



Original Article

# Preferences and attitudes of young Chinese clinicians about using a shared decision making tools for communicating cardiovascular risk

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## Abstract

**Objective:** This study assesses the attitudes and preferences of Chinese clinicians toward their involvement in shared decision making (SDM).

**Methods:** From May 2014 to May 2015, 200 Chinese clinicians from two hospitals were enrolled to complete a survey on their attitude towards SDM. We conducted the survey via face-to-face interviews before and after an educational intervention on SDM among young Chinese clinicians. The clinicians were asked to give the extent of agreement to SDM. They also gave the extent of difficulty in using decision aids (DAs) during the SDM process. The variation in the range of responses to each question before and after the SDM intervention was recorded. The frequency of changed responses was analyzed by using JMP 6.0 software. Data were statistically analyzed using Chi-square and Mann–Whitney *U* tests, as appropriate to the data type. Multiple logistic regressions were used to test for those factors significantly and independently associated with preference for an approach for each scenario.

**Results:** Of the 200 young Chinese clinicians sampled, 59.0% indicated a preference for SDM and a desire to participate in SDM before receiving education or seeing the DA, and this number increased to 69.0% after seeing the DA with the sample video of the SDM process on Statin Choice. However, 28.5% of the respondents still reported that, in their current practice, they make clinical decisions on behalf of their patients. The clinicians who denied a desire to use the DA stated that the main barriers to implement SDM or DA use in China are lack of time and knowledge of SDM.

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**Conclusions:** Most young Chinese clinicians want to participate in SDM. However, they state the main barriers to perform SDM are lack of experience and time. The educational intervention about SDM that exposes clinicians to DAs was found to increase their receptivity.

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*Keywords:* Decision aid; Shared-decision making; Cardiovascular risk; China

## Introduction

Shared decision making (SDM) refers to the work that patients and clinicians do together to arrive at a medical decision that reflects the best available research evidence and the preferences and values of the informed patient.<sup>1</sup>

Currently in the mainland of China, most clinicians tend to make clinical decisions on behalf of their patients based on their clinical experience. The role of patients is often ignored during the process of clinical treatment decisions. Actually, we found only one survey about the decision making preferences of patients from China. The uncertainty in Chinese patients arises from gaps in the evidence or variation in preferences about closely matched alternatives.<sup>2</sup> SDM seeks to arrive at the best option for the patient, with the physician often leading the conversation and empathically engaging the patient to the extent they want to engage and participate in the process. This approach differs significantly from traditional practices, in which clinicians often act in a paternalistic and expedient fashion, deciding for their patients. Unfortunately, little is known about the role of preference of patients in decision making in the mainland of China. In our previous study, we investigated the feasibility of SDM among Chinese patients and clinicians.<sup>3</sup> However, only a few Chinese researchers have conducted trials using SDM. Similarly, there are no reports of tools or interventions developed or tested in the mainland of China with the goal of improving SDM. It is important to educate clinicians, especially young clinicians who tend to accept new approaches or concepts more easily if we are willing to implement SDM in China. Thus, it is necessary to perform a survey among Chinese clinicians on their preferences in participating in and knowledge of SDM.

Due to regional disparities in China, geographically focused health services and survey research may help determine how and to what extent clinicians can and will take part in SDM across different healthcare contexts and regions in China. Careful qualitative

research to understand how SDM should be understood in the Chinese context may represent an important prerequisite to the empirical task of promoting SDM in the clinical encounter.

The goal is to use items to measure different aspects of participation in decision making and, to incorporate measures of Chinese clinicians' preferences developed by other investigators, where suitable. The survey was conducted through face-to-face interviews that lasted approximately 10 minutes before and after understanding the SDM process through a video, paper decision aids (DAs), and a website DA of Statin Choice.

## Methods

### *Ethical approval*

All procedures pertaining to human subject research involved in the conduct of this study were approved by Human Research Protection Committee in The First Affiliated Hospital of Dalian Medical University (approval number: LCKY2014-14). This study protocol was registered at China Clinical Trial Registry (registration number: ChiCTR-OCS-14004646).

### *Study participants and eligibility criteria*

From May 2014 to May 2015, young Chinese clinicians who met the following criteria from two hospitals were enrolled in this study.

(1) Clinical practice. Clinicians who had served at least 600 patients in the previous 12 months were considered eligible to participate in the study.

(2) Clinicians. We conducted a two-centered survey enrolling 200 clinicians who were first- or second-year residents to examine the clinicians' preference in SDM on Statin Choice in China. We recruited clinicians, defined as professionals from participating practices, if they ever provided care to patients with coronary artery disease. Two hundred clinicians, who provided written informed consent, and were working in two

government-funded teaching hospitals in Northern China, namely, The First Affiliated Hospital of Dalian Medical University (DMU) and Beijing Anzhen Hospital, Capital Medical University (CMU), were enrolled in the study.

The following characteristics of clinicians were recorded: age, gender, specialty, and study time for medicine.

### *Questionnaire development*

Based on the questionnaire in English, the Chinese version was translated by two translators separately. After discussing and proofreading, the Chinese version of the questionnaire was developed and then translated into English. In the case of the translated English version differing from the primary one, a third translator discussed with the two translators and reached an agreement on the final Chinese version.

Before the first survey, the investigators introduced the concept and the process of SDM in words generally without any tools. All clinicians were requested to undertake the same survey again after seeing the sample videos of SDM, a DA card, or following a website DA on Statin Choice, which was described in our previous study.<sup>3</sup>

The method was described in detail (<http://www.chictr.org.cn/index.aspx>, ChiCTR-OCS-14004646). First, we reviewed models of decision making including work by Charles et al,<sup>4</sup> Montori et al,<sup>5</sup> and Lam et al<sup>6</sup> Then, in order to select a small number of items for the final questionnaire, we pilot-tested the items developed previously. These items were then modified based on feedback from respondents regarding clarity of wording and full understanding of the underlying concept. Finally, the main questionnaire items comprised the following statement which is shown in Table S1 in the [Supplementary Appendix](#). Respondents were asked to rate each item on a 7-point scale ranging from “strongly agree” to “strongly disagree” with categories for moderate and slight agreement or disagreement between the anchors.

The questions were selected to cover clinician demographics, information sharing style, satisfaction with DA style, and post DA satisfaction (Figs. S1–S2 in the [Supplementary Appendix](#)).

### *Decision aids*

The Statin Choice DA was modified by Montori et al.<sup>6</sup> It has three different versions according to baseline 10-year cardiovascular risk, pre-assessed for each patient: used for patients with a 10-year

cardiovascular risk <15%, for patients with an estimated risk between 15% and 30%, and for patients with an estimated risk >30%. The DA also presents the absolute risk reduction of cardiovascular events with statins, the potential downsides of taking statins, and a question prompting patients to express whether they are ready or not to decide and consequently which action they would like to take.

### *Training of investigators*

Before the survey, a study team member conducted a two-day meeting in-person to show how to use the DA. All researchers were given some sample videos of the Chinese version for guiding them on how to perform SDM. Brief video clips and storyboards that demonstrate the basic use of DAs are publicly available at <http://kercards.e-bm.info>.

### *Data collection and analysis*

This prospective study adopted a “before and after” design. Administration of the questionnaire constituted the intervention, introduced halfway through the study period, giving rise to a control group (before seeing the DA) and an intervention group (after seeing the DA).

In question 3's answer (doing shared decision making during other treatment choice communication), 1–2 equaled 1 point (“agree”), 3–5 equaled 2 points (“not sure”), and 6–7 equaled 3 points (“disagree”). For question 5 (the extent of difficulty in using decision aids), “very easy” or “easy” equaled 1 point, “not sure” equaled 2 points, “difficult” or “very difficult” equaled 3 points, and “say no” equaled 4 points. To compare the change of clinicians' attitude before and after seeing the DA, frequency of changes in points was analyzed using JMP 6.0 software (JMP, Cary, NC, USA).

The clinicians' age, gender, years of studying medicine, workplace, and specialty were recorded. Data were statistically analyzed by using Chi-square and Mann–Whitney U tests, as appropriate to the data type. Multiple logistic regressions were used to test for those factors significantly and independently associated with preference for an approach for each scenario. Confidence intervals were calculated where appropriate. A two-tailed  $P < 0.05$  was considered statistically significant.

## **Results**

Of 200 clinicians identified, 193 completed both of the surveys. However, 7 refused to undertake the survey again. The response rate was 96.5%. The basic

Table 1  
Change of questionnaire answers of 193 clinicians before and after seeing the decision aid on Statin Choice, *n*(%).

Item	Change	DMU ( <i>n</i> = 93)	CMU ( <i>n</i> = 100)
Change in Q1 (preference in decision making)	−3 grade	1 (1.1)	2 (2.0)
	−2 grade	3 (3.2)	5 (5.0)
	−1 grade	18 (19.4)	9 (9.0)
	No change	48 (51.6)	64 (64.0)
	+1 grade	17 (18.3)	16 (16.0)
	+2 grade	6 (6.5)	4 (4.0)
Change in Q3 (doing shared decision making during other treatment choice communication)	−3 grade	0 (0)	4 (4.0)
	−2 grade	1 (1.1)	9 (9.0)
	−1 grade	22 (23.7)	16 (16.0)
	No change	60 (64.5)	46 (46)
	+1 grade	10 (10.8)	7 (7.0)
	+2 grade	0 (0)	8 (8.0)
	+3 grade	0 (0)	3 (3.0)
	Yes to no	9 (9.7)	9 (9.0)
Change in Q5 (the extent of difficulty in using decision aids)	No to yes	21 (22.6)	17 (17.0)
	−3 grade	0 (0)	0 (0)
	−2 grade	0 (0)	10 (10.0)
	−1 grade	19 (20.4)	17 (17.0)
	No change	74 (79.6)	58 (58.0)
	+1 grade	7 (7.5)	5 (5.0)
	+2 grade	0 (0)	9 (9.0)
	+3 grade	0 (0)	1 (1.0)

DMU: Dalian Medical University; CMU: Capital Medical University.

characteristics of Chinese clinicians are shown in Table S1 in the [Supplementary Appendix](#). It shows that most of the clinicians were women, young, and lacked clinical practice experience.

In their clinical decision making, more clinicians tended to choose “the patient makes the decision after seriously considering my opinion” in CMU or “the patient and I share responsibility for making the decision after carefully considering both of our opinions” in DMU before seeing the DA or sample videos. Then, after seeing the DA, some clinicians in both hospitals switched to opt for SDM for making their clinical decisions. As shown in [Table 1](#), 51.6% of DMU clinicians and 64.0% of CMU clinicians did not change their responses. However, of the CMU clinicians who changed their mind after seeing the DA, fewer clinicians preferred patients being involved in decision making than depending on their practice experiences (16.0% vs. 20.0%). For DMU clinicians, this ratio was similar (22.5% vs. 23.6%).

In terms of factors affecting the decision making process, nearly 49.7% reported that they made clinical decisions on behalf of their patients. 30.1% made various decisions depending on their patients. They seldom cared about visit time and type of decision making. Despite knowing about SDM, 52.6% of clinicians in DMU and 58.0% of clinicians in CMU still insisted on their previous choice.

For the question of using DAs and doing SDM in their practice, half of the clinicians in DMU wanted to participate in SDM before seeing the DA, and this number increased after seeing the DA. Compared with the CMU clinicians, more clinicians in DMU wanted to deliver the DA given the other tasks during a patient's visit whether they knew SDM or not.

Although all these young Chinese clinicians were unaware of SDM, the clinicians who wanted to use the DA thought that DA might be proper for them to deliver in the process of SDM before seeing the DA (55.9% in DMU, 31.0% in CMU). Interestingly, the clinicians in both hospitals thought DAs more difficult to use when they saw the DA on Statin Choice (2.2% vs. 15.1% in DMU, 10.0% vs. 16.0% in CMU). Despite this concern, as shown in [Table 1](#), it demonstrated that 20.4% of DMU clinicians and 27.0% of CMU clinicians thought the DA easier after seeing it. Notably, fewer clinicians rejected to deliver the DA in their future practice after seeing the DA or sample videos than they did before seeing the DA (31.2% vs. 19.4% in DMU and 51.0% vs. 42.0% in CMU). It suggested that the DA on Statin Choice was acceptable by most of the Chinese clinicians.

When analyzing the characteristics of the clinicians including age, gender, history of studying medicine, workplace, and specialty in relation to change in questionnaire answers with liner regression analysis,

there was no relationship between the basic characteristics of the clinicians and the change in answers (all  $P > 0.05$ ).

As shown in Fig. 1, when assessing barriers to perform SDM, we found that of the clinicians who rejected using the DA before seeing the DA, 56.1% ( $n = 46$ ) rejected because they had no knowledge of DAs. Besides the reason of the DA factor, 34.1% ( $n = 28$ ) gave reasons concerning themselves, such as “I do not understand what SDM is or looks like,” “it is too difficult for me,” “is it important for us to do in our practice?” etc. These reasons are similar to the problem “I do not know about DAs.” In addition, some clinicians referred to time-related reasons, such as “I have to see 70 patients in half of a clinic day. I make decisions by my feeling instead of thinking,” “I am too busy to perform SDM,” “the process is complicated. It wastes time,” “I do not think I have enough time to do SDM,” etc. Only a few clinicians gave reasons about the type of decision making, such as “I make treatment decisions based on my experience.” It suggested that the main barrier for these clinicians is that they had no idea about SDM or DA. A physician even said, “If I can understand what a DA is and how to do it, maybe I will do it for my patients.”

After seeing the DA, the reasons changed. Only few clinicians do not clearly understand what SDM is, which means that most of these clinicians have sufficient knowledge about SDM or DAs. However, 45.0% ( $n = 27$ ) gave reasons concerning time. It may be the biggest problem in performing SDM in China today. The concern about patients increased from 10.0% ( $n = 6$ ) to 48.3% ( $n = 29$ ). These clinicians gave reasons such as “it depends on the patient's condition,” “it depends on patients such as their education, region, culture, risk, etc.,” “it is difficult for patients to understand,” “after giving too many messages, patients will have a psychological burden and it will affect the clinicians' treatment,” “some patients have poor understanding, low adherence, and they only want short-term effectiveness,” “it depends on how much patients understand the process of SDM,” “I do not think patients want to spend the time to listen to me. It is too specific,” “it is difficult for patients to understand,” etc. At the same time, more clinicians mentioned reasons regarding the type of decision making such as “most patients want their clinicians to decide for them,” “some patients do not want to be engaged in SDM,” “some patients want to decide by themselves,” “in my practice, I give medical information. Then patients make a decision,” “it is better that clinicians make

decisions instead of patients doing it by themselves,” etc. At the mention of the DA, a few clinicians described it as “too complicated to use,” or stated that “I do not understand the DA very well, which causes me more problems,” and “DAs should be modified and may be feasible in the future.” Further, the other 13.3% ( $n = 8$ ) refer to China's status, such as “SDM is our final dream of medical reform but I do not think it is feasible in China now,” “It is out of reality in China,” and “Poor-education status in China.” Notably, 18.3% ( $n = 11$ ) of these Chinese clinicians gave more than one reason in the second survey.

## Discussion

In this survey of preferences and attitudes related to SDM on Statin Choice among a group of first-year or second-year Chinese residents, we found few differences by physician age, gender, study time, and specialty. No clinician in this survey knew what SDM was or had experience of SDM before the survey. However, most Chinese resident physicians are more likely to participate in SDM, unlike older physicians, in their future practice. Thus, the attitude of these young clinicians on SDM is of consequence for implementing SDM in China. Despite all this, more number of young Chinese clinicians tend to consider their patients' opinions and want to perform SDM in their future practice. Unfortunately, in their present practice, half of them still make medical decisions on behalf of their patients.

The cohort enrolled in this survey is a small number of young Chinese clinicians. They are all working in large hospitals located in big cities. On the one hand, compared to those working in small hospitals or rural areas, they are much busier. On a clinic day, they have to deal with 100 patients. On the other hand, most Chinese patients lack knowledge about their disease and treatment. During the SDM process in a sample video, the physician spent more time on patient education and sharing information. The physician had to explain basic medical knowledge such as what a heart attack is, where the heart is, etc. The SDM process usually takes more than half an hour. Still, more clinicians prefer to choose SDM after seeing that video. In China today, the patient-physician relationship is becoming a trust crisis. Evidence suggests that SDM is helpful to increase patients' satisfaction and trust in clinicians.<sup>7,8</sup> Hence, the present situation in China might be a cause to push these young clinicians to desire SDM.

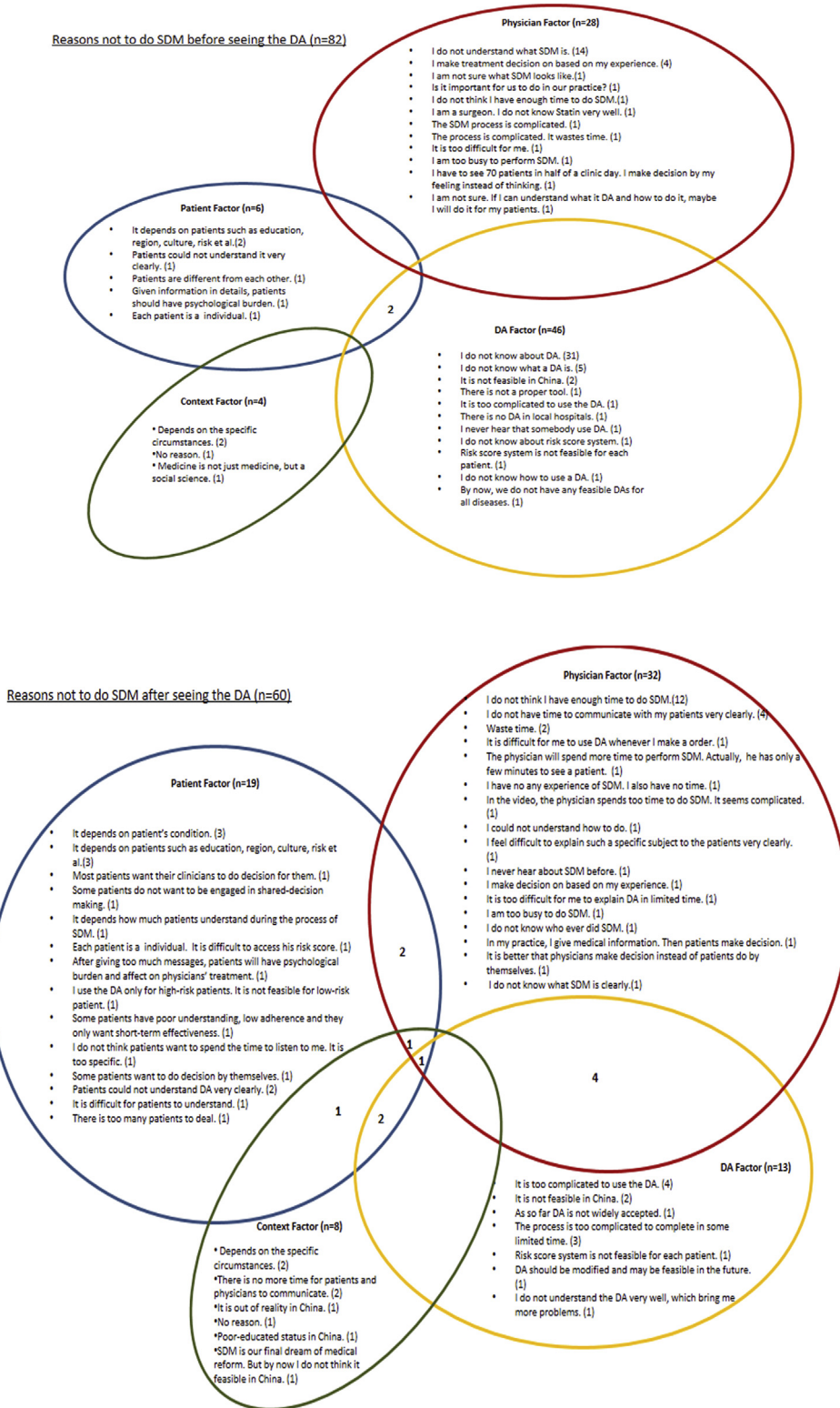


Fig. 1. The barriers to perform SDM in their practice experiences for Chinese clinicians. SDM: shared decision making.

In this survey, we used the DA on Statin Choice modified by Montori et al.<sup>5</sup> Our previous study demonstrated it to be feasible in Chinese patients.<sup>8</sup> Regarding Chinese clinicians' views, half of them think it is feasible, and more clinicians tend to prefer SDM after seeing the DA. Of the clinicians who prefer SDM, 20.0% think it difficult or very difficult to use it in their practice after seeing the DA, which is more than that before seeing the DA. Likewise, 21.6% of the clinicians who rejected the DA reasoned that it is complicated after seeing the DA. It is suggested that the DA in Chinese be modified based on another pilot study with Chinese patients, in future.

Current trends favor SDM, and this is reflected in the number of respondents in our study who reported that they want to provide the other DA in their visit. Although we do not know the percentage of Chinese patients who desire to participate in SDM presently, the data from other countries,<sup>3,9</sup> especially from Asian countries,<sup>10,11</sup> showed that between 40 and 90% of patients with different diseases prefer to have an active or collaborative role in their treatment decision, and this preference varies by age and level of education.<sup>12</sup> Incongruity between the physician's perception of the patient's desired level of involvement in the treatment decision and that actually preferred by the patient may have dramatic consequences.<sup>13</sup>

In our study, we found that the barriers to implement SDM for these Chinese clinicians are similar to that in other countries.<sup>14–16</sup> These problems include factors related to physicians, patients, tools, and other factors. It suggested that the main barrier for clinicians in China is lack of knowledge of SDM, which could be improved by education and evaluation. Obviously, if the clinicians understand what SDM is and how to practice it, fewer clinicians will reject SDM in their future practice. However, time is a big problem. Not only in clinicians who say no to SDM but also in clinicians who think DA to be difficult or very difficult, more than half of respondents mentioned that they do not have enough time to share information or explain the DA in their practice. Although the clinicians in this survey all come from large hospitals located in big cities, it is popular in China for a physician to treat more patients than they are able to.<sup>17</sup> Like a physician who rejected SDM said, "I have to see 70 patients in half of a clinic day. I make decisions by my feeling instead of thinking." In the sample video, the physician does spend about 30 minutes to perform SDM on Statin Choice. In our other ongoing study, we found that the total time of SDM decreased to 15 minutes if patients are given medical education and clinicians have more experience on

SDM. It is heartening that together we have made this happen. It should be possible to solve the problem of time after these improvements. Further, besides these barriers, a few clinicians still think that poor education in Chinese, Chinese medical policies, and medical status are the problems.

In order to help clinicians understand the DA and SDM, all clinicians were organized into groups. Each group included a few clinicians. With the DA and sample videos on Statin Choice, the clinicians discussed with the investigators if they had questions about the DA and SDM. It is true that some clinicians can gain knowledge about SDM well through this approach. However, there is possibility of bias if some clinicians do the survey in a shared room.

The results of our study provide insight to clinicians' preferences on SDM and the barriers to perform SDM in China. Our study is limited in that we present a survey conducted only in two teaching hospitals and all responders are young and lack practical experience. In actual practice, physician behavior and attitude are influenced by a host of complex factors including the emotional, social, and personal context of the patient, the complexity and urgency of the decision at hand, the patient's desire to participate in the decision, and the amount of information needed by the patient to feel sufficiently informed to make a treatment decision. We should, therefore, conduct a further survey on Chinese physician's preferences in a large number of hospitals.

## Conclusion

In conclusion, most of these young Chinese clinicians want to participate in SDM in their practice after knowing about DAs. The main barriers to practice SDM are lack of experience, lack of time, and concerns about the patient's attitude to SDM.

## Conflicts of interest

The authors declare that they have no conflict of interest.

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.cdtm.2019.05.001>.

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