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Review Article

Assessment of the Quality of Case Reports in the Journal of Acupuncture Research Using the CARE and STRICTA Guidelines

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ABSTRACT

The purpose of this study was to assess the quality of the case reports in the Journal of Acupuncture Research (JAR). All case reports were retrieved from November 2017 to June 2020. There were 19 case reports included in this assessment based on the case report (CARE) guidelines and case report and standards for reporting interventions in clinical trials of acupuncture (STRICTA) guidelines. The overall quality of reporting was relatively high (83.08% on Case Report guidelines and 77.78% on Standards for Reporting Interventions in Clinical Trials of Acupuncture guidelines), but several crucial items remained substantially underreported, such as identifying as a case report (keywords), patient information and perspective, clinical findings, diagnostic assessment, and intervention information. In 18 out of 19 included case reports of acupuncture-related interventions, several items remained considerably underreported such as acupuncture regimen variation, depth of needle insertion, response sought, and experience of acupuncturists. In the classification by disease, condition, or syndrome, 13 out of 19 included case reports were for musculoskeletal disorders (68.4%), which is the main clinical medical field of Korean medicine services. The results of this study may help develop more appropriate reporting guidelines for case reports published in JAR.

Introduction

Case reports provide accurate and transparent data collection from episodes of care information, that may help in the delivery of high-quality individualized healthcare [1]. They describe medical problems of 1 or more patients and provide the basis of clinical research and education [2].

The case report (CARE) guidelines are systematically organized reporting guidelines for case reports which were published in 2013, and provide important information to help standardize case report formats. CARE guidelines consist of a checklist of 13 items which are structured to correspond with key components of a case report and capture useful clinical information to support facilitation of accurate, transparent, and useful facts in case reports [3]. The CARE guidelines provide authors a way to structure their systematic reporting so that case reports related to the care of individual patients have meaning to the patient and the healthcare provider, as well as to the broader medical community [4]. CARE was revised in 2017 [5] and the Korean version was published in

2015 [6]. Regarding the application of the CARE guidelines for traditional medicine, case report for Sasang medicine (CARES) guidelines and consensus-based recommendations for case reports in Chinese medicine (CARC) have been published. CARES provide common guidelines for traditional Korean medicine (KM) including characteristics of Sasang medicine with explanations and a series of practical examples of good reporting [7]. CARC was developed based on reviewing the general reporting quality of case reports for traditional Chinese medicine, and includes the reporting recommendations checklist with a brief description of traditional Chinese medicine [8].

The standards for reporting interventions in clinical trials of acupuncture (STRICTA) was designed to improve the standards for reporting the components of needling acupuncture in clinical trials [9]. STRICTA suggests 6 items of reporting guidelines which cover the rationale for acupuncture, details of needling, treatment regimen, other components of treatment, practitioner experience, and the control or comparator interventions. The STRICTA is applicable to a broad range of clinical evaluation designs, including

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reporting acupuncture interventions of case reports [9,10]. Author guidelines in acupuncture-related journals suggest that full details of the acupuncture treatment in case reports should comply with the STRICTA recommendations [11]. This study was conducted to assess the current status of the reporting quality in case reports from the Journal of Acupuncture Research (JAR), based on the CARE and STRICTA guidelines.

Materials and Methods

Searching for and selecting case reports

The Korean Acupuncture and Moxibustion Medicine Society (KAMMS) first published its official journal in 1984. In November 2017, the journal was reorganized and became the "Journal of Acupuncture Research" detailing guidelines for study and publication to provide a platform as an international academic open access journal. All case reports published in JAR from November 2017 to June 2020 were retrieved. Case reports were selected by using the journal search system of JAR (https://www.e-jar.org/). Case reports containing the words "case," "case report," "case study," "case series" in the journal title were selected and the abstracts screened. Studies that analyzed a case control study or patient preference study were excluded from the final analysis. There were 19 case reports included for the assessment.

Data extraction

The quality of the case reports was assessed using the Korean version of CARE guidelines published in 2015 [6] and the revised version of the STRICTA guidelines published in 2015 [10]. Before the evaluation, 2 reviewers underwent training on each CARE guideline item and STRICTA guideline checklist to ensure consistency in interpretation and scoring.

Each included case report was assessed by 2 independent reviewers and disagreements were resolved by joint discussion. Before the evaluation, two assessors trained on the CARE and STRICTA guidelines to ensure consistency analysis of interpretation and scoring, and discussed details of criteria of items and checklist. After the evaluation, there were some minor evaluation, but no major discrepancies were found.

Evaluation of the CARE guidelines and STRICTA guidelines

In the assessment criteria there was a 13-item checklist including 28 sub-items. A case report was evaluated as "Sufficient" if the items were sufficiently mentioned, "Not-Sufficient" if the items were not sufficiently mentioned, and "Not-Reporting" if there was no mention of an item. If the items were not applicable in the case report, these were evaluated as "Not applicable," and were excluded from analysis.

To provide incorporating characteristics of KM, if the contents corresponding to the items were mentioned in the report, a qualitative evaluation was permitted regardless of the topic presented in the CARE guidelines checklist. The guideline item topics of "Clinical findings (Item 6)" and "Diagnostic reasoning including other diagnoses considered (Item 8c)" were evaluated based on the CARES guidelines for KM.

The STRICTA guidelines were applied to assess the quality of reporting of treatment components of acupuncture interventions. Each item from the STRICTA guidelines was evaluated as "Sufficient" if the item was sufficiently reported, or "Not-Sufficient" if the item was not sufficiently reported. If "Control and comparator intervention (Item 6)" was not relevant in the case

report but was relevant in the controlled trial, item 6 was excluded in the analysis.

Results

Included case reports

There were 19 of 22 screened case reports included in the qualitative evaluation assessment (Fig. 1). There was 1 retrospective study and 2 prospective observational studies which were excluded from the qualitative evaluation assessment.

Quality assessment results for details of CARE guidelines for included studies

In the 19 case reports included, the overall quality of reporting was relatively high (Mean = 87.86%, Median = 88.46%, Max = 96.30%, Min = 80.77%). The average quality of reporting case reports published between 2019-2020 was remarkably higher (90.44%) than reports published between 2017-2018 (84.31%) (Fig. 2). The quality of "not sufficient reporting" was relatively high (Median = 29.63%, Max = 44.44%, Min = 14.81%; Table 1).

The quality of reporting items of the CARE guidelines was evaluated by each item (Table 2, Fig. 3). Items of "not sufficient reporting" (> 50%) were as follows: "Keyword (Item 2)," "De-
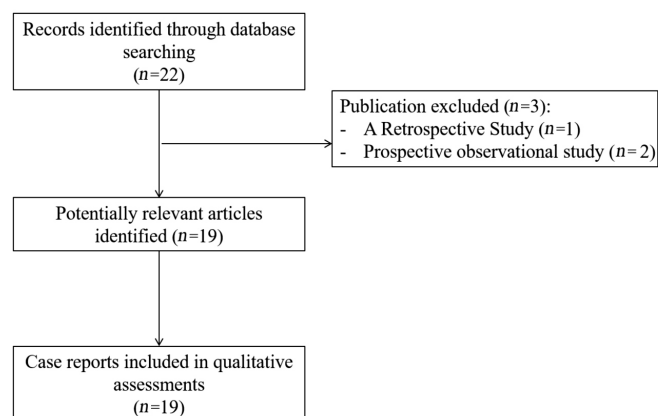

Fig. 1. Flow chart of case reports identified, screening, included process.
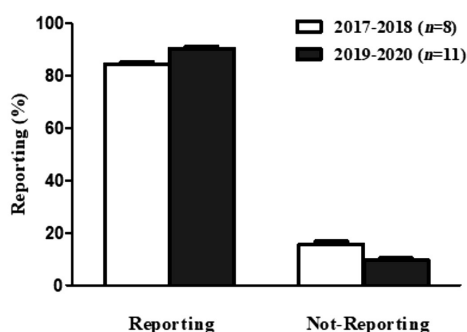

Fig. 2. Comparison of the quality reporting before and after 2019.

Table 1. Percentage of Items Reporting according to CARE Guidelines by Each Case Report.

Case reports	Reporting						Not-reporting	
	Sufficient		Not-Sufficient					
First author (y)	n1/N	%	n2/N	%	(n1+n2)/N	%	n3/N	%
Kim (2017)[12]	14/26	53.85	9/26	34.62	14/26	88.46	3/26	11.54
Benli (2018)[13]	14/26	53.85	8/26	30.77	14/26	84.62	4/26	15.38
Lee (2018)[14]	13/26	50.00	9/26	34.62	13/26	84.62	4/26	15.38
Baek (2018)[15]	12/26	46.15	9/26	34.62	12/26	80.77	5/26	19.23
Kim (2018)[16]	17/26	65.38	5/26	19.23	17/26	84.62	4/26	15.38
Park (2018)[17]	18/26	69.23	5/26	19.23	18/26	88.46	3/26	11.54
Lee (2018)[18]	14/27	51.85	8/27	29.63	14/27	81.48	5/27	18.52
Kim (2018)[19]	18/27	66.67	4/27	14.81	18/27	81.48	5/27	18.52
Choi (2019)[20]	18/27	66.67	6/27	22.22	18/27	88.89	3/27	11.11
Go (2019)[21]	16/26	61.54	7/26	26.92	16/26	88.46	3/26	11.54
Lee (2019)[22]	13/27	48.15	10/27	37.04	13/27	85.19	4/27	14.81
Hwang (2019)[23]	18/27	66.67	6/27	22.22	18/27	88.89	3/27	11.11
Shin (2019)[24]	17/26	65.38	6/26	23.08	17/26	88.46	3/26	11.54
Kim (2019)[25]	14/27	51.85	10/27	37.04	14/27	88.89	3/27	11.11
Kim (2019)[26]	14/27	51.85	12/27	44.44	14/27	96.30	1/27	3.70
Kwon (2019)[27]	15/26	57.69	9/26	34.62	15/26	92.31	2/26	7.69
Park (2019)[28]	14/27	51.85	11/27	40.74	14/27	92.59	2/27	7.41
Gi (2019)[29]	17/26	65.38	7/26	26.92	17/26	92.31	2/26	7.69
Min (2020)[30]	19/27	70.37	6/27	22.22	19/27	92.59	2/27	7.41
Max. of %		70.37		44.44		96.30		19.23
Min. of %		46.15		14.81		80.77		3.70
Median of %		57.69		29.63		99.46		11.54
Mean of %		58.65		29.21		87.86		12.14

1) 'n1', 'n2', and 'n3' mean the number of which items match each assessment-criteria: Sufficient, Not-sufficient, and Not-reporting, respectively.
2) 'N' means the number of applicable item.

identified demographic information and other patient specific information (Item 5a)," "Medical, family, and psychosocial history including relevant genetic information (also see timeline). Relevant past interventions and their outcomes (Item 5c)," "Clinical findings (Item 6)," "Timeline (Item 7)," "Diagnostic reasoning including other diagnoses considered (Item 8c)," "Administration of intervention (such as dosage, strength, duration)(Item 9b)," "The rationale for conclusions (including assessment of possible causes; Item 11c)."

Items of markedly not reporting were "Diagnostic challenges (such as access, financial, or cultural; Item 8b)," "Prognostic characteristics (such as staging in oncology) where applicable (Item 8d)," "Changes in intervention (with rationale; Item 9c)." "Intervention adherence and tolerability (How was this assessed?; Item 10c)," and "Patient perspective (Item 12)." Among 5 items of not reporting, 2 items of which were not applicable were included, such as "Prognostic characteristics (such as staging in oncology)

where applicable (Item 8d)" and "Changes in intervention (with rationale; Item 9c)."

Quality assessment results for details of STRICTA items for included studies

There were 18 out of 19 included case reports that reported acupuncture-related interventions including acupuncture, electroacupuncture, pharmacopuncture, acupotomy, and scalp acupuncture, and these 18 case reports were assessed qualitatively according to the STRICTA guidelines. The average percentage of the quality of reporting was considerably high at 77.78%. Items with markedly "not-sufficiently reporting" (< 50%) were acupuncture regimen variation (1c, 38.89%), depth of needle insertion (2c, 33.33%), response sought (2d, 5.56%), and acupuncturists experience (5, 38.89%; Table 3).

Table 2. Percentage of Case Reports with Reporting Items of CARE Guidelines

Topic		Items	Reporting				Not-reporting	
			Sufficient		Not-sufficient			
			$n^{\dagger}/N^{\ddagger}$	%	$n^{\dagger}/N^{\ddagger}$	%	$n^{\dagger}/N^{\ddagger}$	%
Title	1	The words "case report" should be in the title along with the area of focus	16/19	84.21	3/19	15.79	-	-
Key word	2	2 to 5 key words that identify areas covered in this case report	2/19	10.53	17/19	89.47*	-	-
Abstract	3a	Introduction-What is unique about this case? What does it add to the medical literature?	18/19	94.74	1/19	5.26	-	-
	3b	The main symptoms of the patient, the important clinical findings, the main diagnoses, therapeutics interventions, and outcomes	19/19	100.00	-	-	-	-
	3c	Conclusion—What are the main "take-away" lessons from this case?	16/19	84.21	3/19	15.79	-	-
Introduction	4	One or two paragraphs summarizing why this case is unique with references	17/19	89.47	2/19	10.53	-	-
Patient information	5a	De-identified demographic information and other patient specific information	9/19	47.37	10/19	54.63*	-	-
	5b	Main concerns and symptoms of the patient	18/19	94.74	1/19	5.26	-	-
	5c	Medical, family, and psychosocial history including relevant genetic information (also see timeline). Relevant past interventions and their outcomes	3/19	15.79	16/19	84.21*	-	-
Clinical findings	6	Physical examination findings	3/19	15.79	16/19	84.21*	-	-
Timeline	7	Important information from the patient's history organized as a timeline	2/19	10.53	17/19	89.47*	-	-
Diagnostic assessment	8a	Diagnostic methods (such as PE, laboratory testing, imaging, surveys)	19/19	100.00	-	-	-	-
	8b	Diagnostic challenges (such as access, financial, or cultural)	1/19	5.26	-	-	18/19	94.74*
	8c	Diagnostic reasoning including other diagnoses considered	3/19	15.79	16/19	84.21*	-	-
	8d	Prognostic characteristics (such as staging in oncology) where applicable	-	-	-	-	19/19	100.00*
Therapeutic interventions	9a	Types of intervention (such as pharmacologic, surgical, preventive, self-care)	19/19	100.00	-	-	-	-
	9b	Administration of intervention (such as dosage, strength, duration)	4/19	21.05	15/19	78.95*	-	-
	9c	Changes in intervention (with rationale)	3/19	15.79	6/19	31.58	10/19	52.63*
Follow-up and outcomes	10a	Clinician and patient-assessed outcomes (when appropriate)	19/19	100.00	-	-	-	-
	10b	Important follow-up diagnostic and other test results	19/19	100.00	-	-	-	-
	10c	Intervention adherence and tolerability (How was this assessed?)	-	-	-	-	19/19	100.00*
	10d	Adverse and unanticipated events	5/19	26.32	5/19	26.32	9/19	47.37
Discussion	11a	Discussion of the strengths and limitations in your approach to this case	17/19	89.47	2/19	10.53	-	-
	11b	Discussion of the relevant medical literature	18/19	94.74	1/19	5.26	-	-
	11c	The rationale for conclusions (including assessment of possible causes)	8/19	42.11	11/19	57.89*	-	-
	11d	The primary "take-away" lessons of this case report	19/19	100.00	-	-	-	-
Patient perspective	12	When appropriate the patient should share their perspective on the treatments they received	3/19	15.79	5/19	26.32	11/19	57.89*
Informed consent	13	Did the patient give informed consent? Please provide if requested	15/19	78.95	-	-	4/19	21.05
Average			55.45		27.63		16.92	
			83.08					

* The percentage of not- reporting or not-sufficiently reporting item more than 50%.
† '*n*' means the number of which case reports match each assessment criteria of items: Sufficient, Not-Sufficient, and Not-Reporting, respectively.
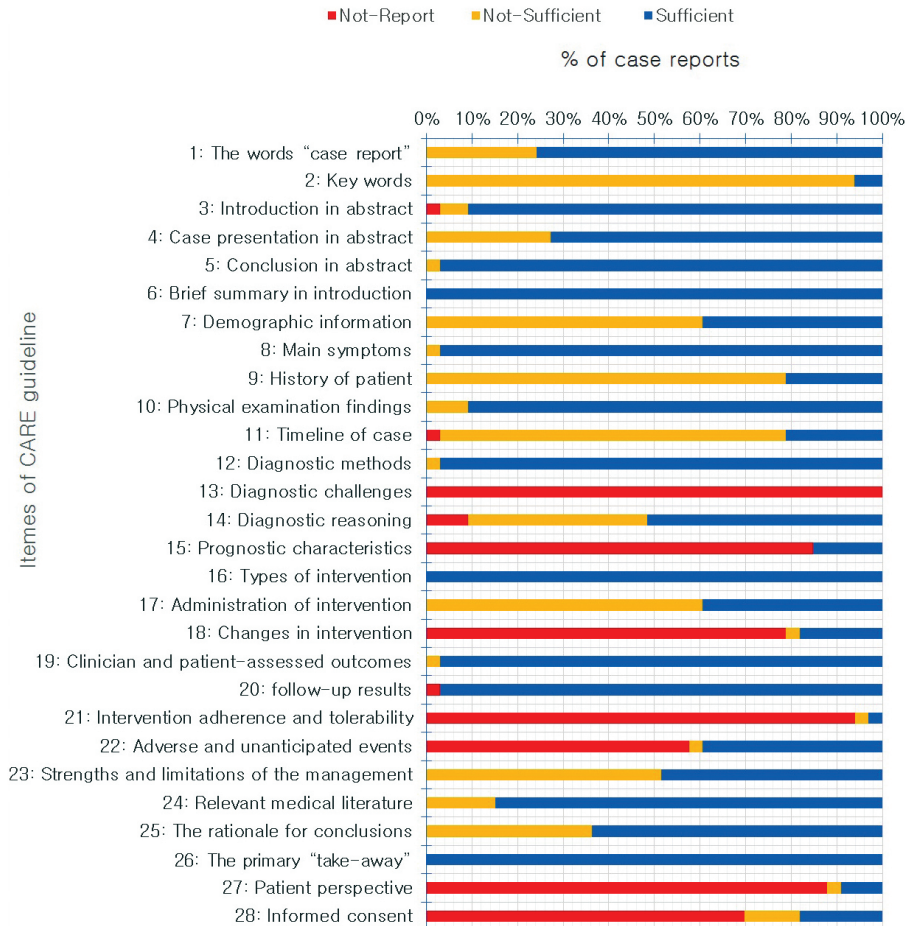‡ '*N*' means the number of case reports having applicable item.
CARE, case report.

Fig. 3. Case Reports According to The Quality of Reporting Evaluated by Each Item of CARE Guidelines. CARE, case report.

Details of authors' nationality, treatment intervention, diagnosis

In the 19 included case reports, 18 originated from Korea and 1 originated from Turkey, according to author's nationality (Fig. 4A). All 19 case reports reported combination treatment including KM treatment which were cupping, moxibustion, chuna, herbal medicine, physiotherapy, foot orthosis, and taping. There were 18 case reports originating from Korea that reported multi treatment interventions including acupuncture treatment. Of those, 4 reported performing Western medicine treatment along with KM treatment (Table 4).

There were 13 out of 19 case reports describing treatment for musculoskeletal disorders (68.4%) including Lisfranc joint injuries, radial palsy, carpal tunnel syndrome, posterior cruciate ligament avulsion fracture, multiple vertebral compression fractures associated with postpartum osteoporosis, femoral neck fracture, syringomyelia, proximal humeral fracture, cervical and lumbar herniated nucleus pulposus, rotator cuff tear, ankylosing spondylitis, dural ectasia, and functional scoliosis. There were 3 case reports of treatment for neurological disorders (15.8%) including Miller Fisher syndrome, Ramsay Hunt syndrome, and Parkinson's disease. There were 2 case reports of treatment for

strokes (10.5%), and 1 treatment for irritable bowel syndrome as an internal disease (5.3%; Fig. 4B).

Details of assessment tool

All 19 included case reports reported diagnostic tests and/or clinical examinations as an assessment tool for diagnosis of the condition, disease, or syndrome. All case reports evaluated the change in symptoms using various clinical examinations including interviewing, physical examination, and questionnaires. There were 16 out of 19 case reports where medical imaging devices such as computed tomography (CT), magnetic resonance imaging (MRI), X-ray, ultrasonography (US), and digital infrared thermographic imaging (DITI) were used as diagnostic tests (Table 4).

Discussion

KAMMS was established in 1983 and is a highly cited core journal in Korea [31]. In November 2017 it was renamed JAR, providing an international, interdisciplinary, academic, open access platform which underscores the importance of safety and effectiveness of acupuncture, and related therapies in integrative

Table 3. Percentage of Case Reports with Not-Sufficiently Reporting Items of STRICTA Guideline.

Item		Item Details	$n^{\dagger}/N^{\ddagger}$	%
1. Acupuncture rationale	1a	Style of acupuncture	18/18	100.00
	1b	Reasoning for treatments	18/18	100.00
	1c	Acupuncture regimen variation	7/18.	38.89*
2. Details of needling	2a	Number of needles	18/18	100.00
	2b	Name of points	18/18	100.00
	2c	Depth of insertion	6/18	33.33*
	2d	Response sought (e.g., de qi)	1/18	5.56*
	2e	Needle stimulation(e.g., manual, electrical)	14/18	77.78
	2f	Needle retention time	17/18	94.44
	2g	Needle type (diameter, length, etc)	16/18	88.89
3. Treatment regimen	3a	Number of treatment sessions	18/18	100.00
	3b	Frequency and duration of treatment sessions	18/18	100.00
4. Other components of treatment	4a	Details of other interventions	18/18	100.00
	4b	Setting and context	9/18	50.00
5. Practitioner background	5	Description of acupuncturists	7/18	38.89*
		Average	14/18	77.78

* The percentage of not-sufficiently reporting item less than 50%.
† 'n' means the number of which case reports match each assessment criteria of items.
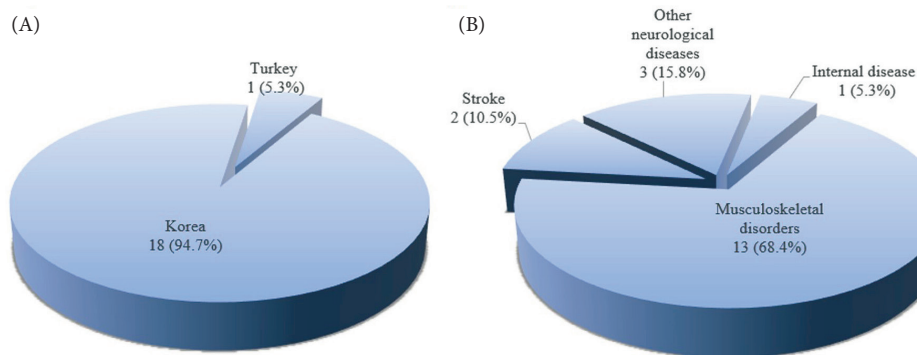‡ 'N' means the number of case reports having applicable item.

Fig. 4. Distribution of author's nationality (A) and diagnosis (B).

KM, whilst providing the basis for strengthening scientific understanding. This study was a quality assessment study to verify adherence to the required guideline items and reporting of case reports which reported to follow the CARE and STRICTA guidelines, published in JAR from November 2017 to June 2020.

Overall completeness of reporting was generally high (Median = 88.46%, Max = 96.30%, Min = 80.77%) in comparison to 7 previous reviews of case report evaluations in KM journals, including the Journal of Korean Medicine Rehabilitation (Max = 78.26%, Min = 60.87%) [32], the Journal of Pediatrics of Korean Medicine (Median = 80.77%, Max = 85.19%, Min = 73.08%) [33], the Journal of Korean Medicine for Obesity Research (Median = 62.50%, Max = 75.00%, Min = 57.14%) [34], the Journal of Sasang Constitutional Medicine (Median = 70.4%, Max = 92.6%, Min = 77.8%) [35], the Journal of Obstetrics and Gynecology of Korean Medicine (Median = 81.48%, Max = 88.46%, Min = 69.23%) [36], the Journal of Oriental Neuropsychiatry (Median = 75.0%, Max = 85.7%, Min = 59.3%) [37], and the Journal of Korean Medicine (Median = 81.48%, Max = 96.15%, Min = 76.91%) [38].

Overall quality of reporting of case reports in JAR published

Table 4. Distribution of Assessment Tool.

Case reports	Assessment tool	
First author (y)	Diagnostic test	Clinical examination
Kim (2017)[12]	CT, MRI, X-ray	AHS
Benli (2018)[13]	EMG	MRC scale
Lee (2018)[14]	US	BCTQ, muscular strength test, Phalen's test, Tinel's sign, VAS
Baek (2018)[15]	MRI	articulation accuracy, vowel accuracy, alternation and speed of reading sentences
Kim (2018)[16]	CSF, Laboratory tests, MRI	DTR, VAS, eye movement, diplopia questionnaire
Park (2018)[17]	MRI	EQ-5D, NRS, WOMAC
Lee (2018)[18]	X-ray, MRI, QCT, Laboratory tests	EQ-5D, NRS, ODI
Kim (2018)[19]	CT	HHS, NRS
Choi (2019)[20]	MRI, Laboratory tests, ECG, X-ray	mBorg, VAS
Go (2019)[21]	CT, X-ray	NRS, ROM, SPADI
Lee (2019)[22]	MRI	NRS, ROM
Hwang (2019)[23]	-	BBS, GSRS, H-Y stage, NRS, PDQL, stress index, UPDRS
Shin (2019)[24]	DITI	H-B grade, NRS, Yanagihara scale
Kim (2019)[25]	MRI	VAS, ROM
Kim (2019)[26]	X-ray	BASDAI, BASFI, K-HAQ, M-HAQ, NRS, ROM
Kwon (2019)[27]	MRI	EQ-5D, ODI, NRS
Park (2019)[28]	MRI	NRS, grip force, quality of sleep
Gi (2019)[29]	X-ray	Cobb angle, NRS
Min (2020)[30]	X-ray, Laboratory tests	GSRS, IBS-QOL, NRS

AHS, ankle–Hindfoot scale; BASDAI, bath ankylosing spondylitis disease activity index; BASFI, bath ankylosing spondylitis functional index; BBS, Berg balance scale; BCTQ, Boston carpal tunnel syndrome questionnaire; CSF, cerebrospinal fluid examination; CT, computed tomography; DITI, digital infrared thermographic imaging; DTR, deep tendon reflex; ECG, electrocardiogram; EMG, electromyogram; EQ-5D, European quality of life five dimensions; GSRS, gastrointestinal symptom scale; H-B grade, House–Brackmann grade; HHS, Harris hip score; H-Y stage, Hoehn and Yahr staging; IBS-QOL, Irritable bowel syndrome–quality of life; K-HAQ, Korean health assessment questionnaire; mBorg, modified Borg scale; M-HAQ, modified health assessment questionnaire; MRI, magnetic resonance imaging; MRC scale, medical research council power of wrist extension scale; NRS, numerical rate scale; ODI, Oswestry disability index; PDQL, Parkinson's disease quality of life questionnaire; QCT, quantitative computed tomography scan; ROM, range of motion; SPADI, shoulder pain and disability index; UPDRS, unified Parkinson's disease rating scale; US, ultrasonography; VAS, visual analogue scale; WOMAC, western Ontario and McMaster universities osteoarthritis index.

between 2017-2019 was relatively high (Median = 88.46%, Max = 96.30%, Min = 80.77%) and comparatively, the quality of reporting case reports published between 2019-2020 was remarkably higher (90.44%) than reports published between 2017-2018 (84.31%).

The quality of reporting was comparatively suitable, but some items require further improvement. "Keyword (Item 2)" identifying areas covered in the case report were remarkably incompletely reported, only 2 of 19 reports included "case report" as 1 of the 6 keywords. "Timeline (Item 7)", the important demographic information from the patient's medical history and presentation using a table or figure, was remarkably incompletely reported, and only 2 out of 19 case reports were adequately reported.

"Clinical findings (Item 6)" describing the relevant physical examination and other significant KM clinical findings such as pulse diagnosis and tongue diagnosis was remarkably insufficiently reported, and 3 out of 19 care reports were adequately reported, although all case reports applied multiple examinations including interviewing, physical examination, and a questionnaire.

Patient information of de-identified demographic and other specific information such as ethnicity, and occupation (Item 5a) were not sufficiently reported, but age and sex were fully reported in the 19 included case reports. Medical and family history including relevant genetic information (Item 5c) was also incompletely reported. The patient race was assumed to be Korean in 18 out of 19 case reports based upon the author's nationality and 3-digit notation of the patient's name. Patient race is generally known to be of no clinical usefulness in identifying a patient, understanding a patient's disease, or making a treatment plan. For a case in which it is relevant, the reporting of race during the physical examination or as part of the social history, would be recommended [39].

"Diagnostic reasoning including other diagnoses (Item 8c)" was remarkably not sufficiently reported. According to the perspective that acupuncture or other KM treatments are determined not

just by a diagnosis based on Western medicine but also by KM diagnosis where the cause and mechanism of disease or the pattern identification process are considered. There were 18 out of 19 case reports which applied laboratory tests and imaging tests such as CT, MRI, X-ray, US, or DITI. Both diagnostic tests and clinical characteristics related to logic and evidence potentially enable a more *accurate assessment* in KM.

Although the quality of reporting in 18 case reports of acupuncture-related interventions was considerably high (77.78%) based on the STRICTA checklist, "administration of therapeutic interventions (Item 9b)" such as depth of acupuncture needle insertion, acupuncture regimen variation, response sought, and practitioner experience was not sufficiently reported. There were no case reports where a single KM intervention was used. All included case reports described combination treatments of KM including cupping, moxibustion, chuna, herbal medicine, physiotherapy, foot orthosis, or taping, and 4 case reports described combined Western medicine and KM treatments. This application of more than 1 treatment may reflect the view in the clinic that this improves treatment efficiency and patient satisfaction.

There were 18 case reports originating from Korea which reported performing multi treatment interventions including acupuncture treatment. For the reporting of acupuncture interventions in case reports the use of the STRICTA guidelines is necessary to improve the completeness and transparency of the reporting acupuncture interventions [9].

Reporting the rationale for conclusions including "the assessment of possible causes (Item 11c)" is recommended based upon "the relevant medical literature (Item 11b)". However, more than 50% of case reports insufficiently reported the causes or reasons of therapeutic interventions.

"The intervention adherence and tolerability (Item 10c)" was remarkably not reported in all included case reports. There is a possibility that the patient may be regarded as a subject to be treated, so it is necessary to enhance the patient's role as a participant and faithfully reflect the patient's satisfaction in the treatment.

"Diagnostic challenges (Item 8b)" were remarkably not reported. Low quality reporting of diagnostic assessment items of "clinical findings (Item 6)," "diagnostic challenges (Item 8b)," and "diagnostic reasoning including other diagnoses considered (Item 8c)" might be due to the availability of access in an institution and the economic limitations of a dual medical system in Korea. A dual health care system has been maintained in Korea where Western medicine doctors and KM doctors coexist [40]. KM doctors are restricted in performing the laboratory tests and medical imaging tests. However, in Korea, both Western medicine and KM have used the Korean Standard Classification of Diseases code for treatments and invoicing for National Health Insurance payments. This study seemed to reflect the current status of KM's clinical practice where the diagnosis of disease was confirmed based upon the results from the diagnostic tools and devices used through collaboration or cross-medication with Western medicine institutions.

The item of prognostic characteristics such as "staging in oncology (Item 8d)" was not relevant in all included case reports, and the item of "changes in intervention with rationale (Item 9c)" were not applicable in 10 case reports, so these 2 items were excluded in the analysis.

"The patient perspective (Item 12)" was not reported in > 50% of the included case reports. Where it is appropriate, the patients should share their views on the treatments they received. Case reports are of great value in the context of patient-centered medicines, and the specific personal experiences of a practitioner,

and clinical information about patients are regarded as valuable to disseminate in the KM community. If possible, doctors should share the patients' experience or point of view, and listen to and record the patient views of the treatment at the appropriate time. The patient's motivation to visit, changes related to the intervention, and the impact of treatment on quality of life including surrogate statements such as minors' parents should be described in the case report.

In the classification by disease, 13 out of 19 included case reports discussed musculoskeletal disorders (68.4%). Musculoskeletal system diseases rank number 1 (52.44%) in outpatient claims according to the Korean Standard Classification of Diseases in the first quarter of 2012 [41]. Since 1987 KAMMS played a central role in the publication of clinical and academic acupuncture-related interventions for various diseases, conditions and syndromes centered on musculoskeletal disorders which the health system covered through the National Health Insurance. The results of the distribution by disease in this study are related to the main medical fields covered by KAMMS.

To our knowledge, this study is the first quality assessment report of case reports published in JAR which have used the CARE and STRICTA guidelines for treatment intervention assessment, unlike other quality assessments of case reports published in other KM journals. Although the STRICTA guidelines have primarily been used to improve the standards for reporting interventions in acupuncture clinical trials, it is also applicable to case studies to document the same level of detail relating to the acupuncture intervention administered.

This study has several limitations. Firstly, the results may not fully represent all case reports published in JAR because the case reports that were included in this study were taken from JAR and not KAMMS. Depending on the scope of this study, prior case reports that are less relevant to the JAR were limited. However, considering the representativeness of JAR, it is reasonable to assess the quality of reporting of case reports according to the reports published from November 2017. Secondly, since the CARE guidelines were not based on the field of KM, each of the items were evaluated with reference to the CARE guidelines. This study provides valuable information about the current reporting quality of case reports in JAR. In the future, a follow-up evaluation of how the reporting quality level of case studies published in JAR changes after publication of this study is needed.

Conclusion

The information obtained through transparent and detailed case reports will help to provide a basis for the effectiveness of acupuncture-related intervention, expand the field of acupuncture research, and develop further guidelines regarding clinical practice. Our findings report on the current reporting quality status in case reports published in JAR and provide information that could promote transparency and completeness of case reports. The CARE guidelines and STRICTA guidelines for case reports may be helpful in improving the quality of evidence, the completeness of reporting case reports, and allow understanding of the integrative mechanisms and clinical effects of acupuncture treatment.

The overall quality of case study reporting, reviewed in this article, was relatively high. All case reports submitted to JAR should comply with the submission instructions, the CARE guidelines, and the STRICTA guidelines. Through this study, it was possible to identify the well-reported, and missing or insufficiently reported cases reports published in JAR. Further study will be necessary to develop guidelines for case reports centering on the acupuncture-related intervention of KM suitable for JAR.

Conflicts of Interest

The authors have no conflicts of interest to declare.

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