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Genre Analysis of Case Reports: A Platform for Training Academic Writing to Medical Students

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Abstract

The present study examined the macrostructure of published Case Reports (CRs) to provide information about the organizational structure of CRs and to develop a framework that can respond to the urgent needs of students at Kermanshah University of Medical Sciences (KUMS). Overall, 100 published reports were selected from the established journals and were analyzed following the Swealsian (1990) model of genre analysis. Another set of data included 32 CRs written by medical students who were invited to report a case, in English, they recently observed during their clinical courses in 2019. Following awareness raising tasks, the students' reports were compared to published CRs. Findings demonstrated variations in the obligatory and optional moves and steps in each section of a case report. The differences can be ascribed to the specific nature of each case and the distinct medical procedures. The study concludes that familiarizing novice researchers with the generic structure of standard case reports can be helpful in understanding medical case reports.

Keywords: case report, genre analysis, KUMS, move, step

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1. Introduction

As a communication tool for conveying acquired knowledge, academic writing demonstrates the writers' intended meaning and their clear understating of a particular subject. It is "a unique form of argument which demonstrates absolute truth, empirical evidence or flawless logic and offers an objective description of natural phenomena" and is based on "exacting methodologies, dispassionate observation and informed reflection" (Hyland, 2005, p. 65). Academic writing is always a form of evaluation that asks students to demonstrate knowledge and show proficiency with certain disciplinary skills of thinking, interpreting, and presenting (Irvin, 2010, p.3); therefore, it is essential for students to learn how to write academically to achieve their academic goals.

Among a plethora of academic writing genres, medical case reports (CRs) produce interesting and educational information for the field of medicine by introducing a new disease, a new way of treatment, or an unexpected relationship between relatively uncommon diseases or symptoms; and their publication helps share knowledge and convey medical experience (Roberts, 2013). The descriptive information presented in each case serves educational and scientific purposes for the medical community (Florek & Dellavalle, 2016). Documenting and recording clinical observations, CRs are valuable tools in education and resource for further research as well (McCarthy& Reilly, 2000). Thus, CRs need to share certain qualities to be recognized by the target community. They comprise the title, abstract, introduction, case description and discussion followed by acknowledgements and references (McCarthy & Reilly, 2000; Rison, 2013). The overarching question is how a case report is constructed to convey its communicative purposes by means of its constituents.

Although CRs are a time-honored integral part of medical literature, studies that have investigated the organizational features of the CRs are few and far between. The existing literature reveals that the macrostructure of the CRs has been analyzed to inform the readers about what information to provide in each section so that the CRs find space for publication (Cohen, 2006; Garg, Lakhan & Dhanasekaran, 2016; Gopikrishna, 2010; Helan, 2012; McCarthy & Reilly, 2000; Rison, 2013; Sun, 2013).

Given the dilemmas involved in writing a medical CR, medical students at Kermanshah University of Medical Sciences (KUMS) often experience stumbling blocks including absence of motivation, inadequate English writing skills, inadequate information about relevant journals and being intimidated by the publication process (Bavdekar & Save, 2015), or they do not know how to rhetorically organize the information appropriate for a brief case report in a standard publication format based on the journal style (McCarthy & Reilly, 2000). One possible reason is that writing a standard CR for the purpose of journal submission and publication is not a prerequisite for the fulfilment of their degree.

Medical students are required to attend clinical courses in different medical wards and report their observation graphically by providing information about a patient such as giving reasons for admission, medical history, progress on ward, current clinical conditions, current medication, results of laboratory or diagnostic tests, medical diagnosis, prognosis and follow up. Clinical observation reports as a requirement for clinical courses are intended to be practiced by medical students and read by their professors. These reports are different from standard CRs published in international journals which address the medical community members worldwide.

CRs are more structured and detailed (including introduction, case presentation, discussion and conclusion) than hospital medical reports produced by medical students. Every so often, medical students encounter a rare or unusual case which is worth reporting; however, they fail to report it to their international academic community due to their knowledge deficit. A typical example relates to the students at KUMS who declare that they have not received any formal instruction concerning how to write an effective case report, and that they are hardly aware of the internal structure and the required information in different sections of CRs.

To provide information about the organizational structure of CRs and help KUMS students to ultimately write publishable reports, the present study examined the macrostructure of published reports following the Swalsian (1990) model of genre analysis to develop a framework that can respond to the urgent needs of KUMS students. Following awareness raising tasks, the students' reports were compared to published CRs. More particularly, the study aimed to answer the following questions:

1. What are the generic organizations of standard CRs published in ISI-indexed journals?
2. To what extent are the students' CRs similar to/different from the standard CRs published in ISI-indexed journals?

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2. Review of the Literature

Academic writing is an argument to offer an objective description of natural phenomena (Hyland, 2005). It comprises multiple texts and tasks embedded in disciplinary practices such as writing a biography, classification of species, researching the functioning of phenomena, mapping information, and course projects, reports, research articles and so on. Different texts have the essential function of integrating the multiple systems of meanings (Mickan, 2013). Therefore, developing an understanding of the social practices of one's discipline, awareness of the functions of texts and how these functions are conventionally accomplished are essential to writing in an academic genre by routinely connecting purposes with features of texts (Hyland, 2004).

Academic writing is also an indispensable part of medical studies since medicine is rapidly developing, and new discoveries or findings need to be shared through medical writing which helps communicate effectively and delivers well-structured information to the members of the community**.** As medical sciences have become more widespread since the 17th century, well-designed medical academic genres need to complement research findings, avoid the repetition of the experiments without any valuable results, and control new diseases (Piqué-Angordans & Posteguillo, 2006). Medical written texts can form different genres such as research articles, abstracts, case reports, review articles, peer reviews, replies to reviews, and medical popularizations.

Medical CRs, as an important starting point for academic writing, produce interesting and educational information for the field of medicine by introducing a new disease, a new way of treatment, or an unexpected relationship between relatively uncommon diseases or symptoms; and its publication helps share knowledge and convey medical experience (Roberts, 2013). It is "a rare or unusual clinical condition, a previously unreported or unrecognized disease, unusual side effects to therapy or response to treatment, and unique use of imaging modalities or diagnostic tests to assist diagnosis of a disease" (Sun, 2013. p. 108).

As CRs are important scientific observations, they provide essential sources of information for the optimum care; therefore, several scientists have explained CRs and their organizational structures to help writers deliver their observed information in a manner that is valid and acceptable by the community. In CRs, each section explains the way that information should be presented and what should be included in each part (Cohen, 2006; Garg et al., 2016; Gopikrishna, 2010; McCarthy & Reilly, 2000; Rison, 2013; Sun, 2013). CRs are mostly short and concise and they do not follow the usual IMRD (introduction, methods, results, and discussion) format of original articles. They encompass five main sections including an abstract, an introduction, a presentation of the case, a discussion, and a conclusion as well as supplementary parts such as figures, tables, illustrations and graphs (McCarthy & Reilly, 2000; Rison, 2013).

There are certain features of medical CRs which make them distinct from other forms of medical articles. Unlike medical research papers, CRs are shorter and they describe a single case of a patient's disease or new treatment; therefore, "the comprehensibility of the genre tends to be relatively higher than the comprehensibility of medical research articles, enabling the non-specialist readers to understand and discuss it, or even contribute to its writing" (Helan, 2012, p. 58). Also, clinical and non-clinical information about patients such as their histories of disease, comorbidities and the physician's reasoning or new ways of treatment or diagnosis are commonly presented in details which are sometimes disregarded in medical research articles (Helan, 2012). Therefore, medical CRs provide an excellent opportunity for novice members of the medical discourse community to publish reports of rare, unusual or important cases from their medical practice (Gopikrishna, 2010). Informed by the need to help novice medical students develop an awareness of the rhetorical features of a case report, a genre analysis enables apprentices to see the organizational structure and communicative purposes of moves in medical CRs.

The Swalesian model of genre analysis describes the communicative purposes of a text, as recognized by inner circle members, in terms of *moves* and *steps* (Swales, 1990, 2004). Moves are "discoursal or rhetorical units performing coherent communicative functions in texts" (Swales, 2004, 228–229) and are realized by the presence of one or more specific functional coding units or *steps* (Moreno & Swales, 2018). Accordingly, a move is used to identify the textual regularities in texts and might vary in length ranging from several paragraphs to at least one proposition (Ding, 2007).

Following the Swealsian model of text analysis, there has seen increasing attention given by scholars to the notion of genre and its application in language teaching and learning during last decades (Martin, 2009; Tardy, 2006). Different types of genres in academic written English, namely, textbooks, different sections of research articles and papers (especially their introductions), abstracts, theses and dissertations and their titles have been analyzed in various fields

of study. Much research has been done on the organizational patterns of RAs; on the RA introduction section (e.g. Swales, 1990; Swales & Najjar, 1987), the results section (e.g. Brett, 1994, in sociology RAs), the discussion section (e.g. Holmes, 1997 in sociology, political science and history RAs; Hopkins & Dudley Evans, 1988, in articles and dissertations; Peacock, 2002, across seven disciplines), all the four RA sections (e.g. Kanoksilapatham, 2005, in biochemistry), academic spoken discourse (Thompson, 1994, in discipline areas of applied linguistics, engineering, and medicine), and on titles of review papers and research papers (Soler, 2007, in selected disciplines of social sciences and biological sciences).

Compared to the number of CRs published in scholarly journals and the interested parties that these reports address, very few, if any, studies have analyzed the organizational structure of CRs to investigate the generic features used in this genre of academic writing (e.g., Helan, 2012; Sayfouri, 2010). A genre-based approach to writing tends to create in students and novice researchers an awareness of the rhetorical and linguistic features that constitute a text (Swales, 1990). Thus, the current study, in the first place, explored the generic structure and communicative purposes used in standard medical CRs. In the next stage of the study, the students' revised CRs were compared with the published reports to evaluate the extent of their similarity or difference.

3. Methodology

This study relies on two datasets collected either from selected scholarly journals or from the participants of the study.

3.1 Journal Case Reports

The first dataset encompasses sample CRs taken from the latest issues of prestigious journals in medicine. To choose the journals, a list of major clinical journals were searched online in Scientific Writing in Health and Medicine (SWIHM), which supports systematic data collection in healthcare, and OMICS International, which is an open access publisher and leading scientific event organizer and claims an important position in the global scientific research scenario. Eventually, three journals which covered different fields of medical studies were selected: *Journal of Medical Case Reports* (JMCR, the world's 1st international PubMed-listed journal), *American Journal of Case Reports* (AJCR) and *BMJ Case Reports* (only successful for educational value). The Scientific Journal Ranking (SJR) of each journal within the time span of CRs retrieval from 2016 to 2018 is presented in Table 1. Further scrutiny into the existing literature revealed that these journals have been the object of investigation in other studies (Nwogu, 1997; Rison, 2013; Rison, Shepphird, & Kidd, 2017). These peer-reviewed and open-access journals are indexed in MEDLINE (Index Medicus), PubMed Central, Scopus, Embase (ExcerptaMedica), DOAJ, and Google Scholar. There were about 20 to 30 titles in each monthly issue of the first two journals.

Table 1. Journals impact factors from 2016 to 2018

Journals	SJR		
	2016	2017	2018
Journal of Medical Case Reports	0.264	0.331	0.262
American Journal of Case Reports	0.289	0.295	0.271
BMJ Case Reports	0.189	0.213	0.217

Although *BMJ Case Reports* offered about 100 titles in each issue, only some published CRs were free and accessible (about 15 in each issue). The initial consideration revealed that the *BMJ Case Reports* were marked with distinct organizational structures from the other two journals and the reports only included the "Description" section with learning points for healthcare professionals. The whole report in the "Description" section followed only the moves in the "Case report/Case Presentation" section in the framework which is presented in Table3. Due to its different organizational structure, this journal was excluded from the study.

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In the next stage, all titles of the CRs published between 2016 and 2018 were extracted from the archival volumes of *JMCR* (1,127 reports) and *AJCR* (792 reports). The rationale for selecting these reports was accessibility, diversity of the topics which covered up various medical fields, and authors with publications indexed in Scopus (the world's largest citation database of peer-reviewed research literature). Considering these criteria, 100 reports were systematically selected by including the titles which covered diverse subject matters and different fields of medical studies. Since the structures of both journals were similar, those reports which mostly met the criteria were included in the study. This paper reports only a part of a large study with 100 CRs being scrutinized as the representative of the larger sample. CRs are generally shorter in length compared to original articles; and the length of these selected CRs varied from 871 to 2642 words (excluding authors' information, graphs, tables and references, conflict of interest and acknowledgments) with the average length of 1854 words. Finally, 100 reports (50 from *JMCR* and 50 from *AJCR*) were selected and the size of this corpus in word count peaked 185400 words (Table 2).

Table 2. Descriptive information about case reports

Database	Word Count			
	Shortest Report	Longest Report	Average Length	Corpus Size
100 CRs	871	2642	1854	185400

The second stage contained the analysis of the standard CRs. To minimize the risk of arbitrariness, two coders (one of the present researchers and another researcher experienced in text analysis) independently examined the quality of 30 CRs in terms of the moves and steps that configure each report. To determine the coder reliability, Cronbach's alpha was used to compare the frequency of moves and steps in each report scored by the coders. The results indicated a close correspondence of analysis i.e., a correlation of 0.92. Agreement was made on the method of analysis to ensure the dependability of the analysis and confusing functions were discussed and agreed on their analysis. In order to ensure the intra-rater reliability of the analyses the data was also analyzed for the second time by the main researcher after a month interval and Cronbach's alpha was calculated. The obtained correlation was 0.94, indicating a strong relationship between the two times of analysis.

Following Swales (1990), where a particular move occurred repeatedly with a frequency of more than 67%, it was labeled as obligatory. Moves observed less frequently, between 66% and 33%, were considered as conventional, and moves which occurred sporadically (less than 33%) were assigned into the optional category. Based on the analyses, the following framework was developed to identify the moves in CRs.

Table 3. Moves and steps in a case report

1. Abstract

- Move 1: Background

  S1: Background information about disease/ treatment

  S2: Features and symptoms

  S3: Gap in the literature

  S4: Introducing the current study

- Move 2: Case report

  S1: Patient's general information or introducing a new method of treatment

  S2: Current disease symptoms

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S3: Diagnostic tests

S4: Medications

S5: Final diagnosis

S6: treatment or suitable way of diagnosis

- Move 3: Conclusion

S1: Summary or definition of the case

S2: Findings

S3: Implications and importance of your study

2. Introduction/Background

- Move 1: Definition or background information (symptoms of the disease/treatment)
- Move 2: Review of literature
- Move 3: Gap in the literature
- Move 4: Diagnosis/the use of medications
- Move 5:Current treatment
- Move 6: Introducing the current case

3. Case Report/Case Presentation

- Move 1: Patient's general information and current physical problems
- Move 2: History of disease, medication used, or conditions leading to current situation
- Move 3: Vital symptoms (if required) and general health status
- Move 4: Examining current symptoms or using new treatments
- Move 5: Results of diagnostic tests
- Move 6: Symptoms (if required) and treatment during hospitalization
- Move 7: Ways of diagnosis
- Move 8: Procedures of treatment
- Move 9: Monitoring and observing the treatment
- Move 10: Follow up

4. Discussion

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- Move 1: Introducing the disease or treatment and evaluating its symptoms (How they are manifested and how these symptoms are related to a specific disease)
- Move 2: Challenges during the process of diagnosing the disease
- Move 3: Medication or treatment review
- Move 4: Discussing the manifested symptoms or treatment
- Move 5: Discussing the test results or ways of diagnosis
- Move 6: Restating the gap in the literature
- Move 7: Stating previous studies to compare with one's own study
- Move 8: Justifying one's study
- Move 9: Findings and implications (What the application of the study is and how it helps the medical community)

5. Conclusion

- Move 1: Summary of the case or characteristics of the disease
- Move 2: Stating the findings of your study
- Move 3: Implications, suggesting ways of treatment or diagnosis

For further validation of the framework, a subset of ten CRs from the same journals was selected and analyzed independently by another coder who specialized in applied linguistics to identify the functions of each sentence or paragraph in different parts of CRs. Then the moves or functions were compared to those presented in the framework above to see whether and to what extent we agreed on the method of analysis. The coder identified almost the same functions as those which were previously found by the main researcher. We discussed the differences in labelling various parts and could, finally, reach a decision on the labels.

In the identification process, sometimes a particular move was repeated in distinctive paragraphs of a section. No matter how often a move was repeated, it was considered to be either present or absent and the number of repeated moves was not counted in the analysis. This framework was then adopted to analyze other sections of 70 other CRs in order to evaluate the predictive power of the framework. The following excerpt from a standard case report entitled "Recurrent biliary dissemination of colon cancer liver metastasis: a case report" is presented to show how an introduction section was analyzed using the framework. The moves were exemplified below:

Move 1: Definition or background information about the disease

> *Most colorectal cancer (CRC) liver metastases form nodules within the hepatic parenchyma, and hepatectomy is the only radical treatment for synchronous metastases (Adam et al., 2015). Thus, a suitable cutting line is crucial during surgical resection to confirm the tumor clearance. When detected around the nodule, either macroscopically or microscopically (Okano et al., 1999; Kubo et al., 2002), intrabiliary tumor growth can affect the surgical margin, resulting in local recurrence after hepatectomy (Povoski et al, 2000; Toki et al. 2006).*

Move 3: Gap in the literature

> *However, to date, only a few cases have been reported primarily comprising development in the bile duct (Kubo, et al., 2002; Kawakatsu et al., 2015); of these, many are case reports, and some are a limited*

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number of case series. Moreover, there has been no report of recurrence in the bile duct inoculation after hepatectomy; the actual mechanism of biliary dissemination of CRC is still unknown.

Move 6: Introducing the current case

Here we report a rare case of biliary dissemination of CRC which caused recurrent intrabiliary growth after hepatectomy and discuss the management of intrabiliary metastasis of CRC.

3.2 Students' Reports

The second dataset included 32 CRs written by medical students who were invited to participate in the study during their clinical courses in 2019. Students at KUMS were invited to report a case, in English, they recently observed. The reports were part of the recent observations that the students had made in hospitals. Since the participants attended the clinical courses in the hospital at the same time, it was expected that some of them could not attend the course regularly due to their schedule; therefore, we recruited as many participants as we could. At the beginning, 68 students volunteered to report a case but slightly over half of the participants were eliminated from the study due to their irregular attendance or incomplete or repeated reports at the end of the course. Finally, 32 students, who attended almost all instructional sessions and wrote and revised their CRs, remained in the study.

First, the participants were asked to report a case they observed in clinical wards and to hand in their 1st report in three weeks. Then, they were invited to register in a workshop. In the workshop, the generic organizations of CRs were explicitly addressed by the main researcher of this study. That is, the participants were introduced the above framework about the overall organization of published CRs via tasks which were designed by the researchers of this study. These tasks were used to raise the participants 'awareness with regard to the generic structures of CRs. The tasks included different sections of CRs which required the participant to identify and outline the function of each sentence or paragraph. The participants were asked to read the passages from the standard CRs individually, and then they worked in pairs to identify the communicative purposes and functions of each sentence. In the meantime, they received explicit instruction about the rhetorical and linguistic features of the CRs and the different functions served through various parts. Instruction lasted a whole semester (sixteen 90-minutes sessions).

At the end of the course, the participants were asked to revise their initial reports based on the instruction that they had received. These revised reports were considered to be the outcome of the instruction that they took during one whole semester. Finally, the participants' revised reports were compared against the published reports in order to fathom the proximity of their reports to the published reports in terms of micro and macro features.

4. Results and Discussion

In order to answer the research questions, the data from the standard CRs and the participants' reports underwent qualitative and quantitative analyses. Due to the functional nature of the present study, the results and discussion of the generic organization of standard CRs are first presented and then the participants' revised reports are compared with the standard CRs.

4.1 Generic Organizations of CRs

The analysis of the different sections of the CRs led to the identification of the moves and steps characterizing each section. The moves were then labeled as obligatory, conventional, and optional following Swales (1990).

4.1.1 Abstracts in Standard and Students' CRs

This section summarizes the report in a structured manner including section headings such as Background, Case Presentation, and Conclusion. As depicted in Table 4, Background (Move 1), Case Report (in AJCR) /Case Presentation (in JMCR) (Move 2), and Conclusion (Move 3) were present in all repots (100%) due to the policy of the journals on the organizational structure of published reports. However, variations were observed in the steps.

In Move 1, Step 1 (Disease or Treatment) outlines background knowledge of a disease or a way of treatment, which was the most frequent step (98%) followed by Step 2 (Features and/or symptoms) which was present in 78% of the reports. Based on their frequencies, Steps 1 and 2 are regarded as obligatory. However, Step 3 (Gap in the literature) and Step 4 (Introducing the current study) were less frequent; therefore, they were considered as conventional steps in Move 1 of the Abstract section.

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As shown in Table 4, six steps characterize Move 2 of the abstract of Case Reports. Step 1 (Patient's general information or introducing a new method of treatment) and Step 2 (Current disease symptoms) are regarded as obligatory while Step 3 (Diagnostic tests), Step 4 (Medications), Step 5 (Final diagnosis), and Step 6 (treatment or suitable way of diagnosis) are conventional depending on the presented case, whether the case is about a disease or treatment. Finally, three steps were identified in Conclusion (Move 3), one optional (Step 1: Summary or definition of the case) and two obligatory (S2: Findings and S3: Implications and importance of your study) as presented below.

Table 4. Frequency and percentage of moves and steps in CRs abstracts

Abstract					
Moves and Labels	Standard (100 CRs)	Students' (32 CRs)	Steps and Label	Standard (100 CRs)	Students' (32 CRs)
Introduction(Move 1): **Obligatory**	**100** (100%)	**18** (56%)	Background information about disease/treatment (Step1): **Obligatory**	98 (98%)	17 (53%)
			Features and symptoms (Step2): **Obligatory**	78 (78%)	12 (37.5%)
			Gap in the literature (Step3): **Conventional**	63 (63%)	11 (34%)
			Introducing the current study (Step4): **Conventional**	61 (61%)	11 (34%)
Case Report (Move 2): **Obligatory**	**100** (100%)	**15** (47%)	Patient's general information or introducing a new method of treatment (Step1): **Obligatory**	100 (100%)	6 (19%)
			Current disease symptoms (Step2): **Obligatory**	97 (97%)	5 (16%)
			Diagnostic tests (Step3):**Conventional**	48 (48%)	4 (12.5%)
			Medications (Step4):**Conventional**	62 (62%)	4 (12.5%)
			Final diagnosis (Step5):**Conventional**	50 (50%)	9 (28%)
			Treatment or suitable ways of	62 (62%)	6 (19%)

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			diagnosis (Step6):**Conventional**		
Conclusion (Move 3): **Obligatory**	**100** (100%)	**10** (31%)	Summary or definition of the case (Step 1):**Optional**	25 (25%)	6 (19%)
			Findings (Step2):**Obligatory**	74 (74%)	7(22%)
			Implications and importance of your study (Step3):**Obligatory**	91 (91%)	17 (53%)

Note the following example from the Abstract section of a standard CR:

M1: Introduction

S1: *Benign multicystic peritoneal mesothelioma (BMPM) is a rare intra-abdominal tumor .*
S2: *Although considered by many to be benign, this tumor has a high local recurrence rate. Because of its rarity, preoperative diagnosis is difficult and its origin and pathogenesis are uncertain.*
S3: *There are no evidence-based treatment strategies for BMPM.*

M2: Case Report

S1: *A 65-year-old male with end-stage renal disease on hemodialysis for seven years*

S2: *presented with BMPM .*

S4: *He underwent surgery to remove multiple peritoneal cysts, but four months later he experienced a recurrence of the disease.*
S3: *Immunohistochemistry of the cysts demonstrated a high level of phosphorylation of p70S6 kinase, a downstream mTOR target,*

S4: *and since a target therapy that blocks PI3K/Akt/mTOR pathway has been shown to have a scientific and logical rationale to treat this rare intra-abdominal neoplasia ,*
S6: *we started the patient on low dose rapamycin therapy, an mTOR inhibitor. Long-term mTOR inhibition resulted in a complete and stable remission of BMPM.*

Move 3: Conclusions

S2: *The current case is the first report of BMPML successfully treated with rapamycin,*
S3: *which resulted in a long-lasting response to mTOR inhibition.*

It is noteworthy to state that all moves in abstracts follow a fixed sequence while variations can be noticed in the number and the sequence of the Steps, as some steps are conventional and some are recurring (e.g. S4 in the example above) which can be due to undertaking various medical procedures. However, more than half of the participants (56%) included this section in their revised reports. Their abstract sections were short and mostly lacked obligatory and conventional moves in the Case Report and Conclusion sections. Move 1 and Move 3 were the most and least frequent moves, respectively. Step 1 (Background Information) in Move 1 and Step 3 (Implications) in Move 3 were the most frequent steps in the students' Abstracts while conventional Steps 3 (Diagnostic Tests) and 4 (Medications) in Move 2 were the least frequent steps (Table 4). A sample of a student's report showed that the report lacked two conventional steps in Move 1, three conventional steps in Move 2, and one optional step in Move 3, as illustrated below:

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Student's Report:

M1: Introduction

S1: *Serotonin syndrome is a common yet potentially life-threatening condition caused*

S2: *by increased serotogenic [serotonergic] activity, usually from pharmaceutical agents.*

Case Report:

S1: *A 50 year-old female with chronic kidney disease on peritoneal dialysis*

S2: *presented to the Emergency Department with severe diffuse body pain.*

S3: *Laboratory studies remarkable for elevated liver transaminases.*

M3: Conclusion

S2: *Our patient's initial presentation of diffuse body pain highlights the variable presentation of serotonin syndrome.*

S3*: Our case also demonstrates the importance of recognizing serotonin syndrome, as the supportive ondansetron we gave to alleviate her nausea and vomiting likely exacerbated her serotonin syndrome.*

4.1.2 Introduction in Standard and Students' CRs

An introduction provides background information to describe a disease (its symptoms, morbidity, and mortality) and explains the purpose of reporting a case. It is usually brief consisting of one or two paragraphs with 100-150 words in each (Juyal, Thaledi, & Thawani, 2013). Based on the analysis (Table 5), different moves were identified among which Move 1 (Definition or background information), Move 3 (Gap in the literature), and Move 6 (Introducing the current study) are labeled as obligatory based on their frequencies. These obligatory moves in CRs agree with both Swales's (1990 & 2004) CARS model for research article introduction and Helan's (2012) analysis of published Medical CRs.

Table 5. Frequency and percentage of moves in CRs introductions

	Introduction	
Moves and Labels	Standard (100CRs)	Students' (32CRs)
Move1: Definition or background information: **Obligatory**	100 (100%)	30 (93%)
Move 2: Review of literature: **Optional**	17 (17%)	13 (41%)
Move3: Gap in the literature: **Obligatory**	69 (69%)	22 (69%)
Move 4: Diagnosis/the use of medications: **Conventional**	38(38%)	14 (44%)
Move 5: Current treatment: **Conventional**	45 (45%)	7 (22%)
Move 6: Introducing the current case: **Obligatory**	83 (83%)	11 (34%)

Move 1 provides background information by defining and describing a disease and relevant pathological conditions or procedures of treatment (e.g., *Notalgiaparesthetica (NP) is a term that describes a chronic neuropathic itch in the posterior thoracic region. It is unilateral, frequently appears at shoulder blade level and is thought to be secondary to damage of the posterior primary rami of the thoracic nerves T2–T6 (Massey & Pleet, 1979)*).

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Move 3 indicates a gap in medical and clinical knowledge by invoking its uniqueness or the absence of its manifestation or treatment in previous research (e.g., *The exact incidence of NP is unknown as it remains largely underreported*).

Move 6 enables authors to introduce the reported case and announce the report including disease, treatment, diagnosis (e.g., *In this article, we present a case of NP that was successfully treated with intravenous lidocaine infusions, a modality frequently used in neuropathic pain conditions but not previously described for pruritic nerve entrapment syndromes*).

Nwogu (1997, p.135) also proposed three obligatory moves in the Model for Medical Research Article Introduction**:** *Presenting Background Information* (Move 1), *Reviewing Related Research* (Move2), and *Presenting New Research* (Move 3). Likewise Moves 1 and 3 were obligatory in this study; however, Move 2 in the introduction of CRs was considered optional due to its low frequency. Besides, Move 4 (Diagnosis/Use of medication) and Move 5 (Current treatment) were observed in 38 and 45 percentages of CRs, respectively. These conventional moves might be used by authors if their employment is required due to the nature of reported cases. By using these moves, authors may be able to build a firmer foundation for their study and convince the expert audience of the significance of the study as indicated by the following examples:

> **Move 4:** *Skin biopsy can reveal nonspecific post-inflammatory hyperpigmentation (Savk et al., 2005).*
>
> **Move 5:** *Treatments previously described for notalgiaparesthetica include topical agents such as lidocaine (Layton & Cotterill, 1991) and capsaicin (Wallengren & Klinker, 1995). Unfortunately, their effect is temporary and requires multiple applications per day which can be difficult for the patient to reach when targeting the interscapular area*.

The participants' reports were similar to the Standard CRs since obligatory Move 1 (Background Information, 93%) was the most frequent move followed by Move 3 (The Gap in the literature, 69%). However, obligatory Move 6 in the standard CRs (Introducing the current case, 34%) was the least frequent move in the students' reports. The participants also made more use of optional Move 2 (Review of literature, 41%) compared to the standard CRs. This might indicate that the students as novice writers felt the need to provide more theoretical background in order to justify their own study and introduce the issue investigated. By contrast, expert writers may assume a certain amount of background knowledge by the medical community; therefore, they do not resort to this move to justify their research and show its validity.

One of the students employed three moves (2 obligatory and 1 conventional) to write an Introduction by providing the background knowledge, diagnosis and the gap in the literature as follows:

> ***M1:*** *Serotonin Syndrome (or serotonin toxicity) is a group of symptoms that result from increased serotonergic activity. Serotonin syndrome is classically caused by selective serotonin reuptake inhibitors (SSRIs) but other pharmaceutical agents have also been associated. Even though serotonin is a common disease, its' reliable estimates of prevalence is challenging due to its variable presentation. A study revealed that 14-16% of cases of overdose of SSRIs develop symptoms of serotonin syndrome [Isbister, Bowe, & Dawson, 2004]. Serotonin syndrome is the result of increased serotonin in the central nervous system (CNS) and peripheral nervous system [Isbisteret et al., 2004].*
>
> ***M4:*** *The classical triad of serotonin syndrome composed if [of] mental changes, autonomic hyperactivity and neuromuscular abnormalities is used to diagnose this disease.*
>
> ***M3:*** *However the clinical presentation of serotonin syndrome is quite variable and non-specific [Frank, 2008], often making the diagnosis quite challenging.*

In standard CRs, the Introduction proceeds from general information about the disease and ends in presenting a current case. In the student's report, the background information with reference to relevant studies, and the procedure of diagnosis are presented to set the scene for readers followed by indicating a gap to establish a niche. Yet the student failed to incorporate Move 6 to present the current work. Overall, it seems that the student's awareness of the generic structure improved since it followed a logical pattern of moves which is conventional in CRs' introduction, since an introduction proceeds from general to more specific information (Swales, 2004) in order to provide a space for case presentation by identifying specific areas of research which need further investigation.

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- 4.1.3 Case Report in Standard and Students' CRs

This section describes the patient, presentation, outcome measures, assessment protocols and treatment (Green & Johnson, 2006). It presents the problem followed by the procedure of treatment or solution. It seems that most moves are obligatory since patient's admission, examination and management follow a specific process in hospitals and its report would follow the same steps and procedures.

The Case Report sections of standard reports were scrutinized to calculate the frequency of occurrence of each identified move within this section (Table 6). Most of the moves in this section were obligatory except moves 3, 6 and 10 which were assigned into conventional categories.

Table 6. Frequency and percentage of moves in case reports

Moves	Standard (100 CRs)	Students' (31 CRs)
Move 1: Patient's general information and current physical problem: **Obligatory**	100 (100%)	31 (97%)
Move 2: History of disease, medication used, or conditions leading to current situation: **Obligatory**	99 (99%)	30 (94%)
Move3: Vital symptoms (if required) and general health status: **Conventional**	45 (45%)	22 (69%)
Move 4: Examining current symptoms or using new treatment: **Obligatory**	100 (100%)	25 (78%)
Move 5: Results of diagnostic tests: **Obligatory**	90 (90%)	27 (84%)
Move 6: Symptoms (if required) and treatment during hospitalization: **Conventional**	45 (45%)	24 (75%)
Move 7: Ways of diagnosis: **Obligatory**	95 (95%)	18 (56%)
Move 8: Procedures of treatment: **Obligatory**	97 (97%)	29 (91%)
Move 9: Monitoring and observing the treatment: **Obligatory**	100 (100%)	23 (72%)
Move 10: Follow up: **Conventional**	65 (65%)	12 (37.5%)

Every Case report starts with patients' demographic data and their health problem (Move 1) followed by the history of their problem (Move 2). Note the following example:

> ***Move1:*** *A 67-year-old Asian woman was brought to our emergency room (ER) with complaints of intentional ingestion...*
>
> ***Move2:*** *with a known long history of major depressive disorder.*
>
> On admission, vital symptoms (Move 3) are reported in some cases as a conventional move if required as in:
>
> ***Move 3:*** *On examination the patient was febrile with temperature38.2°C, pulse 108, respiratory rate 20, and blood pressure115/75.*

To investigate the health problem, a patient is examined (Move 4) and the results of a diagnostic test (Move 5) and ways of diagnosis (Move 7) are presented to report the diagnosis procedures step by step. Note the following examples:

> ***Move 4:*** *He had left periorbital swelling and redness with intactvisual acuity and normal extraocular muscle movement, and some discharge was seen from the nose*.

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Move 5: *Complete blood counts (CBC) and kidney functiontest results were normal. Liver function test was normal except for a high level of lactate dehydrogenase (LDH), which was about 2100 Units/Liter (normal level 240–480 Units/Liter).*

Moves 7 & 5: *The computed tomography (CT) scan showed total opacificationof the left maxillary sinus and left ethmoidal sinus, with left periorbital soft tissue swelling.*

Sometime, some patients manifest several symptoms during hospitalization (Move 6), introducing themselves as important cases to be reported, for example:

Move 6: *On the second hospital day, she had erythemaannulare at the inner parts of both lower thighs, an edematouserythema on her back, and a granular-sized infiltrativeerythema on the right knee.*

When the diagnosis is established following clinical evaluation, the treatment procedure (Move 8) reports undertaken actions such as clinical, pharmaceutical or surgical interventions as in the following example:

Move 8: *We started treatment with the recommended dose of prednisolone of 30 mg/day (0.85 mg/kg/day) because her condition had deteriorated on the second hospitalday.*

Then, patients and their procedure of treatment are monitored to evaluate the success or failure of the procedure in Move 9, as in:

Move 9: *After completing radiotherapy (total 50 Gy) for approximately 1 month, we observed an improvement in his liver function because of tumor shrinkage. Unfortunately, the effects were short-lived, intrabiliary growth and cholangitis rebooted after 1 month leading to his death due to septic liver failure.*

Due to the nature of the treatment procedure, some patients may require follow-up (Move 10) to pursue the treatment and this move can be reported as follows:

Move 10*: She stayed in wards for 4 more days and was then finally discharged to home to have follow-up later and scheduled psychiatric consultation and adjustment of medications accordingly.*

These moves are required to construct a Case Report section; however, they may not follow the same order, or sometimes various moves especially moves 5, 7, 8 and 9 may appear in recurring patterns and they may not follow a fixed sequence in the procedure of investigating and solving the health problem. The obligatory moves found in this study are in line with Helan's (2012, p.119) framework in which the identified moves are integrated into the four general moves proposed as below:

- Move 4: *Presenting a Problem* (Moves 1 and 2 in this study)
- Move 5: *Investing the Problem* (Moves 4,5, & 7 in this study)
- Move 6: *Addressing the problem* (Move 8 in this study)
- Move 7: *Evaluating the Outcome* (Moves 9 & 10)

In the students' reports, Moves 1 (Patient's general information) was the most frequent move followed by Move 2 (History of disease). On the other hand, Move 10 (Follow up) was the least frequent move in the students' reports; however, Move 6 (Symptoms during hospitalization) was the least frequent move in the Standard CRs. This difference can be due to the limited number of the students' reports compared to various cases in the standard CRs. Yet, majority of the students relied on the obligatory and conventional moves in their reports. Note the following Case Report sections in a student's report:

Student's Report:

M1: *A 50 year old female*

M2: *with class 5 chronic kidney as the history, type II diabetes mellitus, Peripheral neuropathy, gastro esophageal reflux disease, hypertension and unspecified chronic pain*

M1: *presented to the Emergency department with 1-day history of worsened nausea and severe diffuse body pain.*

M3: *Her vital signs revealed that she was afebrile and with blood pressure of 148/82 mmHg, heart rate of 109 beats per minutes and respiratory rate of 18 breaths per minutes.*

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M4: *Her cardiac and pulmonary examinations were unremarkable. Her liver and spleen size could not be determined as the patient was unable to tolerate examination. No ascites or edema was noted.*

M5: *She had a normocytic, normochromic anemia which was unchanged from her baseline, but her white blood cell count and differential was within normal limits. Liver enzymes were notable for increased asparate aminotransferase (AST), alanine aminotransferase (ALT) and alkaline phosphatase, but her bilirubin was witin [within] normal limits. Hepatic A, B, and C were all negative.*

M7: *On further review, it was noted that she had been taking multiple pharmaceutical agents with serotonergic properties*

M6: *Over the first 3 days of her hospitalization, her pain worsened. In addition, she developed worsening nausea, severe retching, non-bloody diarrhea and recurrent non-bloody, non-bilious vomiting.*

M8: *During her hospital stay, she was given a total of 16 mg in doses of 4 mg of ondasteron [ondansetron] for symptomatic treatment of her nausea and vomiting which was switched to promethazine when ondanstron [ondansetron] was ineffective and received on 25 mg dose of intravenous promethazine.*

M9: *Following our diagnosis of serotonin syndrome, we discountinued [discontinued] all her serotonergic medication, including duloxetine, tramadol and ondanstron [ondansetron] with resluation [resolution] of her symptoms.*

M10: *She was instructed to follow up with her primary care provider to consider restarting her duloxetine for her underlying chronic pain under close monitoring.*

In his report, the student incorporated all the moves to report the performed medical procedure step by step, implying his awareness of the generic structure. According to Swales (1990, p. 213) "there may be pedagogical value in sensitizing the students to rhetorical effects and to the rhetorical structures that tend to recur in genre-specific texts."

4.1.4 Discussion in standard CRs and students' report

This section explains the case, justifies authors' opinions and evaluates the case for accuracy, validity and uniqueness (Cohen, 2006), contextualizes the case by referring to previous studies, and highlights the salient features of presented cases. Generally, authors begin by providing a summary of the case and rationale for reporting it, followed by comparison with similar cases reported earlier (Bavdekar & Save, 2015). The organization structure of Discussion was investigated and nine moves were identified. They were then classified based on their frequencies (seven obligatory and two optional moves) in Table 7.

Table 7. Frequency and percentage of moves in CRs discussions

Moves	Standard (100 CRs)	Students' (31 CRs)
Move 1: Introducing the disease or treatment and evaluating its symptoms: **Obligatory**	100 (100%)	25 (78%)
Move 2: Challenges during the process of diagnosing the disease: **Optional**	32 (32%)	13 (41%)
Move 3: Medication or treatment review: **Optional**	25 (25%)	16 (50%)
Move 4: Discussing the manifested symptoms or treatment: **Obligatory**	100 (100%)	27 (84%)
Move 5: Discussing the test results or ways of diagnosis: **Obligatory**	84 (84%)	16 (50%)
Move 6: Restating the gap in the literature: **Obligatory**	95(95%)	12 (37.5%)
Move 7: Stating previous studies to compare with one's own study: **Obligatory**	100 (100%)	15 (47%)
Move 8: Justifying one's study: **Obligatory**	100 (100%)	15 (47%)

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Move 9: Findings and implications: **Obligatory**	100 (100%)	23 (72%)

A Discussion section mainly starts with the description or background information of the disease or treatment and evaluation of symptoms.

> ***Move 1:*** *Extranodal NKTCL nasal type is an NK cell-derived neoplasm [Gill, Liang, & Tse, 2010]. It usually affects the aerodigestive tract (e.g., nose, oropharynx, and larynx), but skin, gastrointestinal, and testis involvement can occur [Wood, Parikh, & Krause, 2011]. It is characterized by an angiocentric and angiodestructive pattern of growth with ulceration and necrosis [Gill, Liang, & Tse, 2010], Superinfection can occur over these necrotic tissues, which can be misdiagnosed as an infectious process [Wood, Parikh, & Krause, 2011].*

In Move 2, diagnosis or treatment, doctors or medical community may face some challenges which are worth sharing with the community in order to make them aware of the potential risks for patients and to suggest implications or recommendations:

> ***Move2:*** *It was difficult to diagnose AOSD in this patient because of the lack of typical symptoms and signs and due to her exceptional old age. Infection, malignancy, and connective tissue disease should be excluded to accurately diagnose AOSD.*

In some cases, it can be helpful to overview the medication or treatment procedure (Move 3) in order to provide a space to discuss the treatment which can be justified later in Move 8 of a Discussion. This optional move can be reported as follows:

> ***Move3:*** *Following multiple antibiotic cycles, the patient underwent surgical therapy with wide bone resection and debridement of the cutaneous area. The preservation of the facial cortical plate prevented mandibular fracture and after 16-months of clinical and radiological follow-up, the patient completely healed without recurrence (Figure 4A–4C).*

Then, the symptoms and treatment procedures (Move 4), pathological conditions, complications or treatment are discussed by **citing** important clinical studies to help in presenting information pertinent to the reported case and to convince the medical community about the validity of a presented case, as in the following example:

> ***Move 4:*** *In general, NKTCL presents with nonspecific symptoms. Weight loss, fever, night sweats, and anemia are usually only encountered in late stages [Radochova et al., 2014]. Clinically, it can be divided into nasal and extranasal types [Gill, Liang & Tse, 2010]; the nasal variety commonly presents with nasal obstruction, […] and, occasionally, the hard palate [Gill, Liang, & Tse, 2010; Wood, Parikh, & Krause, 2011; Kuo, Shih, &Tsang, 2004].*
>
> Likewise, diagnostic evaluations and results (Move 5) are discussed by adhering to required diagnostic procedures in previous studies in order to justify their employment and to explain why these procedures can be useful in a presented case.
>
> ***Move 5:*** *Imaging can be useful in these tumors, and CT and magnetic resonance imaging (MRI) can demonstrate the extent of the disease; however, FLourine-18 fluorodeoxyglucose positron emission tomography computerized tomography (18-FDG PET-CT) has better sensitivity [Radochova et al., 2014; Gill, Liang & Tse, 2010]. Quantification of Plasma […], and can be used as a marker for tumor load [Wood, Parikh & Krause, 2011; Tse & Kwong, 2011]; a high titer indicates extensive disease, […] [Wood, Parikh & Krause, 2011]. Serial EBV DNA can be used to monitor the response to treatment [Tse & Kwong, 2011]. Many patients with NKTCL are hepatitis B carriers, and antiviral prophylaxis should be given during chemotherapy [Tse & Kwong, 2011].*

The gap in the literature (Move 6) can be restated to highlight the importance of findings of a case report and to express an author's point of view regarding the current case followed by a brief review of literature (Move 7) to support the claim made with reference to the published research.

> ***Move 6:*** *Very few cases with periorbital cellulitis as the initial presentation of NKTCL have been reported in the literature, as we report in our case [Termote et al., 2014; Kim & An, 2014; Charton et al., 2008].*

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> ***Move7:*** *Termote et al. described 3 similar cases, […] [Termote et al., 2014]. The other similar presentation was described by Kim JW et al. and was treated as sinusitis, […] [Kim & An, 2014]. Three cases with periorbital involvement were reported by Charton et al; […] [Charton et al., 2008. […]Muscles and adrenal glands are rarely involved [Gill, Liang & Tse, 2010]. The extranasal type usually disseminates early in the course of the disease [Gill, Liang & Tse, 2010; Wood, Parikh & Krause, 2011], but most were found to have occult nasal primaries [Tse & Kwong, 2011].*

After discussing the pertinent symptoms, treatment and diagnosis, it seems that authors tend to draw upon relevant features of the reported case supported by statements from published literature to elucidate and justify the presented case (Move 8) and make appropriate and justifiable suggestions (Green & Johnson, 2006).

> ***Move 8:*** *A combination of radiotherapy and chemotherapy is the best modality of treatment, especially for the early stages [Kwong, 2011], […] This tumor shows a poor response to CHOP regimen (Cyclophosphamide, Doxorubicin, Vincristine, and Prednisolone), with a high relapse rate [Tse & Kwong, 2013] […] Utilizing intrathecal Methotrexate as CNS prophylaxis in T cell lymphoma patients is controversial, and some authors do not recommend it because CNS relapses are rare in T cell lymphoma and there is insufficient data to show its efficacy in preventing CNS events [Pro & Perini, 2010].*

The final part of a Discussion section as a place for hypothesizing and even speculating (Skelton & Edwards, 2000) includes the findings and importance of the study, suggests possible clinical and pedagogic implications or recommendations, and indicates limitations, cautions, or suggestion for further research.

> ***Move 9:*** *Although our study had a short-term follow-up, based on a satisfactory oncological outcome with preserved performance status, spinal metastasectomy can be an effective treatment for GISTs with solitary spinal metastases. However, the effect of spinal metastasectomy on various parameters of survival needs to be investigated in detail.*

In general, the obligatory moves of Discussion sections in this study agree with Helan's (2012, p.149) in which four general moves were identified; "Move 8: Presenting Background Information, Move 9: Reviewing Literature Present to the Case, Move 10: Referring to the Case, and Move 11: Drawing Implications". However, two optional moves (Moves 2 and 3) presented in this study cannot be considered as consistent features of CRs. Besides, Moves 4 and 5 identified in this study were integrated into Helan's Move 8 as background information regarding symptoms, treatment and diagnosis. Moreover, Move 6 introduced in this study can help authors to discuss their case in a more convincing way by restating the gap in the literature followed by a discussion to fill in the existing gap.

Nearly all of the students (94%) included the Discussion in their reports. All obligatory moves except Move 1 and two optional Moves (2 and 3) were employed in a student's report to argue the significance of the case by discussing the symptoms, diagnosis and treatment followed by a brief review of literature and learning points and implications. Note the following example:

Student's Report:

> ***M4:*** *The patient initial presenting symptom of severe, diffuse, non-anatomical pain that was seemingly temporally related to her peritoneal dialysis caused us to consider primarily gastrointestinal and somatoform etiologies.*
>
> ***M3:*** *Careful medication review did several serotonergic agents was taking [were taken] prior to admission (duloxetine and tramadol). Furthermore, as her symptoms progressed and worsened during her stay, she was given ondansetron and promethazine at increasing dosages for symptomatic relief.*
>
> ***M2:*** *A difficult aspect of this case is the temporal relationship of her symptoms to her peritoneal dialysis.*
>
> ***M5:*** *A diagnostic consideration in this case was neuropathic malignant syndrome (NMS). NMS is associated with use of anti-psychotics, including promethazine, which the patient was taking prior to admission and which was additionally given to her for nausea while in the hospital. NMS is classically associated with fever, muscular rigidity and autonomic dysfunction, thus sharing many feature[s] with serotonin syndrome.*
>
> ***M6:*** *The patient's presenting symptom of diffuse pain is not typically associated with serotonin syndrome.*

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M7: *However, a recent 12 patients case series identified generalized pain in 4 patients (33%) with serotonin syndrome (Prakash, et al., 2015).*

M8: *one of the most important point in this case report is our initial use of ondansetron- a drug with serotonin modifying properties- for symptomatic treatment of the patient's nausea. Our liberal use of these medications very likely exacerbated her serotonin syndrome worsening her nausea, vomiting and diarrhea, and allowing the clonus and hyperreflexia to manifest.*

M9: *Thus it is important to recognize serotonin syndrome early, as symptomatic treatment of its symptoms may involve use of medications that will greatly worsen the condition.*

In the above example, the participant's attempt to observe the generic structure can demonstrate the development of rhetorical consciousness on CRs generic structure after instruction. The student failed to cite previous studies while discussing the case; however, there could be more justification with reference to previously published studies in order to highlight the importance of the current study. Therefore, medical students should provide more elaboration and discussion on symptoms, diagnosis, and treatment procedures by referring to other similar studies to contextualize their current case.

4.1.5 Conclusion in standard and students' CRs

A Conclusion section is not considered a free-standing part of CRs as it is incorporated in the final move of the Discussion section (Helan, 2012); however, it was present in all reports taken from JMCR and AJCR. A Conclusion can be constructed through obligatory Move 2 (Findings) and Move 3 (Implications) and conventional Move 1 (Summary of the case or definition of Disease) as illustrated in Table 8.

Table 8. Frequency and percentage of moves in CRs conclusions

Moves and Labels	Standard (100 CRs)	Students' (32CRs)
Move 1: Summary of the case or characteristics of the disease: **Conventional**	40 (40%)	17 (53%)
Move 2: Stating the findings of your study: **Obligatory**	100 (100%)	27 (84%)
Move 3: Implications, suggesting ways of treatment or diagnosis: **Obligatory**	100 (100%)	26 (81%)

The following moves show how a conclusion section can be reported by stating the summary, findings and implications:

Move 1: *In summary, we have reported a case of NP associated with spinal cord injury that responded to intravenous lidocaine treatment.*

Move 2: *The relief was temporary but significant for a three week period, with improved daily function.*

Move 3: *The implication of this effect could represent the need for maintenance infusions at three to four week periods or a transition to an oral form of lidocaine, in our patient.*

Majority of the students (84 %) incorporated this section in their reports and mostly emphasized the findings and implications (Moves 2 and 3), but only about half of them included a summary of the case (Move 1). To summarize the learning points from the case, to offer implications for clinical practice and recommendations, authors use hedging devices such as modal verbs in SCRs. Similarly, the students used the hedging devices to report the mentioned functions. In a student's report, the characteristic of the disease in Move 1 is followed by reporting the finding (Move 2) and hedging devices were used to state the finding of the study.

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Student's Report:

M1*: One of the presentations and symptoms of serotonin syndrome* ***can*** *be diffuse body pain.*

M2: *Medication like ondansetron used* ***to*** *symptomatically treat nausea and vomiting that* ***may*** *accompany serotonin syndrome* ***can*** *actually exacerbated the condition.*

As a final point, it should be noted that the moves presented in each individual section can occur in different sequences throughout CRs based on authors' creativity or the sequence of specific procedures, and some moves may recur throughout each section based on the sequence of medical procedures performed for each case on the basis of ideal logical progression.

At the beginning of the course, most of the students were not familiar with the organizational structure and they considered it as a clinical observation report. Hospital medical reports only provide information about a patient and the procedure of diagnosis and treatment, and they lack robust introduction, abstract, discussion and conclusion sections. Therefore, students required explicit knowledge about the formation and features of the reports to learn a new discourse. Mickan (2013, p. 78) affirms that "Learning new discourses requires conscious attention to the language features of text types which characterize specific practices."

As shown in the macro and micro structure analyses of the students' reports, majority of the students tended to incorporate standard elements of CRs to their reports after receiving the instruction. Swales (1990) argues that "we can still recognize that students are helped if they can also schematize the structures of the sections themselves and so further develop an understanding of what it is that allows them to recognize a section as Method or Discussion, and what it is that allows them to argue that one section is more or less effective than another" (p. 213). Consciousness-raising can develop learners'awareness of the target form and draw the learner's attention to features of the target language (Batstone, 1994; Rutherford, 1987). Thus, familiarity makes genres less challenging and learners of writing will benefit from reading about, discussing, and practicing the genre (Hyland 2002; Wingate, 2012). It can be concluded that genre pedagogy can help students to enter the discourse community of their fields. This is in line with a study by Morell and Cesteros (2019) which describes the genre-based approach used in a bilingual (English and Spanish) Applied Linguistics graduate course. Their findings from the survey confirmed the positive effects of genre knowledge gains in accomplishing further research goals.

5. Conclusion

The findings of this study suggest that CRs have salient features despite their variations. The differences can be ascribed to the specific nature of each case and the distinct medical procedures. The present study also investigated the generic structure of CRs and evaluated the ways in which medical students employed those functions within their reports. Since the course duration (sixteen sessions) was almost short, it cannot be claimed that genre pedagogy leads to genre acquisition and consequently enables students to write standard, publishable report. But it could be concluded that consciousness-raising through explicit teaching can lead to the students' genre awareness. Turner (1996) argues for genre-based classroom instruction using tasks designed to bring to students' conscious attention the value and the belief systems of a target community. Johns (2008) also maintains that genre-based classrooms need to focus on both genre awareness and genre acquisition. Evaluating the effectiveness of genre-based classrooms can be beneficial for pedagogical goals specifically in the context of English for Academic Purposes. This study suggests familiarizing novice researchers with the generic structure of standard case reports as a starting point for academic writing and publishing, and medical students to better understand the functions of CRs. Finally, it is possible for medical students to encounter a rare or unusual case and feel incapacitated to write a well-grounded case report due to their insufficient knowledge of generic structures. This justifies sensitizing medical students to proper reporting of a case. This line of study can be conducted on more graduate or undergraduate students in a longer course duration to make more valid generalizations.

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