IRB) and granted a nonhuman subjects' waiver.

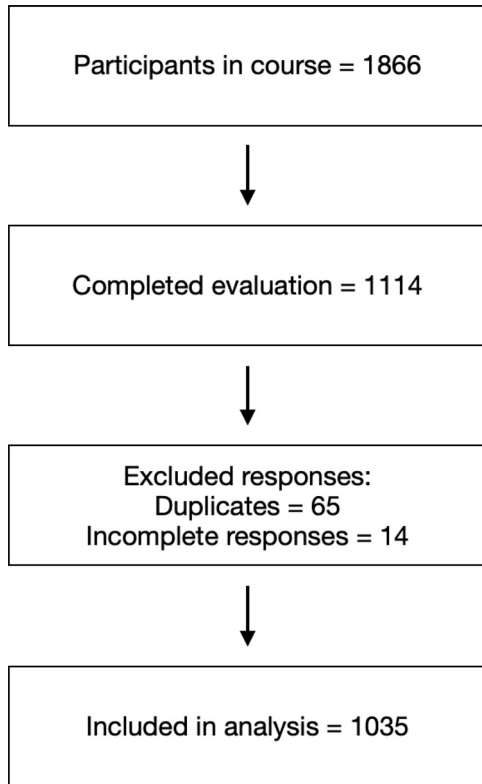
### Data Analysis

Our analysis was limited to assessing the 14 course offerings between 2011 and 2019 (seven in a synchronous mode and seven conducted asynchronously). The evaluation data was downloaded from Survey Monkey into statistical analysis software (IBMSPSS Statistics for Windows, Version 26). Delta scores were computed for each question calculating postscores minus prescores such that a positive delta indicated improvement from pre- to postassessment. Using these delta scores, both students' *t*-tests and analyses of variance (ANOVAs) were used to compare groups as outlined in the three evaluation objectives: (a) baseline scores between those in the 2016 synchronous course and those in the 2019 asynchronous course; (b) scores of those in the synchronous learning groups to those who completed the course asynchronously; and (c) scores of psychologists and social workers within each of the two learning modes. A *p* value of  $< .05$  was used to assess statistical significance for all comparisons.

### Results

Of the several thousand learners invited to participate in this course, 1,866 enrolled in the course between Fall 2011 to Fall 2019. Of those, 1,114 completed the pre/post self-evaluation for a response rate of 60% (see [Figure 1](#)). Fourteen participants were removed from the dataset due to incompleteness (e.g., less than 50% of questions answered) and 65 were removed due to duplicate responses. The final dataset used for our analysis was  $N = 1,035$ . [Table 1](#) displays participant demographics, and [Table 2](#) displays a breakdown of number of participants in each cohort. Descriptive findings of the 10 retrospective pre/post questions are outlined in [Table 3](#).

**Figure 1**  
*Recruitment and Analysis*



### Changes in Baseline Knowledge and Skills Between 2011 and 2019

We assessed the baseline scores of course participants to gauge if those in the later cohorts might

**Table 1**  
*Participant Demographics (N = 1,035\*)*

Education	N	%
High school	4	0.4
Associates	3	0.3
Bachelors	35	3.5
Grad student	26	2.6
Masters	599	60.0
Doctoral	332	33.2
Clinician type	N	%
Psychologists	405	39.9
Social workers	379	37.4
Other**	230	22.7

\*Ns may not total to 1,035 because of sporadic missing data. \*\*Other included Nursing, Peer Support Providers, Case Management, etc.

**Table 2**  
*Sample Sizes Per Cohort (N = 1,035)*

Cohort	Type of training	N
Fall 2011	synchronous	73
Fall 2012	synchronous	52
Fall 2013	synchronous	40
Fall 2014	synchronous	119
Spring 2015	synchronous	52
Fall 2015	synchronous	88
Spring 2016	synchronous	89
Fall 2016	asynchronous	80
Spring 2017	asynchronous	81
Fall 2017	asynchronous	63
Spring 2018	asynchronous	87
Fall 2018	asynchronous	47
Spring 2019	asynchronous	73
Fall 2019	asynchronous	91

be starting the course with greater confidence than those in the earlier cohorts. When comparing the Fall 2011 cohort to the Fall 2016 cohort (first offering in the synchronous group compared to first offering in the asynchronous group), no significant differences in confidence were identified. In assessing baseline scores among those in the last course offering of the synchronous group (Spring 2016) to the last offering among the asynchronous cohorts (Fall 2019), three of the 10 questions had a significantly higher baseline score among those in the asynchronous group: identifying substance abuse problems for patients presenting with medical complaints; working collaboratively with physicians to help patients with substance abuse problems; and discussing common psychotropic medications with patients (see Table 4).

### Comparing Asynchronous and Synchronous Learning Outcomes

The comparison of delta scores between participants in the synchronous course offerings with those in the asynchronous courses identified seven of the 10 questions having higher delta scores in the asynchronous group (see Table 5). Statistically significant higher confidence scores were noted in: identifying substance abuse problems among patients with medical complaints; assessing developmental problems; assessing, engaging, and intervening to help children with behavioral problems; describing evidence-based biopsychosocial approaches to chronic illness; discussing common psychotropic medications with patients; adapting

**Table 3**  
*Descriptive Findings for Pre/Post Survey Items*

For each question, please rate your confidence in your skills and abilities both <u>before</u> and <u>after</u> taking the course	Before taking the course	After taking the course
	N M (SD) Range*	N M (SD) Range
Please rate your ability to: Identify substance abuse problems	N 1,032 M 4.8 (1.4) Range 1–7	N 1,032 M 5.9 (0.9) Range 1–7
Please rate your ability to: Work collaboratively w/MDs to help patients w with substance abuse	N 1,028 M 4.6 (1.4) Range 1–7	N 1,029 M 5.8 (1.0) Range 1–7
Please rate your ability to: General assessment for developmental problems	N 987 M 4.1 (1.6) Range 1–7	N 983 M 5.3 (1.3) Range 1–7
Please rate your ability to: Give anticipatory guidance on behavioral issues	N 987 M 4.6 (1.5) Range 1–7	N 987 M 5.7 (1.2) Range 1–7
Please rate your ability to: Intervene to help children with behavioral problems	N 989 M 4.4 (1.6) Range 1–7	N 985 M 5.5 (1.2) Range 1–7
Please rate your ability to: Describe evidence-based bio-psycho approach to chronic illness	N 1,022 M 4.5 (1.5) Range 1–7	N 1,021 M 5.9 (1.0) Range 1–7
Please rate your ability to: Discuss psychotropic meds with patients	N 1,024 M 4.5 (1.5) Range 1–7	N 1,025 M 5.6 (1.1) Range 1–7
Please rate your ability to: Conceptualize stages of change of patients	N 1,024 M 5.0 (1.4) Range 1–7	N 1,021 M 6.1 (0.9) Range 2–7
Please rate your ability to: Adapt approach based on cultural factors	N 1,026 M 5.2 (1.2) Range 1–7	N 1,025 M 6.0 (0.8) Range 2–7
Please rate your ability to: Conduct a family meeting	N 1,022 M 4.4 (1.5) Range 1–7	N 1,021 M 5.6 (1.1) Range 1–7

\* Scale: 1 = *Not at all Confident*, 4 = *Neutral* to 7 = *Extremely Confident*.

approaches to patients based on cultural factors; and conducting a family meeting.

**Comparing Outcomes for Psychologists and Social Workers**

When pre/post assessments were evaluated comparing psychologists to social workers (regardless of training mode), the only significant difference between the two provider types was that psychologists had higher delta scores in their confidence to conduct a family meeting ( $t = 2.86; p < .01$ ; Table 6). In the other domains that were assessed, outcomes were not significantly different comparing psychologists and social workers.

**Discussion**

**Overview**

We evaluated the learning outcomes of psychologists and social workers participating in a course focused on training BH providers to practice as members of primary care teams. This course transitioned from a synchronous (live) format to an asynchronous (pre-recorded) format in 2016. We investigated whether this transition impacted self-reported confidence in knowledge and abilities. We also investigated whether or not the baseline confidence of learners changed between 2011 and 2019 and whether or not learning outcomes were different when comparing psychologists to social workers.

**Table 4**

*Comparison of Prescores Between Subpopulations (Last Cohort in Synchronous Group Versus Last Cohort in Asynchronous Group)*

Cohort confidence level in each activity	Spring 2016 <i>M (SD)</i>	Fall 2019 <i>M (SD)</i>	<i>T</i> -test; <i>p</i> value
Identifying substance abuse problems for patients presenting with medical complaints	4.64 (1.27)	5.23 (1.32)	<b>-3.00 (&lt; .01)</b>
Working collaboratively w/physicians to help pts w/substance abuse problems	4.40 (1.37)	4.91 (1.12)	<b>-2.62 (&lt; .01)</b>
Doing general assessment for developmental problems	4.09 (1.64)	4.13 (1.66)	-0.14 (.89)
Giving anticipatory guidance on behavioral issues to parents in ways acceptable to them	4.51 (1.52)	4.59 (1.51)	-0.35 (.73)
Briefly assess, engage, and intervene to help children with behavioral problems	4.40 (1.55)	4.38 (1.68)	0.05 (.96)
Describing evidence-based biopsychosocial approaches to at least one chronic illness	4.45 (1.35)	4.84 (1.45)	-1.79 (.08)
Discussing common psychotropic meds with patients	4.38 (1.35)	4.92 (1.33)	<b>-2.62 (.01)</b>
Conceptualizing stage of change of patients in relation to health behavior problems and matching motivational approach	5.00 (1.17)	5.26 (1.26)	-1.38 (.17)
Adapting approach to patients based on knowledge of cultural factors	5.08 (1.02)	5.23 (1.16)	-0.91 (.36)
Conducting a family meeting	4.13 (1.18)	4.42 (1.56)	-1.38 (.17)

*Note.* Likert scale 1 (*low*)–7 (*high*). Including only those participants with at least a Master's degree in *T*-tests. The bold values denotes the statistically significant values.

Self-reported baseline confidence in learner's abilities did increase over time. This is not surprising given the growing attention to workforce development for primary care and BH integration in the United States (Rosenberg & Mullin, 2018; Macchi & Cordes, 2018). Learners completing the course in 2019 reported greater baseline confidence in their abilities in multiple domains. Educational and public health efforts to address the

opioid epidemic may account for greater awareness and confidence related to the care of patients with substance use disorders. It is unclear what might account for greater self-reported confidence in addressing common psychotropic medications with patients.

A variety of self-reported learning outcomes were found to be significantly greater when comparing those taking the asynchronous course to those

**Table 5**

*Comparison of Delta Scores (Posttraining–Pretraining) Between Those Trained in the Synchronous Mode Versus Those Who Participated in the Asynchronous Training*

Cohort confidence level in each activity	Asynchronous <i>M (SD)</i>	Synchronous <i>M (SD)</i>	<i>T</i> -test; <i>p</i> value
Identifying substance abuse prob for patients presenting with medical complaints	1.10 (1.03)	0.95 (1.07)	<b>2.18 (.03)</b>
Working collab w/physicians to help pts w/substance abuse problems	1.25 (1.03)	1.17 (1.15)	1.07 (.29)
Doing general assessment for developmental problems	1.25 (1.06)	1.00 (1.13)	<b>3.44 (.001)</b>
Giving anticipatory guidance on behavioral issues to parents in ways acceptable to them	1.11 (0.99)	1.00 (1.06)	1.61 (.11)
Briefly assess, engage, and intervene to help children with behavioral problems	1.15 (1.06)	0.95 (1.06)	<b>2.70 (&lt; .01)</b>
Describing evidence-based biopsychosocial approaches to at least one chronic illness	1.42 (1.13)	1.26 (1.11)	<b>2.19 (.03)</b>
Discussing common psychotropic meds with patients	1.16 (0.98)	0.97 (1.04)	<b>2.96 (&lt; .01)</b>
Conceptualizing stage of change of pts in relation to health behavior problems and matching motivational approach	1.08 (1.06)	1.03 (1.05)	0.72 (.48)
Adapting approach to pts based on knowledge of cultural factors	0.93 (0.92)	0.69 (0.84)	<b>4.21 (&lt; .001)</b>
Conducting a family meeting	1.34 (1.06)	1.11 (1.07)	<b>3.21 (.001)</b>

*Note.* Likert scale 1 (*low*)–7 (*high*). Including only those participants with at least a Master's degree in *T*-tests. The bold values denotes the statistically significant values.

**Table 6**

*Comparison of Delta Scores (Posttraining–Pretraining) Between Psychologists and Social Workers—Regardless of Training Mode*

Cohort confidence level in each activity	Psychologists <i>M (SD)</i>	Social workers <i>M (SD)</i>	<i>T</i> -test; <i>p</i> value
Identifying substance abuse problems for patients presenting with medical complaints	1.08 (1.05)	1.02 (1.04)	0.80 (.43)
Working collaboratively with physicians to help patients with substance abuse problems	1.26 (1.10)	1.18 (1.10)	1.06 (.29)
Doing general assessment for developmental problems	1.17 (1.18)	1.14 (1.04)	0.38 (.70)
Giving anticipatory guidance on behavioral issues to parents in ways acceptable to them	1.09 (1.05)	1.03 (0.98)	0.72 (.47)
Briefly assess, engage, and intervene to help children with behavioral problems	1.07 (1.11)	1.05 (1.03)	0.23 (.82)
Describing evidence-based biopsychosocial approaches to at least one chronic illness	1.34 (1.12)	1.38 (1.07)	−0.44 (.66)
Discussing common psychotropic meds with patients	1.07 (1.02)	1.09 (1.02)	−0.28 (.78)
Conceptualizing stage of change of pts in relation to health behavior problems and matching motivational approach	1.08 (1.09)	1.09 (1.06)	−0.17 (.86)
Adapting approach to pts based on knowledge of cultural factors	0.82 (0.91)	0.80 (0.85)	0.21 (.83)
Conducting a family meeting	1.33 (1.08)	1.11 (0.98)	<b>2.86 (&lt; .01)</b>

*Note.* Likert scale 1 (*low*)–7 (*high*). Including only those participants with at least a Master’s degree in *T*-tests. The bold values denotes the statistically significant values.

taking the live, synchronous course. This finding provides important evidence regarding the value of asynchronous, online educational modalities to improve the confidence of BH providers working in primary care. While a variety of contemporary teaching approaches such as the Project Extension for Community Health Outcomes (ECHO) emphasize live interactive education, the results of our evaluation suggest that asynchronous approaches can be successful in addressing workforce development needs (Arora et al., 2014). While the development of asynchronous online trainings is likely to be more time and labor intensive than approaches modeled after Project ECHO, it may be easier to scale and maintain asynchronous trainings.

Finally, our evaluation explored the learning outcomes of psychologists and social workers. These two professions are well represented in primary care and represent the groups that have participated in this course in the greatest numbers. The results of our evaluation found that psychologists and social workers benefited equally from participation in this course. The only significant difference in outcomes for these two groups was with regard to the ability to conduct a family meeting. Psychologists had more significant gains in their confidence in conducting a family meeting. Many psychologists lack explicit training in working with families, and hence may have had more

opportunities to increase their confidence to do this work through their participation in this course. The implications of our findings suggest that both psychologists and social workers can benefit from training focused on integrated care, despite the fact that psychologists typically have a doctoral degree and the majority of practicing clinical social workers do not.

**Strengths and Limitations**

The evaluation reported here has a number of strengths. The sample included multiple cohorts of learners across multiple years of training. Learners were asked to self-report their confidence immediately following training, limiting concerns about their ability to recall their experiences with the course. Furthermore, participants in the course were recruited from across the United States and beyond and represent a heterogenous group of learners with diverse backgrounds resulting in a greater generalizability of our findings.

Despite these strengths, there are limitations to this evaluation of a real-world training program. Learning outcomes were assessed using a self-reported retrospective, pre/post methodology. While this is a widely recognized approach to assessing the impact of educational interventions, this methodology is subject to social-desirability bias, which may

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have inflated the actual change in scores over time. For this reason, it is difficult to know with certainty the actual knowledge and skills of learners who completed this course. Objective measurement of knowledge and skill is superior to self-reported confidence and skill (Dunning et al., 2004; Snibson et al., 2018). This study's response rate of 60% is consistent with rates of participation for other similar evaluations of health care educational programs (Field et al., 2002; Weaver et al., 2019). Nevertheless, it is unclear if our results are generalizable to those who did not participate in the evaluation since we did not have sufficient data on nonrespondents to be able to assess the potential bias.

### Future Directions

The learning needs of BH providers working in primary care are diverse as the group is quite heterogeneous. Strategies for tailoring educational content of trainings to the specific needs of each learner should be explored. Specifically, evaluations should advance from Kirkpatrick's Level 1 (Reaction) to Level 2 (Learning) or Level 3 (Behavior) of the Evaluation model of educational programs. This would require objective measurement of learners' knowledge or direct observation of their practice (Kirkpatrick, 2006). Future evaluations of similar online educational programs should consider additional approaches to assessing learning outcomes to supplement self-reported measures. Efforts should be made to understand more about the potential of asynchronous training to improve self-reported knowledge and skills, in addition to learner's confidence. This is a particularly urgent task in the context of a rapid increase in online education during the pandemic of 2020.

Head-to-head comparisons of outcomes from synchronous educational approaches, such as those modeled after Project ECHO, and asynchronous approaches, such as the Certificate Program in Primary Care Behavioral Health, should be conducted to clarify the relative value of each approach. It would be helpful to increase understanding regarding the return on investment associated with each approach and the learning needs that are best addressed by each approach.

### References

- Arora, S., Thornton, K., Komaromy, M., Kalishman, S., Katzman, J., & Duhigg, D. (2014). Demonopolizing medical knowledge. *Academic Medicine*, 89(1), 30–32. <https://doi.org/10.1097/ACM.0000000000000051>
- Bhanji, F., Gottesman, R., de Grave, W., Steinert, Y., & Winer, L. R. (2012). The retrospective pre-post: A practical method to evaluate learning from an educational program. *Academic Emergency Medicine*, 19(2), 189–194. <https://doi.org/10.1111/j.1553-2712.2011.01270.x>
- Blount, F. A., & Miller, B. F. (2009). Addressing the workforce crisis in integrated primary care. *Journal of Clinical Psychology in Medical Settings*, 16(1), 113–119. <https://doi.org/10.1007/s10880-008-9142-7>
- Cubic, B., Neumann, C., Kearney, L., McGrath, R., Ruddy, N., Rybarczyk, B., & Zamudio, A. (2011). Report of the Primary Care Training Task Force APA Board of Educational Affairs American Psychological Association. American Psychological Association.
- Drennan, J., & Hyde, A. (2008). Controlling response shift bias: The use of the retrospective pre-test design in the evaluation of a master's programme. *Assessment & Evaluation in Higher Education*, 33(6), 699–709. <https://doi.org/10.1080/02602930701773026>
- Dunning, D., Heath, C., & Suls, J. M. (2004). Flawed self-assessment: Implications for health, education, and the workplace. *Psychological Science in the Public Interest*, 5(3), 69–106. <https://doi.org/10.1111/j.1529-1006.2004.00018.x>
- Field, T. S., Cadoret, C. A., Brown, M. L., Ford, M., Greene, S. M., Hill, D., Hornbrook, M. C., Meenan, R. T., White, M. J., & Zapka, J. M. (2002). Surveying physicians: Do components of the "Total Design Approach" to optimizing survey response rates apply to physicians? *Medical Care*, 40(7), 596–605. <https://doi.org/10.1097/00005650-200207000-00006>
- Hall, J., Cohen, D. J., Davis, M., Gunn, R., Blount, A., Pollack, D. A., Miller, W. L., Smith, C., Valentine, N., & Miller, B. F. (2015). Preparing the workforce for behavioral health and primary care integration. *Journal of the American Board of Family Medicine*, 28(Suppl. 1), S41–S51. <https://doi.org/10.3122/jabfm.2015.S1.150054>
- Kirkpatrick, D. L. (2006). Seven keys to unlock the four levels of evaluation. *Performance Improvement*, 45(7), 5–8. <https://doi.org/10.1002/pfi.2006.4930450702>
- Levinson, W., Gordon, G., & Skeff, K. (1990). Retrospective versus actual pre-course self-assessments. *Evaluation & the Health Professions*, 13(4), 445–452. <https://doi.org/10.1177/016327879001300406>



- Macchi, C. R., & Cordes, C. C. (2018). Graduate internship training of integrated behavioral health in primary care (IBHPC). In C. R. Macchi & R. Kessler (Eds.), *Training to deliver integrated care: Skills aimed at the future of healthcare* (pp. 161–176). Springer International. [https://doi.org/10.1007/978-3-319-78850-0\\_9](https://doi.org/10.1007/978-3-319-78850-0_9)
- Moore, D., & Tananis, C. A. (2009). Measuring change in a short-term educational program using a retrospective pretest design. *American Journal of Evaluation, 30*(2), 189–202. <https://doi.org/10.1177/1098214009334506>
- Richman, E. L., Lombardi, B. M., & Zerden, L. D. (2020). Mapping colocation: Using national provider identified data to assess primary care and behavioral health colocation. *Families, Systems, & Health, 38*(1), 16–23. <https://doi.org/10.1037/fsh0000465>
- Rosenberg, T., Mullin, D. (2018). Building the plane in the air . . . but also before and after it takes flight: Considerations for training and workforce preparedness in integrated behavioural health. *International Review of Psychiatry, 30*(6), 199–209. <https://doi.org/10.1080/09540261.2019.1566117>
- Serrano, N., Cordes, C., Cubic, B., & Daub, S. (2018). The state and future of the primary care behavioral health model of service delivery workforce. *Journal of Clinical Psychology in Medical Settings, 25*(2), 157–168. <https://doi.org/10.1007/s10880-017-9491-1>
- Skeff, K. M., Stratos, G. A., & Bergen, M. R. (1992). Evaluation of a medical faculty development program: A comparison of traditional pre/post and retrospective pre/post self-assessment ratings. *Evaluation & the Health Professions, 15*(3), 350–366. <https://doi.org/10.1177/016327879201500307>
- Snibsoer, A. K., Ciliska, D., Yost, J., Graverholt, B., Nortvedt, M. W., Riise, T., & Espehaug, B. (2018). Self-reported and objectively assessed knowledge of evidence-based practice terminology among health-care students: A cross-sectional study. *PLoS ONE, 13*(7), e0200313. <https://doi.org/10.1371/journal.pone.0200313>
- Weaver, L., Beebe, T. J., & Rockwood, T. (2019). The impact of survey mode on the response rate in a survey of the factors that influence Minnesota physicians' disclosure practices. *BMC Medical Research Methodology, 19*(1), 73. <https://doi.org/10.1186/s12874-019-0719-7>

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