Journal of Interprofessional Education & Practice xxx (2017) 1–7

Contents lists available at ScienceDirect

Journal of Interprofessional Education & Practice

journal homepage: http://www.jieponline.com

Creation and initial validation of a 360° Interprofessional Clinic Assessment Tool (IP-CAT) for pre- and post-licensure trainees

C. Scott Smith, MD [a, b, *], Amber Fisher, PharmD [c, d], India King, PsyD [c, d], Donovan Victorine, PharmD [e], Adam Brotman, PsyD [e], Donna Lowther, MN, FNP [c], Jill Hedt, PhD [f], Deborah Smith, DNP, FNP [g], Elena Speroff, DNP, FNP [c], Rick Tivis, MPH [c, d]

[a] Centers of Excellence in Primary Care Education, VA Office of Academic Affiliations, USA
[b] University of Washington, Seattle, WA, USA
[c] Boise VA Center of Excellence in Primary Care Education, Boise, ID, USA
[d] Idaho State University, Pocatello, ID, USA
[e] Boise VA Medical Center, Boise, ID, USA
[f] Department of Veterans Affairs, Boise, ID, USA
[g] Gonzaga University, Spokane, WA, USA

ARTICLE INFO

Article history:
Received 31 October 2016
Received in revised form
17 April 2017
Accepted 19 April 2017

Keywords:
Competence/competencies
Interprofessional
Ambulatory
Continuity clinic
Education
Post graduate
Undergraduate

ABSTRACT

To better understand the effects of interprofessional training on clinical and systems outcomes, there is a need for cross-professional, competency-based assessment instruments that yield scores from which one can make valid inferences. Existing instruments have not been developed across medicine, nursing, pharmacy, and psychology for both pre- and post-licensure trainees. This paper describes our efforts to: 1) provide a crosswalk of the competency documents for these four professions, 2) create an *Interprofessional Clinic Assessment Tool*, focused on engagement with the team and assigned patient panel, and 3) generate initial validation evidence. Preliminary outcome data indicates the *Interprofessional Clinic Assessment Tool (IP-CAT)* is efficient and effective in evaluating interprofessional competencies and facilitating improved interprofessional communication/discussion. Future studies should focus on determining effectiveness in a variety of training settings.

Published by Elsevier Inc.

1. Background

Health education is increasingly team-based and interprofessional. It is important in this environment to link educational innovations to improved trainee performance which, in turn, should lead to better patient and system outcomes. In order to evaluate these educational innovations, assessment instruments are required that function across sites, professions, and academic training levels and are validated in these environments. However, recent reviews have shown that evidence for interprofessional education is weak due to heterogeneity in methods and lack of standardized outcome measures.[1,2]

While interprofessional competency assessment instruments exist, none are designed for and validated in multiple post-licensure trainees, especially in mental health fields. One such tool is the Interprofessional Education Collaborative competency assessment instrument.[3] The IPEC is a self-reported attitudinal survey that was derived from the IPEC competencies.[4] It was developed by expert consensus, is designed for any academic level of trainee, and covers four domains with 42 items rated on 5-point Likert scales. It has had some published validations in health students (medicine nursing, pharmacy, dentistry, public health) but not in mental health disciplines or post-licensure trainees.

A second tool, the Interprofessional Collaboration Assessment Rubric (ICAR-,[5] utilizes direct observation of behaviors. It was developed by a large Canadian consortium that provides several instruments in support of interprofessional education. The ICAR instrument has six domains with 31 items and rates trainees on a developmental scale (minimal, developing, competent, mastery). It has been used at many pre-licensure health training programs but, again, was not designed for or validated with post-licensure trainees beyond medicine residents and has no published evidence validating it in mental health trainees. It also requires significant amounts of time to complete on each trainee, which may lead to very low response rates from faculty and clinic staff.

* Corresponding author. VA Medical Center, 500 W. Fort St., Boise, ID, 83702, USA.
E-mail address: scott.smith2@va.gov (C.S. Smith).

http://dx.doi.org/10.1016/j.xjep.2017.04.004
2405-4526/Published by Elsevier Inc.

What we were interested in developing was a directed instrument to address a subsection of interprofessional competencies that: 1) were important to multiple professional training programs, 2) represented a gap in existing data collection for making high-stakes judgements, and 3) had a low data collection/response burden.

2. Methods

2.1. Design

Subject matter experts and trainees from a single site and four different professions (medicine, nurse practitioner, pharmacy, and psychology) created a competency crosswalk among their profession-specific global competency documents[6–12] and the IPEC competencies.[4] These were iteratively negotiated and modified over eight meetings. The group then selected a subset of these competencies as the basis for the new instrument.

The instrument was iteratively created by review of the competency documents, iterative creation/use of draft versions, feedback, and modification in three steps: first with subject matter experts; then with stakeholders (faculty supervisors, clinic staff, trainees) not previously involved with development; and finally by obtaining validation evidence for the tool locally.

To address comments about faculty comfort in assessing trainee performance from other professions we conducted a performance dimension/frame of reference exercise[13] with faculty groups from each profession. This exercise is designed to clarify the developmental expectations for each academic training level (such as 'student', 'intern', and 'resident'). We asked experienced faculty from each profession to outline an expected range of performance for each academic training level relative to the behavioral anchors. We added these standards to the form (see Appendix 1).

To make this instrument maximally useful, we wanted faculty members to feel comfortable assessing trainees from all professions and to have a low response burden. We investigated whether completing the form as groups of raters could address both of these issues without introducing a 'group think' bias. This would allow raters to complete the assessment during a team or faculty competency committee meeting. We hypothesized that individual faculty who had some information, but not enough to confidently support a score, would take longer to deliberate and would be less likely to provide a score when answering by themselves. By answering in groups, they could pool their information and cross the scoring threshold quicker and with greater certainty. To assess this we measured the percentage of items left blank, the average time to complete the evaluation of all trainees, mean scores, Cronbach's alpha, and the Interclass Correlation Coefficient between individual and group scoring. We asked individual evaluators to record the time required to complete the evaluation. An observer recorded completion time for group evaluations. Data collections were carried out one month apart so as to decrease the maturation effect and any changes in covariates between collections, while allowing raters to forget their specific scores on the individual rating.

Each assessment trigger area (defined below) in the interprofessional clinic assessment tool (IP-CAT) may be scored individually. In addition, a summary score (average of all individual section scores) is calculated.

2.2. Validation

We chose the Downing framework[14] to guide this initial validation. The Downing framework consists of: content, response process, internal structure, relationship to other variables, and consequences.

We assessed the response process using one-on-one conversations with stakeholders about their understanding of the categories and behavioral anchors. We also measured concrete elements of response such as completion rate and time.

We assessed the internal structure of the instrument in two ways. First, we assessed internal consistency by calculating a Cronbach's alpha coefficient. This provides an estimate of the reliability of the latent construct 'engagement (with clinic and patient panel)' as a global instrument score. We compensated for missing data by listwise deletion of observations with missing values. Next, we assessed inter-rater reliability by calculating an Intraclass Correlation Coefficient (ICC) of the form (1,3), where each subject was measured by each rater, and raters were considered the only raters of interest.

We further determined the relationship between this instrument and two outside variables; academic training level and patient complaints. Patient complaints were used because one of the goals of the IP-CAT was to assess "engagement with the trainee's assigned panel" and the most frequent reasons for complaints are 'Didn't communicate in a timely fashion', 'Failed to let me know about lab/x-ray results', or 'Didn't answer my questions' We examined the relationship between academic training level and a trainee's average score using a Spearman rho correlation because of the nonparametric nature of the academic training level data. Next, we divided all primary care providers (nurse practitioners and physicians) into 'high-performer' and 'low-performer' groups based on their overall scores on the clinic assessment tool. These rankings were compared to a composite of the number of patient complaints and requests for change of provider for individual providers over the first six months of the academic year by Chi square. Assessment of consequences was not an explicit intention of this study.

3. Results

This study was reviewed and approved by the institutional review board for our institution. The study was conducted in several stages at a single academic VA hospital between July 2013 and April 2016 (Table 1).

Content development began with a competency crosswalk (see above) conducted by six faculty members and 4 trainees from all four involved disciplines (medicine, nurse practitioner, pharmacy, psychology). During this phase we discovered approximately 80% concordance across all competency documents in seven broad areas: Knowledge, Approach to Practice, Communication, Professional Expectations, Continuous Professional Development, Functioning in a Health Care System, and Advocacy/Improvement (see Table 2). Other elements of competence were listed by some, but not all disciplines. These tended to occur in the more recently created competency documents and included areas such as leadership, teaching, and interprofessional team-based care competencies. In addition, some differences in each profession's underlying approach to patient care appeared to exist based on the wording of competencies. For instance, 'knowledge' for some professions was a list of concrete facts that should be memorized and available for use. For other professions, knowledge was situated in a context and directed toward a goal. These differences were explored in greater depth through discourse analysis.[15] In brief, we identified that some professions preferred the 'two Fs'—find it and fix it (medicine and pharmacy) while others preferred the 'four Es'—engage, empathize, educate, and enlist (NP and psychology).

The tool development group consisted of 11 faculty (from medicine, NP, pharmacy, psychology, and clinic staff) who elected to focus the IP-CAT on two critical areas; 'engagement with the

Please cite this article in press as: Smith CS, et al., Creation and initial validation of a 360° Interprofessional Clinic Assessment Tool (IP-CAT) for pre- and post-licensure trainees, Journal of Interprofessional Education & Practice (2017), http://dx.doi.org/10.1016/j.xjep.2017.04.004