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Experiences in Teaching and Learning

## Journal Club Standardization Tool: Helping participants get the JIST

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## ABSTRACT

**Background and purpose:** Clinical pharmacy practice relies on the ability to critically evaluate clinical trials and apply their findings to patient care. The development of these skills begins in pharmacy school, develops during residency programs, and continues to mature while practicing clinical pharmacy. The purpose of this analysis was to evaluate student attitudes and perceptions following implementation of the Journal Interpretation Summary Tool (JIST) into a pharmacy curriculum.

**Educational activity and setting:** The “journal club” is an activity implemented in many curricula with the intent to hone these skills. The JIST is a standardized template aimed at improving the consistency of a journal review by organizing major elements of a trial, allowing the facilitator and participants to navigate through key information and guide the journal club discussion.

**Findings:** Implementation of JIST resulted in an increased level of confidence for a majority of students (63.3%) when conducting and critically evaluating a journal article. More than 80% of students reported they were better able to critically evaluate a published article using JIST, and 91.9% reported JIST provided structure to the journal club process.

**Discussion and summary:** JIST provides the appropriate level of guidance and structure, particularly for the novice pharmacy student or pharmacist. The use of a standardized tool for journal club evaluation may lead to further improvements in applying literature to practice and other skills surrounding the critique of medical literature.

## Background and purpose

Similar to other medical professions, clinical pharmacy practice relies on the ability to appropriately evaluate, interpret, and apply trial results to patient care.<sup>1–5</sup> The perpetual development of these skills begins during pharmacy school and continues to mature during clinical rotations, residency programs, and throughout a clinical pharmacist's career.<sup>1–5</sup> According to the Accreditation Standards and Guidelines published by the Accreditation Council for Pharmacy Education (ACPE), pharmacy graduates must be able to assess and apply knowledge of trial design and literature analysis to provide accurate, evidence-based drug information.<sup>5</sup> Additionally, the skill to accurately interpret and apply evidence-based medicine (EBM) is required for completion of an American Society of Health-System Pharmacists (ASHP)-accredited pharmacy residency program.<sup>6</sup>

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While these skills are vital for pharmacists, a 2009 study by Bickley et al.<sup>7</sup> reported that only 42% of surveyed United States (US) schools of pharmacy require a course that formally teaches the skill set of acquiring, interpreting, and applying EBM. Since this study was published, EBM has become a major topic in pharmacy schools leading to curriculum changes.<sup>8,9</sup> More recently, studies by both O'Sullivan et al.<sup>9</sup> and Phillips et al.<sup>10</sup> report higher percentages of incorporation of EBM into the curriculum than the evaluation by Bickley, et al.<sup>7</sup> The design of these courses differed slightly with regards to how EBM was integrated into the curriculum, such as the creation of elective courses and the various methods in which the subject matter was taught.<sup>9,10</sup> These results showed that more than two-thirds of pharmacy schools were conducting journal club activities, indicating that the use of journal clubs has now become an integral part of pharmacy education.<sup>9,10</sup>

In multiple studies, elective or required EBM courses have resulted in increased student confidence in interpretation and clinical application of literature and improved student performance.<sup>1,2,9-12</sup> These courses all incorporated the review and presentation of journal articles using various methods. Often the term "journal club" is used to define this activity. However, the process itself may vary considerably as there is no universally-accepted standardized format.<sup>11</sup> This lack of standardization may result in minimizing or omitting key aspects during the activity, leading to underachievement or missed educational goals.<sup>13</sup>

Review of studies in pharmacy and medical education that were conducted to evaluate the journal club process have identified significant variations in delivery, ranging from informal discussions to didactic presentations.<sup>9-11</sup> The use of a checklist or structured template has been shown to improve consistency of journal article review, increase participant satisfaction, as well as the perceived educational value of the exercise.<sup>9-15</sup> A systematic literature review evaluating the core processes of a journal club identified several characteristics of success.<sup>16</sup> Included in these were regular and anticipated meetings, appropriate time constraints, a skilled preceptor, use of established critical evaluation methods, and a summary of journal club findings.

The purpose of this paper is to describe a standardized journal club tool, the Journal Interpretation Summary Tool (JIST), which was designed at Brigham and Women's Hospital to incorporate the core characteristics from these findings into the journal club process and to provide structure for the facilitator. The core characteristics selected systematically evaluate the key components discussed below, focusing on an effective critique and evaluation of the journal article. Additionally, this paper aims to assess students' attitudes and perceptions with the use of the template after the incorporation of JIST into a pharmacy practicum course.

## Educational activity and setting

### *Description of JIST template*

The JIST is a model created by the authors of this analysis. It organizes the major elements of a trial, allowing the facilitator and participants to navigate through key information and guide the journal club discussion (Fig. 1). The JIST consists of four main components; background, study overview, patient population, intervention, endpoints, statistics (PIES) method of critique and analysis, and the significant points and implications in clinical practice.<sup>17,18</sup> In preparation for the journal club, the presenter, who is also the facilitator of the activity, is instructed to fill out the JIST with the pertinent information from the study. Although the randomized control trial is the gold standard of study design, the JIST may be utilized for all study designs. The tool instructs the facilitator to spend approximately five minutes per section, leaving the majority of the time for study critique and discussion. The background, study overview, methods, and results sections serve to orient the audience to the topic being presented, while the remainder of the template guides the presenter's discussion into the details and analysis of the chosen study.<sup>17</sup> The presentation is designed to be interactive, such that the audience may stop the presenter at any time for clarification or questions. However, the in-depth analysis should be conducted during the PIES section to maintain flow and timeliness. This is the first study to evaluate student attitudes and perceptions surrounding the implementation of JIST in pharmacy practice.

### *Background*

The background section serves as a brief refresher of the relevant data on the disease state and the therapy being studied (Fig. 1). This includes a general description of the topic as well as previous well-conducted studies and guidelines that define the current standard of practice. As the facilitator discusses previous major trials, the PIES method of critique should be applied to familiarize the audience to the applicability of the previous trials in relation to the current discussion.<sup>18</sup> It is also important to include the relation to current practice and the existing gap in data.

### *Study overview*

After the audience is fully oriented to the topic being presented, the facilitator should begin the general study overview (Fig. 1). The general overview section outlines the core principles of the study. The null hypothesis is stated to focus participants on the scientific question that the researchers are trying to answer. The methods are provided to describe the protocol of the study. This includes the study design, inclusion and exclusion criteria, interventions, endpoints, and statistical analysis. The results of the trial should be systematically reported following the methods to serve as a reference during discussion. Despite the outcomes and design of a trial, authors frequently report their interpretation of the data and its potential impact on current practice. It is important to identify their conclusions up front in the context of the study analysis.

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