REVIEWS

Communications Training in Pharmacy Education, 1995-2010

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Submitted May 22, 2012; accepted August 28, 2012; published March 12, 2013.

The role of the pharmacist as a "communicator" of information and advice between patients, other healthcare practitioners, and the community is recognized as a vital component of the responsibilities of a practicing pharmacist. Pharmacy education is changing to reflect this, although the difficulty is in designing a curriculum that is capable of equipping students with the necessary knowledge and skills, using activities that are effective in promoting communication competency. The objective of this review was to identify published, peer-reviewed articles concerning communication training in pharmacy education programs, and describe which communication skills the structured learning activities aimed to improve and how these learning activities were assessed. A systematic literature search was conducted and the articles found were analyzed and divided into categories based on specific communication skills taught and type of learning activity used. Oral interpersonal communication skills targeted at patients were the most common skill-type described, followed by clinical writing skills. Common teaching methods included simulated and standardized patient interactions and pharmacy practice experience courses. Most educational interventions were assessed by subjective measures. Many interventions were described as fragments, in isolation of other learning activities that took place in a course, which impedes complete analysis of study results. To succeed in communication training, integration between different learning activities and progression within pharmacy educations are important.

Keywords: communication, educational methods, learning outcomes, pharmacy education

INTRODUCTION

Effective communication plays an essential role in the provision of health services. As early as the 1970s, studies began emerging in the United States examining pharmacist-patient interaction and communication and its effect on patient compliance and overall health outcomes. In 1997, the World Health Organization (WHO) report entitled *Preparing the Pharmacist of the Future: Curricular Development* was released detailing the 7 essential roles of the pharmacist, one of which was "communicator."[1] Studies examining specific interactions between pharmacy students, practicing pharmacists, and patients often find instances of communication breakdown attributable to poor communication skills.[2] Pharmacy communication skills can be improved by education and training.[3,4] In 1997 a report was issued by the International Pharmaceutical Federation and endorsed by the World Health Organization,[5] containing international good pharmacy practice standards, and stating that "at all stages of pharmaceutical education the development and improvement of communication skills should be given due emphasis."

The importance of good communication skills in pharmacy practice and the importance of effective training in these skills is also reflected in general guidelines for pharmacy. For example, in the United States the Accreditation Council for Pharmacy Education (ACPE)[6] standards and guidelines state that, to be capable of fulfilling their responsibilities, pharmacy graduates must be able to communicate and collaborate with patients; care givers; physicians, nurses, and other health care providers; policymakers; members of the community; and administrative and support personnel to engender a team approach to patient care.[6] In Europe the standards set by the European Union are low regarding communication skills. According to a 2005 European Council directive, pharmacy graduates should have "adequate knowledge to evaluate scientific data concerning medicines in order to be able to supply appropriate information on the basis of this

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knowledge" and must be able to give "provision of information and advice on medicinal products."[7] Australia incorporates even more training in social pharmacy fields than American,[8] and communication skills are a mandatory competence for licensing.[9]

Different countries and educational systems contain different definitions of what "communication skills" entail, different communication skills development challenges, different professional careers for pharmacists, and hence, different guidelines about what should be integrated into pharmacy education. However, counseling patients seems to be a vital part in all pharmacy education programs. For example, in the United States, required elements for pharmacy communication courses are well defined and explicit in ACPE standards. [6] These elements include training in effective verbal and written interpersonal communication; health literacy; communicating with diverse patients, families, pharmacists, and other health professionals in a variety of settings, both individually and as a member of a team; interviewing techniques; active listening and empathy; assertiveness and problem-solving techniques; cultural influences on communication of health information; group presentation skills; strategies for handling difficult situations; documentation of pharmacist recommendations and consultations; and principles of behavior modification.[6] Within the newly reformed Finnish bachelor of pharmacy degree program, specific components of the communications curriculum include patient education and counseling, interaction and communication, general communication skills, foreign language, and second national language.[10] In Sweden, the education in communication skills for pharmacists is under discussion as a need for improvement has been identified at several universities.

There is a great deal of interest in further incorporating communication skills education into pharmacy curricula. Thus, it is important to explore published examples on how to devise, structure, and incorporate activities that will develop the desired communication skills in students. The purpose of this review was to identify published, peer-reviewed articles on communication training in pharmacy education and describe the structured learning activities within them and how these learning activities were assessed.

LITERATURE REVIEW

Searches were performed at the end of 2010 in the databases PubMed, EMBASE, ERIC, International Pharmaceutical Abstracts, and PsychINFO, for articles published after 1995 that contained the search words "pharmacy" and "communication" and "student" or "undergraduate." Additionally a broad search on the Internet was done to identify relevant papers not indexed in the search engines. The papers in the *International Journal of Pharmacy Education* (2003-2010) and *Currents in Pharmacy Teaching & Learning* (2009-2010) were searched manually for relevant articles. The literature search found 433 articles.

The titles and abstracts of the articles were assessed to determine their relevance to the objectives for this review. This process reduced the number of studies to 95. A second round of assessment was performed in which the aim, methods, and results sections were examined. A final 61 studies were identified as matching inclusion criteria.[11-71] To be considered for inclusion, articles were required to describe either a method of assessment or intervention focusing on communication skills that was tested and implemented within an undergraduate pharmacy program. The studies chosen did not have to focus solely on communications. Studies were excluded if there was no mention of "communication" in the body of the article, if the article was not in English, or if the article was descriptive only, lacking active assessment or intervention to improve communication skills.

Articles were grouped and categorized based on which communication skill(s) the study was aimed at improving. Each of these categories was then further divided into common groupings. Once data were categorized and described in terms of communication skills, the studies were examined for commonalities of methodology, specifically the type of intervention used to teach individual skills. Assessment methods of communication were considered separately. Some studies were included in multiple categories.

FINDINGS FROM THE LITERATURE REVIEW

Of the 61 articles analyzed, 46 articles were published in pharmacy educational journals with 44 found in the *American Journal of Pharmaceutical Education*. Thirteen articles were published in other pharmacy or medicine-related papers and the remaining 2 were found in educational science-related journals. The literature search was intended to capture articles from around the world, but the results were dominated by American studies, which accounted for more than half of the articles (39 of 61). Five studies were from the United Kingdom, 1 from Ireland, 4 from Australia, 2 from Canada, and 1 from the West Indies. There were 2 studies from Thailand and 3 from Malaysia. Finally, 1 article originated from the United Arab Emirates, 2 from Finland, and 1 from Sweden. Areas of the world that are not represented by the data include South America and Africa.

Description and Categorization of Communication Skills

Communication skills were divided into 2 broad categories: oral communication skills and written communication skills. The category "written" communication skills was then organized into 3 subcategories of writing types: academic, clinical, and reflective. Academic writing skills included research papers and essays, as well as other less common formats such as written online debates[53] and monographs.[29] One article included an exercise on writing a curriculum vitae and letter of intent.[33] Scriptwriting was used in 2 studies as a written method of reinforcing verbal communication skills in a communication course.[21,39] The subcategory of clinical writing skills incorporated all formats specifically directed toward pharmacy practice. These included SOAP (subjective, objective, assessment, plan) notes,[16,52] patient care plans[20,71] and written patient medical histories.[30] One study included activities involving writing patient information handout/pamphlets,[23] 1 study involved writing e-mail advice to a virtual patient,[24] and 1 study used a "patient pathography" (medical history from the patient perspective) format.[12] Reflective writing incorporated journaling and self-reflective exercises. One study[28] involved a self-reflective paper on student attitudes towards interdisciplinary teamwork before and after an interdisciplinary activity. Another incorporated reflective writing into pharmacy practice experience courses.[51] The remaining studies in this category chiefly focused on reflective activities incorporated into a communications course to push students to focus on communication themes and ideas.

Under the category oral communication skills, data were subdivided into interpersonal communication and presentation skills. Presentation skills involved scenarios in which the main activity was that the student was required to stand before any audience, such as a professor, preceptor, or class, and present a topic or idea. This category was separated from interpersonal communication skills because the learning activity emphasized giving rather than sharing information, and did not require any participation of the second party (even if feedback could be given or questions answered). Within these studies, the presentation of a patient case was a common activity,[13,23,42] as was presentation of research.[32,33]

The subcategory of interpersonal communication skills (interaction with 1 or a few others, eg, counseling) was further divided into patient, interprofessional, and general. Improvement of patient interpersonal communication skills was the most common objective seen in the gathered studies. Patient-focused communication activities included learning interviewing techniques, advising and participating in patient education or public health promotion, and consulting. Articles categorized under interprofessional communication skills differed slightly in focus in that the study objective was teaching students to communicate with other health professionals. The majority of these studies involved interdisciplinary activities or seminars that combined pharmacy students with other health professions students, or simulation activities of common interprofessional interactions. One study involved writing a script modeling different communication styles used when talking to a physician over the phone,[39] another involved acting out a conversation with fellow students using improvisation to improve interprofessional conversational skills,[11] while others involved engaging in telephone communication with an actual prescriber.[22,35,50] General interpersonal communications skills are those not directed at a specific type of interaction, but which can be used in all forms of conversation. General interpersonal communication training topics included cultural competency,[59] transactional analysis and personality assessment,[37] emotional intelligence,[60] and self-concept/self-confidence.[41]

Beside the 2 broad categories mentioned, oral and written communication skills, there is a third broad category, "second languages." Although the studies in this category combined a variety of written and verbal communication activities, the focus was on ensuring general competency in language skills. As the focus is on language rather than acquiring a specific communication skill, these studies were placed in a separate category. The articles show that securing language skills is an area of interest in pharmacy education.

Description and Categorization of Learning Activities

The categories describing learning activities and settings included simulated and standardized patient interactions; interdisciplinary activities; seminars, courses, and pharmacy practice experience courses; activities based around the use of Internet or computer technology, and other. The other category included study activities that could not be well described by the previous categories. The data described in each intervention type carries a measure of evidence for the use of that particular methodology in the teaching of communication skills in pharmacy education.

Simulated or standardized patient interactions typically involve a consultation-type activity performed between a student and an individual trained to play a patient in a specifically created scenario. The simulated or standardized patient may be a volunteer, teaching assistant, or fellow student coached to play a particular role, or may be a trained actor, depending on the resources available.

Simulated and standardized patients offer many benefits including the ability for the instructor to adjust the level of challenge in the scenario or to align scenarios with curricula goals, the provision of immediate and expert feedback, and opportunity to practice skills without risk to patients.[15] There were a few studies that involved actual volunteer patients, but these scenarios involved students gathering information from patients via interviews but not giving them advice.[12,18] The large percentage of studies that reported on this type of educational intervention suggests it is a common method of improving oral interpersonal patient communication skills, specifically those related to interview/consultation techniques, and also provides the opportunity to teach clinical writing skills by requiring students to write a patient medical history, SOAP note, or care plan based on the information gathered in the simulated or standardized patient interaction.[12,16,20,24]

Interdisciplinary educational methods are chiefly designed to improve interprofessional communications skills and teamwork, as practicing health professionals are required to share information and coordinate efforts to improve patient care. Interdisciplinary activities reported in the studies reviewed typically involved pharmacy students coordinating and working in groups with students of other health professions, including medicine, nursing, physiotherapy and occupational therapy, nutrition, podiatry, psychiatry, dentistry, and medical imaging and technology.[13,14,23,27,71] However, 2 studies separated the more clinical elements from the interdisciplinary experience, and thus involved students from communication studies and media courses,[28] as well as from critical thinking and writing.[29] In this case, the interdisciplinary format was used so students could gain experience dealing with other communication styles and with students outside the pharmacy program, without being specific to pharmacy practice. Interdisciplinary activities are commonly combined with a simulated or standardized patient scenario as part of a seminar[13,14] or pharmacy practice experience.[26]

Seminars differ from lectures in that they typically involve more discussion and interaction between the speaker and students. A seminar may be standalone, delivered in a workshop-type format[13,14,30]; secondary to a lecture-dominated course (individual[27,34] or series[11,31,35]); or the entire basis of a course.[32,33] The majority of seminar activities described in the studies in this review were secondary to or connected to a communications course. All those studies that reported on course-based activities described as a communications course but did not provide more specific details regarding the activities therein were categorized under "course." Seminar and course activities may be directed at students acquiring any or multiple communication skills.

A pharmacy practice experience course is an activity in which the student is placed within a pharmacy care setting, such as a dispensary, a hospital, or a long-term care facility, to practice communication skills and clinical knowledge. In the studies identified in this review, a variety of pharmacy practice experiences are described. The most common is the advanced pharmacy practice experience (APPE),[22,45,48,50] which is a requirement of the ACPE in the United States. The APPE is performed in a variety of settings, including community pharmacies,[22,45,48] transitional care,[50] and hospital settings. One study also describes an introductory pharmacy practice experience (IPPE).[42] Other studies used practice experience designs, such as a research project on nonprescription drug use in multicultural areas, and required students to interview patients in a community pharmacy.[38] Another involved 4 hospital sessions within a 2-week period in which the students were required to perform medication reviews and patient education.[18] Pharmacy practice experiences are generally designed to improve students' interpersonal patient communication skills and clinical writing skills. Depending on the practice setting, pharmacy practice experiences may additionally assist the student in acquiring interpersonal professional communication skills to varying degrees.

The activities focusing on the use of Internet or computer technologies to improve student communication skills were loosely grouped under "Web technology." No 2 studies in this group used a similar program, however. The activities ranged in complexity from simple online debates,[53] blogging exercises,[46] and peer and faculty feedback,[16] to e-mail communication with virtual patients, [24] to complex multimedia computer-based learning programs.[52] Although computer-based learning programs can be structured in many ways, the particular program described in this study involved a self-learning approach using interactive digital videos, video simulations, and audio clips to teach a diabetes management course.

The studies categorized as "other" involved activities that could not be described by any other heading, and could not be correlated with any other study to create a new category. Activities encompassed oral examination in a therapeutics course,[55] a microteaching exercise,[25] writing and acting out a script,[39] health promotion activities directed to elementary students,[23] and a service-learning course.[54]

Description and Categorization of Assessment

Assessments of communication skills were separated into 2 broad categories: subjective and objective assessments. There seemed to be subjective and objective

assessments carried out in a variety of learning activities (eg, 6 of the simulated patient articles had subjective assessments[13,14,18,20,21,25] and 7 had both subjective and objective assessments[11,15-17,19,23,24]). Only 2 studies did not report any type of assessment.[12,22] Of the 14 articles describing pharmacy practice experiences, 12 involved some sort of assessment; specifically, 6 had only subjective assessment, 3 had only objective assessment, and the remaining 3 had both.

Subjective assessments included student self-assessments, course evaluation questionnaires, and satisfaction measurement instruments. Subjective assessment techniques were the most common method of assessment found in this review. In some studies, subjective measurements were used alone to assess both skill improvement and validity of the educational activity. The "other" category under the subjective assessment heading included 3 studies which involved an "assessment of an assessment," or in which the validity of a common assessment method was analyzed. One study in this category elicited the opinion of pharmacy students regarding the use and value of guideline scoring in simulated or standardized patient interactions,[63] while another study designed assessment tools to evaluate writing abilities and had students subjectively evaluate the usefulness of these tools.[64] The final study under this heading evaluated the usefulness of a course evaluation questionnaire adapted to a communications course.[65] Objective assessments included examinations, pre- and post-intervention evaluations, comparison methods, and expert assessment of skills (eg, assessment by a professor, course instructor). These assessments typically included the assignment of a numerical grade or a comparison to earlier work to demonstrate improvement.

DISCUSSION

This review is limited in that it only included published studies on activities for improving communication skills. Other activities for improving communication skills probably take place in pharmacy education but have not yet been studied and/or documented in the literature. Also, only those that were published in English were included. There is undoubtedly much done within the area of communication skills education that never gets published or is presented only in national forums. It is important to describe, assess, and publish course development. Sharing ideas and development helps move forward an area of common interest in pharmacy education.

The data collected from the studies identified in this review show a high degree of concurrence in both the specific communication skills targeted, as well as in the types of learning activities implemented. Although each learning activity category contains some amount of variation in the details resulting from innovative alterations to the "standard," common frameworks are still readily apparent. Some learning activities and communication skills developed are more frequently used than others, but the same categories keep reappearing. Whether this reflects reality is difficult to say. On one hand, learning activities such as those involving simulated patients, seem to be widespread, at least in the United States, and hence frequently seen in the literature reviewed. On the other hand, teachers/researchers may tend to write about newly developed activities in research reports and hence articles. Pharmacy practice experience, for example, is an activity that is mandatory in most pharmacy education curricula and always contains communication skills training. Thus, if the number of published articles would reflect the communication skills training activities in pharmacy educations, it would probably include more articles dealing with this type of learning activity. Because of their complexity, pharmacy practice experiences are more difficult to assess; thus, fewer structured outcome measurements may take place and fewer papers are published.

The distribution of data shows that simulated and standardized patient interactions are the most common activity in the peer-reviewed literature used to reinforce pharmacy communication skills. This method is used both as a teaching tool and as a standalone assessment technique. A review of pharmacy education found that the majority of studies focused on the use of simulated and standardized patient encounters as an assessment technique rather than an educational tool.[4] The activity was poorly defined in most studies and the specific competencies and skills being investigated often were poorly described. However, the simulated patient design seems to be flexible, can be adapted based on the amount and type of resources available, can be incorporated into the laboratory components of various courses, and reflects real practice scenarios. Despite the critique, the review of simulated and standardized patient encounters suggested this method of learning is underutilized in pharmacy communication education.

The second most common category for studies in this review was pharmacy practice experience courses, which targeted many different aspects of communication.[72,73] Completion of pharmacy practice experiences is a requirement for licensing in many countries, as it helps forge the link between theoretical knowledge and clinical practice through effective communication. The value of this intervention is decreased if the student is sent into the practice experience with no former communication skills training.[67,72] Although practice experiences in a pharmacy setting seem to be accepted as an effective way to improve interpersonal communication skills as well as

some forms of written communication skills, in general they are difficult to arrange and draining to available resources such as educated preceptors, and there is a lack of appropriate assessment methods.[72,74] Portfolios are a method used to assess students' skill and knowledge development in pharmacy practice experiences, often including communication skills assessments.[6,72,75]

A common theme of the data described in this review is that most interventions are designed to target multiple communication skills. Interpersonal communications skills are often targeted alongside either clinical writing skills[12,16,30,71] or presentation skills.[13,23,35] Reflective writing exercises can be used as a follow-up component for most other interventions,[18,28] to promote student self-assessment[51] and reinforce general writing skills. As an example, simulated or standardized patient interactions seem to be a common tool for teaching communication skills. Few simulated or standardized patient interactions are acted out in isolation; most are described as secondary components to communication courses or seminars, and are used as a practical way to reinforce concepts taught in a course. Also, the value of simulated or standardized patient interactions is not isolated to interpersonal communication skills. In the literature, it is a common theme in simulated or standardized patient interactions to include an interdisciplinary component to improve interprofessional communication skills,[13,14,71] or to strengthen clinical writing skills by recording patient medical histories or SOAP notes based on the simulated or standardized patient interaction.[12,16,24,71]

Many of the articles describe interventions that are "fragments" (innovative or new additions to courses and curricula that already exist) and lack a description of the course in its entirety. Therefore, the communication exercise often seems to be assessed out of context. For example, one study talked about the use of "blogging" reflective exercises to reinforce pharmacy communication skills.[46] However, this activity is part of a larger communications course, and students are asked to reflect on course concepts in their blog, without any clear description of the scope of material taught in the course. It is therefore impossible to determine if the blogging exercise itself was responsible for students' improved skills, or if instead communication skills improvement was the result of reflecting on communications concepts taught in the course. If such fragmented learning activities are integrated into a course, and especially without knowledge about the content and structure associated with them, the activity should be well delineated, and its impact should be assessed and validated without interference from concurrent, undefined course activities.

"Fragmented" activities may, however, be effectively used and integrated into the curriculum independent of associated (and ill-defined) courses through "scaffolding" techniques. Scaffolding is an instructional procedure used to aid a learner in working through problems or tasks to attain a higher level of skill.[16] The idea behind this process is to ensure that activities are not acted out in isolation but are linked to later activities in such a way that student skills are advanced and that communications training can progressively increase in scope and difficulty. This is also in line with earlier studies of university educators' views of successful communication skills development.[74] There is likewise a need for more knowledge about where in the students' development (ie, the curriculum) different learning activities are best used, in what order, and in what combinations.

A further concern arising from the data relates to the form of assessment used to demonstrate the value of the educational intervention. Many studies used only subjective measures of assessment (student self-assessments, course evaluation questionnaires, and satisfaction measurements), lowering confidence in the validity of the results. It is difficult for subjective measurements to accurately prove that a skill was acquired or that student skills progressed. Communication skills are a difficult area to accurately judge and objective assessment of student abilities are largely dependent on fair and skilled evaluators. Hence, the question of to what extent objective assessment techniques can provide an accurate measure of a student's communication skills must be raised. Using highly skilled evaluators is often difficult as the assessment process is time consuming and labor intensive, and qualified individuals are difficult to find. Hence, further research is needed to develop and evaluate new or more accurate assessment methods.

There is a lack of studies comparing different learning activities as to outcomes and/or effectiveness in relation to resources needed. Most of the learning activities identified are carried out by students individually and therefore require many work hours from teachers, supervisors, etc, to instruct, supervise, provide feedback on, evaluate, grade students' activities, etc. Further research should aim at advancing knowledge in this area. This might call for larger studies than most of those identified here, preferably conducted in cooperation between different universities and different countries.

SUMMARY

Learning activities intended to improve communications skills are described in the literature. However, many of the activities described are fragments of larger communication courses and curriculum, and typically involve

Table 1. Communication Skills Development and Learning Activities/Assessment Found in 61 Articles Reviewed

		Communications Skills Development, No. of Articles Found (Reference Numbers)							
		Oral				Written			
		Interpersonal							
	Category	Patient	Interprofesssional	General	Presentation	Academic	Clinical	Reflective	Sec Lang
Learning Activity	SP	11 (11-21)	4 (13,14,20,22)	1 (11)	2 (13,23)	1 (21)	4 (12,16,20,24)	2 (18,20)	0
	InterD	5 (13,14,20,23,26)	6 (13,14,20,26-28)	1 (28)	3 (13,23,29)	1 (29)	3 (20,23,26)	1 (28)	0
	Seminar	4 (11,13,14,30)	3 (11,13,14)	1 (11)	4 (13,31-33)	2 (32,34)	3 (30,33,35)	0	0
	Course	6 (12,16,35-38)	3 (28,35,39)	5 (12,28,34,40,41)	3 (29,35,39)	4 (29,35,39,42)	3 (12,16,35)	1 (28)	2 (43,44)
	PPE	12 (18,22,26,35,38, 42,45-50)	3 (26,35,50)	0	2 (35,42)	1 (35)	4 (22,26,30,42)	2(18,51)	0
	WebTech	2 (16,52)	0	0	1 (29)	2 (29.53)	3 (16,24,52)	1 (46)	0
	Other	2 (23,54)	2 (27,39)	0	4 (25,39,54,55)	0	1 (23)	0	0
Assessment	Subjective[a]	24 (11,13-21,23,30, 35-38,47-50,54, 56-58)	9 (11,13,14,20,27,28,35, 39,50)	5 (11,28,37,59,60)	8 (13,25,29, 31-33,35,54)	8 (21,29,32,35,39, 53,61,62)	8 (16,20,23,24, 33,35,56,57)	4 (18,25,28,46)	1 (43) Other 3 (63-65)
	Objective[b]	16 (11,15-17,19,35,26, 40-42,45,48,50,52, 64,66,67)	3 (11,35,50)	4 (11,41,59,68)	9 (23,29,31,32,35, 39,42,55,69)	8 (29,32,34,35,53, 62,64,70,71)	6 (16,24,35,42, 52,66)	2 (32,51)	2 (43,44)

Abbreviations: Sec Lang = second language; SP=Simulated/standardized patient interactions; InterD =interdisciplinary activities; PPE=pharmacy practice experience courses; Web Tech=activities based around the use of internet or computer technology.

[a] Subjective Assessment Techniques include student self-assessment, Course Evaluation Questionnaires (CEQ), and satisfaction measurements.

[b] Objective Assessment Techniques include structured exams, pre/post evaluations, comparison methods, and expert/professor assessment of skills.

innovative interventions that have not previously been analyzed for educational value. Additionally, many studies are assessed by subjective methods. For these reasons, the effectiveness of the education interventions described in this review is uncertain.

Communication interventions should not be carried out in isolation, without progression of the complexity of the activity and the level of competency expected of the student. There is a need for further studies that include more than one, or a few, learning activities at a time, eg, comparing learning methods or studying communication skills development throughout the pharmacy curriculum.

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