

## **Accuracy of Medical Terminologies Translated from English into Arabic: The Case of Audiovisual Shows**

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**Abstract:** The global emergence of audiovisual (AV) shows has increased the demand for translation. The problem regarding AV materials (AVMs) in the medical genre is that medical English consists of a large number of specialised medical terminologies, which can cause a challenge for Arabic translators/subtitlers, especially in terms of translation accuracy. Although there are several references to the issues of translating specialised terminologies in AV translation studies, no light has been shed on the accuracy of medical terminologies translated from English to Arabic. This study investigates the accuracy of translated medical terminologies in selected AVMs and the factors affecting the accuracy levels in the AV setting. This research adopts a mixed approach of qualitative and quantitative analysis methods to assess the accuracy of 100 medical terminologies translated into Arabic. An eclectic model of analysis based on Nababan, Nuraeni and Sumardionos' (2012) accuracy and readability aspects and Díaz-Cintas's (2010) space constraints was used to reach the aims of the study. The results revealed that the average accuracy for all 100 terminologies scored 2.6 out of 3, falling within the accuracy range of 2.4–3 based on Nababan et al.'s (2012) accuracy score calculation (NASC). The aspect of accuracy in the AV setting was highly affected by other aspects—readability and space constraints—and both aspects were related to each other. Thus, the accuracy of translated medical terminologies will gain another notion matching the grounds of the AV setting, which is a hosting one. Accuracy here is affected by space constraints and the readability level of the audience.

**Keywords:** accuracy, audiovisual, medical terminologies, readability, space constraints

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To proceed with the production and publishing process, this problem must be fully resolved.

### **1. Introduction**

Over the past decade, several audiovisual (AV) streaming platforms have emerged as entertainment media. These platforms allow the global audience to choose from

various genres, including the medical genre. The emergence of these shows has increased the requirement for accurate translations into the target language.

The issue concerning AV materials (AVMs) in the medical genre is that medical English consists of numerous specialised medical terminologies, which can cause a challenge for Arabic translators/subtitlers, especially in terms of translation accuracy. There are several references to the issue of translating specialised terminologies in AV translation (AVT) studies. The professional translator/subtitler Mateo (1993) highlighted the problem of translating medical terminologies. Matamala (2009) supported this opinion and listed several challenges about translating medical terminologies in an AV show; some of these challenges are represented by overcoming ambiguity, finding an equivalent and dealing with obscure equivalents. Among these previous AVT studies is Espasa's (2004: 193) article, where he emphasised the problem of translating specialised terminologies to the audience and stated that translation 'is relative to the audience for which the translation is designed'.

Specialised terminologies of all fields, in general, and medical terminologies, in particular, require high levels of accuracy in translation. Apparently, the presence of these terminologies in entertaining AVMs is considered unusual and thus requires taking into account that the translation is mainly directed to an audience of all ages, social classes and educational backgrounds.

Furthermore, it is important to consider that AVMs and AVTs are audience-oriented (Pavesi 2005). Therefore, the audience's readability level, along with the space constraints which govern the length of sentences/subtitles, is important. Sentence length is important because it can increase or decrease the readability level; thus, the two aspects, readability and space constraints, are connected. Therefore, translators/subtitlers face many aspects which contribute to producing accurate translations/subtitles containing translated medical terminologies. Hence, the objective of this study was to investigate the accuracy of translated medical terminologies in AVMs due to their orientation towards the target audience and to assess if any factors affect the accuracy levels in the AV setting.

Using the equivalents found in English–Arabic medical dictionaries is highly accurate when directed to readers specialised in the medical setting. However, the entertainment setting of AVMs requires a different notion and understanding of the accuracy aspect. The communicative function of translated medical terminologies has been constantly lagging because of the assumption that medical terminologies are only translated for readers in the medical field. This is further evidenced by the fact that the type of target audience and their level of professional and educational backgrounds usually go unheeded in the translation process. Therefore, the present study aims at answering the following questions:

1. How accurate are the translations of medical terminologies in the selected AVMs?
2. Are there any factors which affect the accuracy levels in the AV setting?

To answer these research questions, procedures which adopted the designed model of analysis were used to analyse the data under investigation. The present study was limited to the accuracy level of 100 medical terminologies translated from English to Arabic. The study adopted the analysis of terminologies only, that is, on the word level. In other words, the present study focused on translated medical terminologies only to assess the level of accuracy. The sentence structure and stylistics of the scripts were not considered.

## **2. Translation ‘accuracy’ and the medical genre**

Before being adopted in translation studies and research, the notion of accuracy was used within the field of hard science because this domain is in constant demand for standard rules and exactness. Many domains besides translation, such as information systems, technology and medicine physics, resort to the accuracy notion in their everyday practice.

Several researchers in the field of translation studies have examined the idea of accuracy. Larson (1984) explained that accuracy, naturalness and clearness are the three main features used to evaluate translation. However, a critical semantic comparison between the original text and its translation can be used to check for accurate meaning. Shuttleworth and Cowie (1997) defined the idea of accuracy as a term used in translation assessment to measure the correspondence level between the source text and the target text.

Rahimi (2004) defined accuracy as explaining the source text in a suitable and detailed manner while transmitting the meaning of the source text exactly. According to Rahimi, inaccurate translation occurs if pieces of information are inadvertently deleted or when adding information which is not particularly mentioned in the original text. According to Farahani (2005), the solution to determine the accuracy level of the translation is to identify keywords in the source text, find their equivalents in the target language and compare the two sets of vocabulary to determine how close they are. Therefore, according to the accuracy criterion, the translation is considered acceptable.

From these definitions, it can be concluded that the idea of accuracy has been associated with the idea of equivalence between the original text and its translated version. Defining the notion of *equivalence* has been an unsettled debate among researchers and theorists attempting to formulate definitions, such as Jakobson (1959), House (1997) and Baker (2011).

Unlike Arabic, acronyms and abbreviations are widely found in English scientific texts, most notably in medical texts, such as WBC (white blood cell) and HGB (haemoglobin).

Accuracy, objectivity and precision are essential characteristics of scientific and medical language, and they are considered while translating in medical and scientific settings. Haddad (cited in Yaseen 2013) summarised this matter by stating that objectivity and precision are of great value in scientific language. The translation process is certainly not a simple task, especially when the two languages

(English and Arabic) are completely different in many aspects, such as alphabet, structure and culture.

### **3. Audiovisual translation**

Audiovisual translation (AVT) gains significance in satisfying the increasing demand and socio-cultural needs of globalisation and localisation. Giri (2018) emphasised that AVT is highly welcomed in the entertainment industry and the business world of trading companies. According to Díaz-Cintas, subtitles are affected by three factors namely: correspondence between sound, text, and image. Firstly, it is crucial for the transmitted translated message to synchronize with the source text dialogue; subtitles should not collide with the character's actions on the screen. Secondly, changing the dialogue from spoken to written can often cause the translator to delete lexical units in the translation process. Thirdly, the subtitle text should match the screen's width since the screen's actual size is limited, considering the ability to read the subtitle text clearly (Díaz-Cintas 2009, cited in Mehdi and Mohammed 2022: 6389).

Individuals' reading and speaking speeds are not the same. They speak faster and read slower. There is a specific space for just about 30 or 40 characters on the screen; this is called space constraints or restrictions. Furthermore, technical constraints have another rule to govern this problem by providing a space for a maximum of only two lines for the subtitle at the bottom of the screen. Gottlieb (1992) defined time and space constraints by other terms when he stated that the translator is restricted by what he calls textual (qualitative) constraints and formal (quantitative) constraints. The former refers to those enforced on the subtitles by the visual context of AVMs, whereas the latter refers to time and space factors (a maximum of 2 lines and 35 characters). According to Reiss (1971), only 20 percent of a screen is allowed for subtitles, which equals a maximum of 70 signs and six seconds. Space and time were considered constraints restricting subtitles by Neves (2004). The loss in subtitles is acceptable and deemed a reduction, according to Chiaro (2012), who suggested that the subtitle can be reduced if the original meaning of the dialogue is neither affected nor changed. In the AV setting, Mehdi and Mohammed (2023: 6389) stated that "It is essential for the viewers to feel comfortable while reading the subtitles without realizing that they are making an effort to follow the subtitles at the bottom of the screen".

### **4. Data criteria and methodology**

#### **4.1 Qualitative data**

The data of this study comprise 100 medical terminologies, all of which are thoroughly analysed. However, considering the paper's word limit, the analysis presented here consists of seven groups, with an example of each. The data consist of medical terms, abbreviations, collocations and compound words. The criteria for choosing the terminologies are to provide a detailed example of different results.

The Netflix platform is the world's most authoritative source for AVMs (Herr et al. 2007); moreover, Wayne (2018) considered Netflix the most popular video streaming platform around the globe. Netflix requires professional translators and

subtitling experts who hold a Hermes\* certificate to provide the audience with the best experience possible (Netflix TechBlog 2017). For this, the terminologies are selected from the highest-rating episodes of five of the top-rated medical shows, specifically from the Internet Movie Database (IMDb).

In this study, data were collected by reviewing each show and episode to extract the English terminologies along with their Arabic translations by carefully observing the subtitles. Furthermore, an extra step was taken to review the written scripts of each chosen episode to identify and extract the terminologies. This ensured the correctness and validity of each chosen terminology and verified the match between the original and translated terminologies.

Regarding the details of the data, five AV shows (The Good Doctor, The Resident, Grey's Anatomy, New Amsterdam and Code Black) are included. The utilized platform is Netflix, the show's rating varies from 7.6 to 8.1 out of 10, while the selected episode's rating varies from 8.3 to 9.4 out of 10. The total of data is 100.

#### **4.2 Quantitative data**

The quantitative data consisted of the numerical results and percentages extracted from the survey in this study. The survey was conducted from 30 April to 30 May 2022 using the Google Forms platform; the survey was published and provided to the participants for a period of only one month. Although the survey was distributed to a total of 60 participants, only 47 (19 women, 28 men) responded. Ethical approval was obtained before distributing the questionnaire by email, WhatsApp and Telegram.

The participants' years of experience varied from 2 to 18 years. While most participants were in the academic field of translation studies, others were authorised translators who were actively working in the translation field. Both groups were chosen as survey participants, as they were specialists with experience in translation, and were asked to assess the accuracy of 100 medical terminologies as specialists and as readers. The survey was detailed in three sections. The first section included the participant information, and the second section contained multiple choice questions, which included the data with three options (*accurate*, *less accurate* and *inaccurate*). The last section was dedicated to the participants' comments, providing them with a space to share their opinions and thoughts. This survey was used to support the quantitative approach of the study. It was conducted to match the same criteria as the first part of the proposed model and to move away from the subjective nature of the model.

#### **4.3 Model of analysis**

The proposed model consisted of two eclectic models. The first introduces two aspects of the Nababan et al. (2012) model for translation quality assessment (TQA)—*accuracy* and *readability*—for analysing the data. The second consists of

Díaz-Cintas's (2010) space constraints to determine the number of characters in subtitles.

The first part of the eclectic model proposed for this study is the Nababan et al. (2012) TQA model. According to Nababan et al. (2012), the best translation is one that has high levels of accuracy, readability and acceptability. These combined aspects will result in high-quality translation.

Accuracy holds the highest value, followed by readability and acceptability. When translating a text, the translator must pay attention to the aspect of accuracy to achieve a high-quality translation. Thus, the aspect of accuracy was examined and highlighted, followed by the aspect of readability, which was important to be included in the analysis because AVT is audience-oriented (Pavesi 2005). The aspect of readability was investigated as readers reading subtitles which included the translated medical terminologies. Although acceptability might appear close to readability, it was not adopted in the analysis because acceptability reflects the target culture, norms and linguistic rules (Nababan et al. 2012), and culture was not our concern as it would not serve the aim of the present study.

In terms of the TQA model, Larson (1998) was the one who proposed three aspects of assessment (accuracy, clarity and naturalness). His model did not cover the aspect of readability, which is important in AVMs because subtitles are audience-oriented (Pavesi 2005). The Nababan et al. (2012) TQA model is the only model with both aspects of accuracy and readability to be applied to subtitles. Moreover, it deals with the aspect of accuracy by giving it the highest value. It is also one of the most recently used TQA models. Furthermore, Nababan et al. updated this model over the years, and the latest version is described in the paper by Nababan et al. (2012). Finally, this model is used by many researchers in modern translation studies to investigate the accuracy of translating AVMs, such as Siahaan et al. (2023) and Syah et al. (2023).

The term *accuracy* refers to the preciseness of understanding the source language message and rendering it as precisely as possible into the target language (Nababan et al. 2012). Three instruments to assess the aspect of accuracy are called Nababan et al.'s accuracy rating instruments (NARIs); each instrument is given a specific score and definition.

According to Nababan et al. (2012), *readability* refers to the average sentence length, the grammatical complexity of the language and the number of new words. Many factors contribute to the low readability level, which causes understanding difficulties for readers, especially non-bilingual readers. These factors include ambiguous words and sentences, incomplete sentences, complicated sentence constructions and excessive use of punctuation. Three instruments to assess the aspect of readability are called Nababan et al.'s readability rating instruments (NRRIs), each of which is given a specific score. It is considered accurate and readable when the score ranges between 2.4 and 3, less accurate and readable if it is between 1.7 and 2.3, and inaccurate and unreadable when it is between 1 and 1.6.

Because the study was conducted in the AV setting, the second part of the model used the space constraints proposed by Díaz-Cintas (2010) to calculate the number of characters in each line of the subtitle. It is essential to link the aspect of

readability with the number of characters in each line. Díaz-Cintas's space constraints align with Nababan et al.'s readability definition because both deal with sentence length and how it affects the readability level. Therefore, space constraints cannot be neglected in assessing the aspect of readability.

Subtitles are usually located horizontally at the lower half of the screen and appear synchronously with AVMS. Synchronisation can be performed by translators/subtitlers or technicians responsible for the subtitling programme (Díaz-Cintas 2010).

Subtitles consist of two lines, each of which includes 35 characters, and the maximum for both lines is 70 characters (Díaz-Cintas 2010). The characters are defined as 'basic symbols used to write or print a language. For example, the characters used by the English language consist of the letters of the alphabet, numerals, punctuation marks, and a variety of symbols' (The Linux Information Project 2007). The measurements for lines and characters are called *space constraints* (Figure 1).



Figure 1. Clarification of space constraints

The figure clarifies the subtitle's number of lines, the number of characters for each line and the total number of characters for both lines. The total number of characters (67) does not break the 70-character space constraints. Characters can be measured manually or by using an automatic character counter (Figure 2).



Figure 2. Automatic character counter

Exceeding the permitted character limit breaks space constraints, leading to long subtitles, eventually affecting the readability levels of readers/audience. Therefore, Díaz-Cintas's space constraints were adopted in this model to overrun the subjective nature of NRRIs and to measure the subtitles' constraints to support readability ratings.

## 5. Results

The 100 medical terminologies analysed by both methods were listed in seven main groups based on accuracy and readability scores. One example from each group is presented below.

The show's name is The Good Doctor (season 2-Episode 10, Time: 00:04:21), the ST is That's over 30 minutes of Brain cardiac hypoxia, and the TT is هكذا يزيد عن 30 دقيقة من نقص الاوكسجين بالمخ والقلب نقص، and the Dictionary Meaning is نقص التأكسج في المخ والقلب. The accuracy and readability scores are 3.

### 5.1 Group 1: Accuracy (3) and readability (3)

Table 1. Accuracy (3) and readability (3) scores

No.	Timing	Terminology	AVT	Dictionary Translation	Accuracy	Score	Readability	Score	Characters' Number
1	00:02:07	Irresponsive	فاقد الوعي	=	Accurate	3	Readable	3	34
2	00:02:32	Chest pain	الأم الصدر	ألم في الصدر	Accurate	3	Readable	3	25
3	00:02:48	Pulse	النبض	=	Accurate	3	Readable	3	20
4	00:03:31	Viral pneumonia	التهاب رئوي فيروسي	=	Accurate	3	Readable	3	34
5	00:03:51	Thrombolysis	حل الخثرة	=	Accurate	3	Readable	3	28
6	00:04:21	Brain cardiac hypoxia	نقص الأوكسجين بالمخ والقلب	نقص التأكسج في المخ والقلب	Accurate	3	Readable	3	61
7	00:04:50	Infection	العدوى	=	Accurate	3	Readable	3	27
8	00:05:16	Germ	الجرثيم	=	Accurate	3	Readable	3	30
9	00:06:23	Leukemia	سرطان الدم	ابيضاض الدم	Accurate	3	Readable	3	19
10	00:07:09	Radiation	الاشعة	=	Accurate	3	Readable	3	32
11	00:07:11	Blockage	انسداد الأوعية	=	Accurate	3	Readable	3	62
12	00:07:12	White blood cells	كرات الدم البيضاء	خلايا الدم البيضاء	Accurate	3	Readable	3	62
13	00:07:40	CDC	مركز مكافحة الأمراض	=	Accurate	3	Readable	3	48
14	00:08:08	Stomach pain	الأم البطن	ألم المعدة	Accurate	3	Readable	3	29
15	00:09:26	Transplant	عملية الزرع	=	Accurate	3	Readable	3	24
16	00:11:04	Antivirals	مضادات الفيروسات	=	Accurate	3	Readable	3	41
17	00:13:05	Immune system	جهاز مناعي	=	Accurate	3	Readable	3	26
18	00:13:09	Donor	متبرع	=	Accurate	3	Readable	3	26
19	00:16:17	respiratory virus	فيروس تنفسي	=	Accurate	3	Readable	3	34
20	00:19:29	Bowel	الأمعاء	=	Accurate	3	Readable	3	51
21	00:19:46	Inhaler	جهاز الاستنشاق	=	Accurate	3	Readable	3	22
22	00:20:53	High dose	جرعة كبيرة	=	Accurate	3	Readable	3	45
23	00:25:37	Symptoms	اعراض	=	Accurate	3	Readable	3	68
24	00:28:02	Marrow rejection	رفض الجسم للتحا	=	Accurate	3	Readable	3	24
25	00:29:00	DNR	توصية عدم محاولة الإحياء	الأمر بعدم الإنعاش	Accurate	3	Readable	3	35
26	00:32:33	Insulin	انسولين	=	Accurate	3	Readable	3	40



(UMD), the accurate medical translation is *نقص التأكسج في المخ والقلب*. The words *او كسجين* and *تأكسج* must be analysed. The translator/subtitler's choice of the word *او كسجين* instead of *تأكسج* does not interact with the accuracy level because both refer to the same process.

In investigating the accuracy level of the translation, the translation of *brain cardiac hypoxia* is considered accurate; thus, it gets a score of 3 based on the qualitative parameters of NRRIs. The translation of *brain cardiac hypoxia* is *نقص الاوكسجين بالمخ والقلب*. The meaning is transferred accurately from the source text to the target text with reduction, and no distortion of meaning is detected in the translation. Therefore, the translation is considered accurate based on NARIs.

A total of 57.40 percent (27 of the 47 participants) rated the translation of *brain cardiac hypoxia* as accurate, which supports the results of NARIs, because of the appropriate choice of translation. The data also show that 36.20 percent (17 of the 47 participants) rated the translation as less accurate, while only 6.40 percent (6 participants) rated the translation as inaccurate.

Because the context here is AVMs and subtitles are directed to the audience, the aspect of readability is highly involved in the analysis. The translator's choice of the word *او كسجين* instead of *تأكسج* is in favour of the audience because the word *او كسجين* is considered more readable than the word *تأكسج*. According to NRRIs, the translation is found to be readable and given a score of 3 because it can be easily read and understood by the readers. Using the simplest form of terminology *او كسجين* is the best way to match the context of medical AV shows because the main purpose is to entertain the audience and then to educate them. Therefore, the translation of *brain cardiac hypoxia* as *نقص الاوكسجين بالمخ والقلب* is considered readable.

Based on the space constraints represented by 2 lines and 70 signs or characters, as suggested by Díaz-Cintas (2010), the subtitle *هكذا يزيد عن 30 دقيقة من نقص الاوكسجين بالمخ والقلب* consists of 51 characters or signs, according to Reiss (1971). This illustrates that the translator/subtitler did not just stay within the space constraints limit, he/she succeeded in achieving high levels of readability.

## 5.2 Group 2: Accuracy (2) and readability (3)

Table 2. Accuracy (2) and readability (3) scores

No.	Timing	Terminology	AVT	Dictionary Translation	Accuracy	Score	Readability	Score	Characters' Number
1	00:00:58	ER	قسم الطوارئ	غرفة الطوارئ / غرفة الإسعاف	Less accurate	2	Readable	3	35
2	00:02:33	Shortness of breath	المهات	ضيق في التنفس	Less accurate	2	Readable	3	25
3	00:02:34	Low grade fever	حمى بسيطة	حمى منخفضة الدرجة	Less accurate	2	Readable	3	15
4	00:06:29	Marrow donation	التبرع بالناعج	التبرع بالخلايا الجذعية للناعج الحظي والتم إمتان القلب والرئتين	Less accurate	2	Readable	3	43
5	00:10:30	CPR	إمتان القلب	إمتان القلب والرئتين	Less accurate	2	Readable	3	27
6	00:10:52	Soft quarantine	حجر صحي غير رسمي	حجر صحي مخفف	Less accurate	2	Readable	3	27
7	00:13:35	KUB X-ray	اشعة سينية على البطن	التصوير بالأشعة السينية للكلىتين والمثانة والمغزى المعطاز المعطاز	Less accurate	2	Readable	3	53
8	00:19:28	Endoscope	المنظار	المنظار المعطاز	Less accurate	2	Readable	3	51
9	00:26:06	PICU	عناية الأطفال المركزة	وحدة العناية المشددة للأطفال	Less accurate	2	Readable	3	70
10	00:33:31	Neptune machine	جهاز ماص	جهاز نبتون	Less accurate	2	Readable	3	16
11	00:38:00	hypoglycemia	انخفاض السكر	إنخفاض السكر بالدم	Less accurate	2	Readable	3	28
12	00:27:26	Ventilator	جهاز التنفس	جهاز التنفس الاصطناعي المضط	Less accurate	2	Readable	3	33
13	00:34:12	Compression	الضغط	الامتص	Less accurate	2	Readable	3	40
14	00:30:03	Ultrasound	جهاز الموجات فوق الصوتية	اشعة الموجات فوق الصوتية	Less accurate	2	Readable	3	26
15	00:25:23	Virologists	علماء الفيروسات	فوق الصوتية المختصاصين الفيروسات	Less accurate	2	Readable	3	86

A total of 15 percent (15 examples) of the data belonged to this group. The translations of medical terminologies were less accurate and scored 2 out of 3, while they were readable and achieved 3 out of 3. Here, 14 of the 15 examples were restricted to the number of characters (less than 70), while only one example exceeded the number. The following example clarifies this.

Here is the details of Marrow Donation example: the show's name is The Good Doctor (season 2-Episode 10, Time: 00:06:29), the ST is It looks like your dad is good to go with the marrow donation, and the TT is يبدو انه يمكن لأبيك المضي في التبرع بالنخاع

, and the Dictionary Meaning is التبرع بالخلايا الجذعية للنخاع العظمي او الشوكي والدم. The accuracy score is 3, while readability score is 3.

Before analysing medical collocation *marrow donation*, the term *marrow* must be thoroughly defined from a scientific perspective because it certainly holds two different indications. The first indication is *bone marrow* نخاع العظم which is defined as one of the largest organs in the body (Lund 2000), as shown in Figure 3 which illustrates a cross-section of the bone marrow for further clarification.

The second indication is *spinal cord marrow* نخاع الحبل الشوكي, which is defined according to the Farlex Partner Medical Dictionary (2012) as the downward continuation of the brainstem which lies within a canal in the spine. Figure 4 clarifies the second meaning of *spinal cord marrow*.

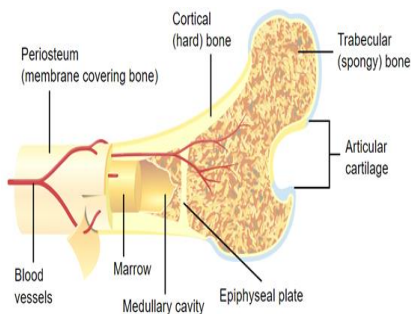


Figure 3. Cross-section of the bone marrow

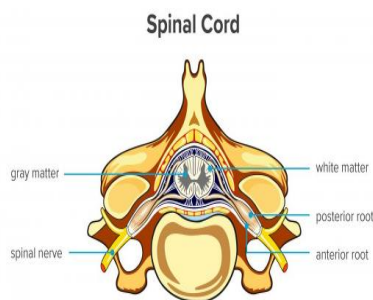


Figure 4. Cross-section of the spinal cord

The two marrows do not only differ in their functions but also their location and anatomy. The type of marrow should be specified to accurately translate the word *marrow* from a linguistic perspective.

When the medical collocation *marrow donation* is checked in specialised medical dictionaries and glossaries, particularly the UMD, the accurate medical translation is مِدو الـ بيـكـواو الـ شـديـظـمـعـالـ عـاـخـنـذـعـية لـجـالـ اـيـلاـخـلاـبـ عـرـبـالـتـ (Donating stem cells for bone or spinal marrow and blood). The translation appears to be descriptive and detailed.

According to the qualitative parameters of NARIs, the translation of *marrow donation* is less accurate; thus, it scored 2 out of 3. The accurate translation of marrow donation is التبرع بالخلايا الجذعية للنخاع العظمي او الشوكي والدم and is not just التبرع بالنخاع (*marrow donation*). Because the translator/subtitler omitted the part الجذعية للنخاع العظمي او الشوكي والدم (*stem of bone or spinal marrow and blood*), the translation lost a major part of its meaning. This case shows a distortion of meaning because of the elimination of existing parts of the terminology. Therefore, the translation was considered less accurate based on NARIs.

The survey results did not match the NARI results. The data revealed that a high percentage of participants (74.50%; 35 participants) considered the translation of *marrow donation* as accurate, and 21.30% (10 participants) chose to rate the translation as less accurate. Only a small percentage of 4.20 percent (2 participants) rated the translation as inaccurate.

Based on NRRIs, the translation is considered readable and given a score of 3. The translation التبرع بالنخاع (*marrow donation*) is considered easy for most of the audience to read and understand. If the meaning is found in the dictionary التبرع بالخلايا الجذعية للنخاع العظمي او الشوكي والدم (*Donating stem cells for bone or spinal marrow and blood*) was used; it might be too long for the audience to read in a few seconds along with the other content in the subtitle. Furthermore, the dictionary's translation is very lengthy for a subtitle; therefore, it breaks the space constraints suggested by Díaz-Cintas (2010). The translation appears simple and easy to read by the audience and serves the purpose of entertainment because the context here is AV. Therefore, the translation is considered readable.

With regard to space constraints, Díaz-Cintas (2010) suggested that the subtitles should be constructed of a maximum of 2 lines and 70 characters for both lines. On counting the characters of the subtitle يبدو انه يمكن لأبيك المضي في التبرع بالنخاع, the calculations show that it consists of 43 characters. In comparison, if the translator/subtitler chose to use the dictionary's meaning التبرع بالخلايا الجذعية للنخاع العظمي او الشوكي والدم (*it seems your dad can go ahead with the marrow donation*) in the subtitle, the number of characters will be 82, which will certainly break the space constraints suggested by Díaz-Cintas (2010). Accordingly, long sentences decrease the readability level. Therefore, the translator/subtitler made the right choice by not crossing the permitted limit, thus increasing the readability level for readers/audience.

### 5.3 Group 3: Accuracy (1) and readability (3)

Table 3. Accuracy (1) and readability (3) scores

No.	Timing	Terminology	AVT	Dictionary Translation	Accuracy	Score	Readability	Score	Characters' Number
1	00:02:53	pulmonary embolism	الانسداد الرئوي	الانصمام الرئوي	Inaccurate	1	Readable	3	39
2	00:03:03	Rhythm	نضض	نظم	Inaccurate	1	Readable	3	8
3	00:06:59	Heart attack	ازمة قلبية	نوبة قلبية	Inaccurate	1	Readable	3	28
4	00:08:12	Pepto	علاج الحموضة	بنتر بزمو/ بسموت سيساليسيلات	Inaccurate	1	Readable	3	45
5	00:13:33	CT	اشعة مقطعية	التصوير المقطعي المحوسب/ المفراين الماسح	Inaccurate	1	Readable	3	28
6	00:13:01	Stroke	سكتة دماغية	جلطة	Inaccurate	1	Readable	3	27

As shown in Table 3, the translation of only 6 medical terminologies (6%) was inaccurate and scored 1 out of 3 according to the NASC scale. Nevertheless, the translations were readable and within the character limit, as they did not exceed 70 characters. An example is as follows.

Regarding the details and Results of *Pulmonary Embolism*, the show's name is The Good Doctor (season 2-Episode 10, Time: 00: 02:53), the ST is *I'll teach you how to deal with pulmonary embolism*, and the TT is ساعرفك كيفية التعامل مع الانسداد الرئوي, and the Dictionary Meaning is الانصمام الرئوي. The accuracy score is 1, while readability score is 3.

According to the Farlex Partner Medical Dictionary (2012), *pulmonary embolism* in the source text is defined as 'an obstruction of a blood vessel in the lungs, usually due to a blood clot, which blocks a coronary artery', while الانسداد الرئوي obstructive pulmonary disease was defined by Qaseem et al. (2011: 115) as 'a slowly progressive disease involving the airways or pulmonary parenchyma (or both) that results in airflow obstruction'. Despite the differences between the two diseases, both cause blockage, but they still differ in meaning. Therefore, the translation cannot be considered accurate from a linguistic and medical perspective.

According to specialised medical dictionaries and glossaries, specifically the UMD, the accurate translation of *pulmonary embolism* is الانصمام الرئوي and is not الانسداد الرئوي (*obstructive pulmonary*). The disease name الانصمام الرئوي is translated into *obstructive pulmonary disease*, which is different from *pulmonary embolism*.

Based on NARIs, the translation of *pulmonary embolism* into الانسداد الرئوي is considered completely inaccurate and is given a score of 1 out of 3. The meaning is not conveyed accurately at all.

The participants disagreed with the NARI rating. The responses showed that 35 participants, who represented almost three-quarters (74.50%), rated the translation of *pulmonary embolism* as accurate. The data further showed that 23.40 percent (11 participants) rated the same translation as less accurate. Only one participant (2.10%) agreed with the NARI rating and chose an inaccurate rating.

As for the readability aspect, the translation الانصمام الرئوي (*obstructive pulmonary*) is considered readable and is given a score of 3 according to NRRIs. The translation does not include ambiguity or vagueness; therefore, the audience can understand it easily, even though it is not accurate. If space constraints are considered, the characters for the subtitle ادج سالاند م ل ماة التاع (*I will teach you how to treat a pulmonary embolism*) are 40 characters. Thus, the translator/subtitler did not cross the space constraints suggested by Díaz-Cintas (2010). However, for accurate translation, if the characters of the word الانصمام الرئوي (*embolism*) are counted, it is 8 characters. Furthermore, if the characters of the word الانصمام الرئوي (*obstructive*) are compared with the characters of the word الانصمام الرئوي (*embolism*), it will also be 8 characters. This means that the translator/subtitler did not choose this specific translation to stay within the space constraints limit. The translator/subtitler did not make the proper choice by using a completely inaccurate

translation. It would be best to choose the accurate translation الانصمام الرئوي (*pulmonary embolism*) to deliver an accurate meaning for the reader/audience.

#### 5.4 Group 4: Accuracy (3) and readability (2)

Table 4. Accuracy (3) and readability (2) scores

No.	Timing	Terminology	AVT	Dictionary Translation	Accuracy	Score	Readability	Score	Characters' Number
1	00:04:47	Vesicular rashes	طفح حويصلي	=	Accurate	3	Less readable	2	39
2	00:21:07	ARDS	متلازمة الضائقة التنفسية الحادة	=	Accurate	3	Less readable	2	53
3	00:09:50	Pericardium	التامور	شغاف القلب	Accurate	3	Less readable	2	24
4	00:17:94	L5-S1	مفصل القطنية الحجزية	=	Accurate	3	Less readable	2	37

Four terminologies out of 100 (4%) were recognised, as their accuracy level was high and achieved 3 out of 3 according to the NASC scale; however, they were less readable and scored 2 out of 3 for readability.

Here the details and results of Pericardium: the show's name is The resident (season 2-Episode 20, Time: 00: 09:50), the ST is Cutting pericardium exposing the heart, and the TT is , اقطع التامور واكشف القلب , and the Dictionary Meaning is التامور / شغاف القلب. The accuracy score is 3, while readability score is 2.

From a linguistic perspective, the accurate translation of *pericardium* is التامور or شغاف القلب according to specialised medical dictionaries and glossaries such as the UMD. Medically speaking, the pericardium is the sac which covers the heart, and its main purpose is to 'isolate the heart from the adjacent tissues, allowing its free movement within the boundaries of the pericardial cavity and is filled with a small amount of fluid which is called pericardial fluid' (Chinchoy 2005: 101) (see Figure 5).

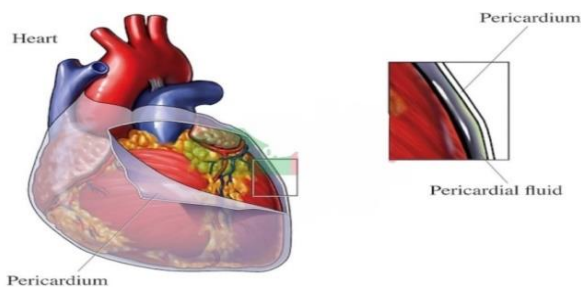


Figure 5. Illustration of the pericardium

According to NARIs, the translation of the pericardium is accurate; thus, it got a 3. The translation of the pericardium is التامور. The meaning is transferred accurately into the target language, with no distortion of meaning. Therefore, the translation is considered accurate based on the NASC scale.

According to the participants' responses, the results showed agreement that the translation is indeed accurate. The data showed that 66 percent (31 participants) rated the translation of the *pericardium* as accurate. This is because of the appropriate choice of translation. While 31.9 percent (15 participants) chose to rate the same translation as less accurate, only one (2.1%) rated the translation as inaccurate.

Regarding readability, the translation was rated as less readable according to NRRIs and given a score of 2. Most readers may find التامور difficult to read or understand because it is purely medical in nature. The expression التامور might not be familiar to many readers. Therefore, it might be difficult to understand. The expression شغاف القلب is much more readable and a better choice for the audience.

However, the translation التامور has fewer characters in comparison with القلب شغاف. By adding both terminologies to the subtitles, the former has 24 characters, while the latter has 27 characters. Neither breaks the space constraints for the number of characters proposed by Díaz-Cintas (2010). The translation القلب شغاف achieves higher readability levels; therefore, it is a more proper choice for the translator/subtitler to consider.

### 5.5 Group 5: Accuracy (1) and readability (2)

Table 5. Accuracy (1) and readability (2) scores

No.	Timing	Terminology	AVT	Dictionary Translation	Accuracy	Score	Readability	Score	Characters' Number
1	00:05:37	Sick	نوعك	مرض	inaccurate	1	Less readable	2	24
2	00:13:53	Embolic stroke	سكتة دماغية صمبية	جلطة دماغية	inaccurate	1	Less readable	2	37

Only two terminologies (2%) were recognised for this group. The translation was inaccurate and less readable, as shown in the following example:

Here the details and results of *Sick*: the show's name is The Good Doctor (season 2-Episode 10, Time: 00:05:37), the ST is *When did you start feeling sick?*, and the TT is متى بدأت رجرجج عوشالاً بلتواعك, and the Dictionary Meaning is مرض. The accuracy score is 1, while readability score is 2.

The accurate linguistic and medical translation for the expression *sick* is رجرجج مرض مالجج according to specialised medical terminologies and glossaries. The translator/subtitler chose the word رجرجج رجرججك, which is translated into *malaise* or *indisposition*. In Arabic, رجرجج مرض مالجج sickness and الرجرجج رجرججك malaise hold different indications. The former is much more intense than the latter. The expression *malaise* refers to 'the feeling of slight discomfort lasting for a day or a short period', and it can occur in the first stages before feeling extremely ill or sick. The expression *sick* refers to 'the abnormal and intense feeling which affects the body's wellness and often lasts for several days'. The degree of intensity between the two expressions differed in meaning.

According to NARIs, the translation of sick is inaccurate; thus, it gets a score of 1. The accurate translation of the sick is المرض. The meaning is not transferred accurately into the target language, and there is a distortion of meaning, as explained in the previous paragraph, stating the difference between مرض and توعك.

The participants' responses revealed different opinions. Most (68.1%; 32 participants) rated the translation of *sick* as accurate, while 29.8 percent (14 participants) considered it less accurate. Only one participant (2.1%) rated the same translation as inaccurate.

The translator/subtitled must choose a common and well-known translation for readers to understand. The aspect of readability is important because AVT is audience-oriented. Therefore, in terms of readability, the expression التوعك is rated as less readable according to NRRIs and given a score of 2. Not only is the translation inaccurate, but it is certainly less readable. Even concerning space constraints suggested by Riess (1971), both expressions المرض and الوعكة have 3 and 4 characters in a subtitle constructed of 24 characters. Therefore, choosing either word would not break the limit of 35 characters per line.

## 5.6 Group 6: Accuracy (2) and readability (2)

Table 6. Accuracy (2) and readability (2) scores

No.	Timing	Terminology	AVT	Dictionary Translation	Accuracy	Score	Readability	Score	Characters' Number
1	00:27:55	Catheter	كيس القطرة	قِطَارٌ	Less accurate	2	Less readable	2	48
2	00:30:40	Free fluid	استسقاء بطني	مسائل في تجويف البطن	Accurate	3	Unreadable	1	20

In only one case (1%), both accuracy and readability got 2 out of 3, and again, in 1 percent (one example), the translation was accurate but unreadable.

Regarding the details and results of *Catheter*, the show's name is The Resident (season 2-Episode 20, Time: 00: 27:55), the ST is *That much blood in a catheter is not normal*, and the TT is *هذه الكمية من الدماء في كيس القطرة ليست طبيعية*, and the Dictionary Meaning is قِطَارٌ. The accuracy and readability scores are 2.

Foley (1937), the designer of the catheter or *Foley catheter* in 1929, defined the catheter as 'isolate the heart from the adjacent tissues, allowing its free movement within the boundaries of the pericardial cavity and is filled with a small amount of fluid which is called pericardial fluid' (p. 143).

According to specialised medical dictionaries and glossaries, specifically the UMD, the accurate translation of catheter is قِطَارٌ. The catheter consisted of several parts and a catheter collection bag (see Figure 6). Therefore, the translation of the catheter into كيس القطرة is not completely accurate, although it is part of the device.

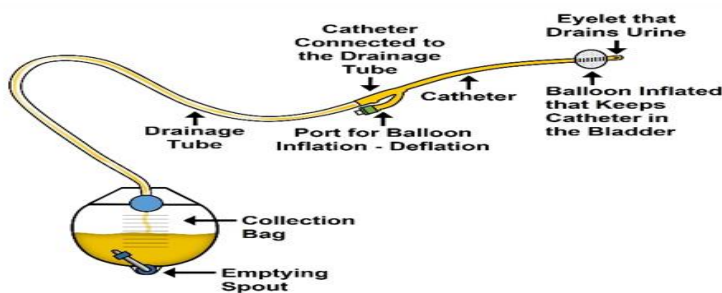


Figure 6. Foley catheter device and parts

According to NARIs, the translation of *catheter* is less accurate; thus, it gets a 2. The translation of catheter is القِطْطَارُ. Meaning is partly transferred to the target language, and there is some distortion of meaning. Therefore, the translation is considered less accurate based on NASC.

According to survey participants, the data showed that 55.4 percent (26 participants) rated the translation of *catheter* as accurate, while 34 percent (16 participants) rated the same translation as less accurate. The data further revealed that 10.6 percent (5 participants) chose to rate the translation as inaccurate.

Regarding readability, the translator/subtitler's choice is considered less readable and is given a score of 2 according to NRRIs. The translation كيس is not easy to read and understand by most readers/audience. The device may not be familiar to many due to its specialised medical nature. The medical term القِطْطَارُ is not part of the language for general use or is not used in everyday communication.

The subtitle هذه الكمية من الدماء في كيس القِطْطَارَة ليست طبيعية consists of 47 characters. If the word كيس was omitted and the word القِطْطَارَة was replaced by the accurate translation القِطْطَارُ, the number of characters would be 43 characters. The number of characters for both is within the permitted limit.

### 5.7 Group 7: Accuracy (3) and readability (1)

Table 7. Accuracy (3) and readability (1) scores

No.	Timing	Terminology	AVT	Dictionary Translation	Accuracy	Score	Readability	Score	Characters' Number
1	00:30:40	Free fluid	استسقاء بطني	سائل في تجويف البطن	Accurate	3	Unreadable	1	20

One example was notable in that its accuracy was high, scoring 3 out of 3, but the translation was unreadable. The number of characters did not exceed this limit.

**6. Discussion**

After combining the qualitative and quantitative analyses, the accuracy and other issues related to the translation of medical terminologies in the AV setting were considered. Based on the above numerical data, it was found that other aspects affect the accuracy in the AV setting, such as readability and space constraints. All these aspects are related to each other, lead to one another and contribute to achieving the primary aspect—accuracy. After detailed analysis of the translated medical terminologies in the five AV shows divided into seven groups and investigating all aspects which affected the translations and influenced the outcome of the translations under study, the results reveal the following:

Concerning the first research question on how accurate the translations of medical terminologies in the selected AVMs are, the results revealed that 75 percent of the data were accurate and readable when converted to the NASC scale, with an accuracy score of 2.6 out of 3. Only 17 percent were less accurate and 8 terminologies (8%) were inaccurate.

Furthermore, it is essential to present the average score for each AVM, which was used as data in this study. The average score varied according to each episode and the number of medical terminologies used in each AVM. However, all their average scores fell within the accuracy range of 2.4–3 based on NASC, as presented in Table 8 below.

Table 8. NASC results for each AVM

Show	Unit	Categories			Average Score	Result
		Accurate	Less Accurate	Inaccurate		
The Good Doctor	55 Terminologies	36	13	6	2.5	Accurate
		$36 \times 3 = 108$	$13 \times 2 = 26$	$6 \times 1 = 6$		
		$140 \div 55 = 2.5$				
Grey's Anatomy	8 Terminologies	7	1	0	2.8	Accurate
		$7 \times 3 = 21$	$1 \times 2 = 2$	$0 \times 1 = 0$		
		$23 \div 8 = 2.8$				
New Amsterdam	10 Terminologies	9	0	1	2.8	Accurate
		$9 \times 3 = 27$	$0 \times 2 = 0$	$1 \times 1 = 1$		
		$28 \div 10 = 2.8$				
Code Black	8 Terminologies	7	1	0	2.8	Accurate
		$7 \times 3 = 21$	$1 \times 2 = 2$	$0 \times 1 = 0$		
		$23 \div 8 = 2.8$				
The Resident	19 Terminologies	17	2	0	2.8	Accurate
		$17 \times 3 = 51$	$2 \times 2 = 4$	$0 \times 1 = 0$		
		$55 \div 19 = 2.8$				

The average score for each AVM indicates that the translation is accurate.

It appears that the participants' results do not necessarily match NASC ratings completely, but the overall results corresponded with each other. Most survey participants thought the translations were accurate in terms of meaning. Participants were not provided with scientific definitions or dictionary meanings; they mostly followed their instincts as translators working in the field and as academicians in the translation department. The participants were informed that the translations in the survey were from AVMs, and because they were competent in translation, they might have focused on the translation being directed to the target audience of different ages and educational backgrounds. The results show that the accuracy was 98 percent, and when converted to the NASC scale, the accuracy was

2.9 out of 3. Only 2 percent were less accurate, while no example showed inaccuracy at all.

To answer the second research question, which is related to the aspects affecting the accuracy of translated medical terminologies, especially in the AV setting, the results showed that other factors, such as the level of readability and space constraints, play a major role in the accuracy of translated medical terminologies in AVMs.

The aspect of readability is important because the audience is the target of AVMs (Pavesi 2005). In this study, the aspect of readability was examined from the meaning and technical levels. In other words, the meaning level includes the clearness and vagueness of the translation and how terms are understood by an audience of all ages and educational backgrounds; this level adopts the Nababan et al. (2012) readability aspect.

The technical level adopts Díaz-Cintas's space constraints to measure the number of characters and the length of each line in the subtitles. Both levels achieve the ultimate investigation for the aspect of readability and its relation to the target audience because of the AV setting in the current study.

Starting with the meaning level, 90 translated medical terminologies (90%) were readable, which was 2.8 out of 3 based on Nababan et al.'s (2012) readability score calculation (NRSC). The average score achieved was 2.8, indicating that the translation of medical terminologies in AVMs is readable and understood by the target audience. This result is important for measuring the aspect of accuracy because the research deals with the AV setting. The AV setting mainly revolves around the audience and readers. Achieving such a high score means that the translation is done for the audience's best interests. This could be why these episodes were the most watched on Netflix and had the highest ratings on IMDb. However, 9 percent were less readable and only one example (1%) was unreadable.

The second level, which examines the aspect of readability, the so-called technical level, is related to the number of characters based on Díaz-Cintas's space constraints. The results showed that 95 translated medical terminologies stayed within the space constraints limit of 70 characters in subtitles, while only 5 crossed the limit. The number of characters of all subtitles containing the 100 translated medical terminologies varied; the minimum number of characters was 8, whereas the maximum was 91, which broke the space constraints.

Both the meaning and technical levels, represented by the Nababan et al. readability aspect and Díaz-Cintas's space constraints, contribute to the final readability result. Both Nababan et al. and Díaz-Cintas believed that the aspect of readability is affected by sentence length. In other words, if the sentence is constructed of understandable words but breaks the space constraints, it cannot be considered readable because there are other factors, such as the limited time and duration of the subtitles in AVMs, which prevent the reader/audience from reading the whole subtitle, which will eventually cause low readability levels (Chiaro, 2012). The same idea applies if the sentence is constructed of vague words but does

not break space constraints; it will also cause low readability levels. To sum up, both levels must cohere for optimum readability results because both play a direct role in achieving accuracy in AV settings. These results support the high ratings of episodes according to IMDb. However, because the current research investigates the accuracy of translated medical terminologies at the word level, the meaning level comes first. It is clear that the translator/subtitler chose shorter words or words with fewer characters in the translation to avoid crossing space constraints and to achieve a high readability level.

After calculating the total number of characters, which comes up to 3331 for all subtitles which contain the translated medical terminologies, excluding the 5 subtitles which crossed the constraints, the results revealed that the average number of characters for the subtitle is 35, which can be considered the best length for a subtitle presented in only one line. In addition, 35 characters represent exactly half of the 70 characters and can achieve high readability levels.

There are incidents where readability comes on account of accuracy and vice versa. The analysis relied on specialised medical dictionaries and glossaries to reveal accurate Arabic equivalents. Some Arabic equivalents in these dictionaries can be either vague and unfamiliar, such as *قُطَّطُر*, or lengthy, such as *التبرع بالخلايا الجذعية للنخاع العظمي أو الشوكي والدم*. Therefore, the translator/subtitler may resort to shorter forms of expression to achieve a high readability level and maintain the character limit for accuracy.

In contrast, there are incidents where medical terminologies must be translated accurately according to medical dictionaries even if they reach low readability levels, such as *متلازمة الضائقة التنفسية الحادة* and *طفح حويصلي*. Terminologies such as *ARDS* and *vesicular rashes* are medical in nature and require accurate translation under all circumstances and settings.

Another aspect that affects the accuracy and readability of translated medical terminologies is the types of terms. In the present study, abbreviations posed certain challenges. Medical English tends to abbreviate longer expressions such as the medical abbreviations *CDC*, *ARDS* and *MRI*. Medical Arabic does not use abbreviations. Because of the structural differences and linguistic variations between English and Arabic, the Arabic translations tend to be lengthy for the AV setting, which affects the aspect of readability because of the increased number of characters.

Because abbreviations create most challenges, such as (according to Merriam-Webster, *ARDS* is *متلازمة الضائقة التنفسية الحادة*), not only does this type have the tendency to break the space constraints, but it also interferes with the discourse and subtitling speed, which means that the English abbreviation mentioned in the discourse requires a shorter time than writing it in the Arabic subtitle, which takes a longer time. The English abbreviations will not be translated into Arabic letters but into complete Arabic words. This can create lengthy subtitles and a time lapse between the discourse (speaking) speed and the subtitle's (reading) speed.

Combining the two genres—medical and entertainment—which are completely different from each other into one product can be a difficult challenge facing the translator/subtitler. Despite the specialised medical nature of the terminologies, it occurs here in a less strict setting, namely, AV. Therefore, the aspect of accuracy becomes less strict on account of readability. Thus, the accuracy here is no longer the preciseness of meaning written in dictionaries and glossaries; the accuracy of translated medical terminologies will gain another notion which matches the grounds of AV. To clarify further, it appears that accuracy should match the grounds of the hosting setting. The criteria for specialised terminologies requiring accurate translations will need to be less strict and comply with the hosting AV setting and follow its regulations and aims. This does not mean completely violating and underestimating the accuracy aspect or mistranslating medical terminologies. In contrast, it is important to preserve the meanings of medical terminologies and convey them in the target language. However, this should be done in a common grey ground between the two genres, namely, medical and entertainment.

## **7. Conclusion**

The current research investigated the accuracy level of 100 translated medical terminologies in five AV shows with the highest ratings.

The translated medical terminologies were considered 75 percent accurate based on NASC, achieving 2.6 out of 3, and survey participants' responses, achieving 2.9 out of 3, indicating that the translation is 98 percent accurate. The vast majority of meanings were accurately conveyed from the source language to the target language.

The translated medical terminologies were considered 90 percent readable based on NRSC, achieving 2.9 out of 3. In addition, the average number of characters for the subtitles was estimated at 35 characters, representing only one line.

Accuracy gains a new notion that differs from the usual one known in translation. The accuracy of translated medical terminologies in AVMs does not use the precise equivalent found in specialised dictionaries. Accuracy here is affected by space constraints and the readability level of the audience. Therefore, deleting, adding, explaining or modifying text does not hold a negative value. When the integrity of the message is interrupted, it does not have a negative connotation in this setting. In contrast, it is in the best interest of the audience, keeping in mind the orientation towards the target audience.

Furthermore, medical terminologies occur in different forms besides the usual ones. Medical terminologies can occur in the form of abbreviations and compound words. These forms impose certain challenges. Medical Arabic tends to be descriptive and lengthy compared with medical English, which tends to be short and brief. This difference creates a gap between the two languages and threatens the space constraints.

This study presents an addition to evaluate the accuracy level in AVT: it is essential to consider the aspect of readability and time and space constraints. Although this paper was limited to one direction (English to Arabic) and to 100 specific medical terminologies, it urges researchers to investigate other directions and different terminologies.

### **Endnote**

\*Hermes is a 90-minute test utilized by Netflix partners, and it is the first online subtitling and translation test and indexing system which examines whether freelancer translators are qualified or not.

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## References

- Baker, Mona.** (2011). *In Other Words: A Course-Book on Translation*. London: Routledge.
- Chiaro, Delia.** (2012). 'Audiovisual translation'. In Carol A. Chapelle (ed.), *The Encyclopedia of Applied Linguistics*, 1-6. New Jersey: Blackwell Publishing. <https://doi.org/10.1002/9781405198431.wbeal0061>.
- Chinchoy Edward.** (2005). *Handbook of Cardiac Anatomy, Physiology and Devices*. Totowa, NJ: Humana Press Inc.
- Díaz-Cintas, Jorge.** (2009). *New Trends in Audiovisual Translation*. Bristol, Blue Ridge Summit: Multilingual Matters. <https://doi.org/10.21832/9781847691552>.
- Díaz-Cintas, Jorge.** (2010). 'The highs and lows of digital subtitles'. In Iew N. Zybatow (ed.), *Translationswissenschaft—Stand und Perspektiven. Innsbrucker Ringvorlesungen zur Translationswissenschaft*, 105–130. Frankfurt am Main: Peter Lang.
- Dorland, Newman W. A.** (1988). *Dorland's Illustrated Medical Dictionary*. Philadelphia: W.B. Saunders.
- Espasa, Eva.** (2004). 'Myths about documentary translation'. In Pilar Orero (ed.), *Topics in Audiovisual Translation*, 183-197. Amsterdam: John Benjamins.
- Farahani, Ali Khomejani.** (2005). 'A framework for translation evaluation'. *Iranian Journal of Translation Studies*, 3(9): 1-8. <https://journal.translationstudies.ir/ts/article/view/58>.
- Farlex Partner.** (2012). *Medical Dictionary by Farlex*. Retrieved from <http://medical-dictionary.thefreedictionary.com/VA>.
- Foley, Frederic.** (1937). 'A hemostatic bag catheter: one piece latex rubber structure for control of bleeding and constant drainage following prostatic resection'. *Journal of Urology*, 38: 134–139. [https://doi.org/10.1016/S0022-5347\(17\)71935-0](https://doi.org/10.1016/S0022-5347(17)71935-0).
- Giri, Projita.** (2018). 'Linguistic analysis of audio-visual translation: with reference to the subtitles of belaseshe'. *Jadavpur Journal of Languages and Linguistics*, 2(2): 1-6. <http://jll.jdvu.ac.in/journal/index.php/JLL>.
- Gottlieb, Henrik.** (1992). 'Subtitling- a new university discipline'. In Cay Dollerup and Anne Loddegaard (eds.), *Teaching Translation and Interpreting: Training, Talent and Experience*, 161-170. Amsterdam: John Benjamins Publishing Company. <https://doi.org/10.1075/z.56.26got>.
- Herr, Bruce, Weimao Ke, Elisha Hardy and Katy Börner.** (2007). 'Movies and actors: Mapping the internet movie database'. *Proceedings of the Annual Information Visualization International Conference IEEE*, 465-469. <https://doi.org/10.1109/IV.2007.78>.
- House, Juliane.** (1997). *Translation Quality Assessment: A Model Revisited*. Nerhen: Gunter Narr Verlag. <https://books.google.iq/books?id=D16aYuTCBJ0C>.

- Jakobson, Roman.** (1959). 'On linguistic aspects of translation'. In Lawrence Venuti (ed.), *The Translation Studies Reader*, 113-118. London: Routledge.
- Larson, Mildred.** (1984). *Meaning-Based Translation: A Guide to Cross-Language Equivalence*. New York: University Press of America.
- Larson, Mildred.** (1998). *Meaning-Based Translation: A Guide to Cross-Language Equivalence*. Boston: University Press of America.
- Lund, John. E.** (2000). 'Toxicologic effects on blood and bone marrow'. In Joseph F. Feldman, Joseph G. Zinkl and Nemi C. Jain (eds.), *Schalm's Veterinary Hematology*, 44-50. Philadelphia: Lippincott Williams and Wilkins.
- Matamala, Anna.** (2009). 'Main challenges in the translation of documentaries'. In Jorge Díaz-Cintas (ed.), *New Trends in Audiovisual Translation*, 109-120. London: Multilingual Matters.
- Mateo, José.** (1993). 'The translation of business English discourse into Spanish'. *Babel*, 39(1): 11-20. <https://doi.org/10.1075/babel.39.1.03mat>.
- Mehdi, Asal and Hala Ghanim Mohammed.** (2022). 'Investigating the most utilized strategies in translating medical terminologies in AV shows'. *Resmilitaris*. 12(2): 6387-6400.
- Merriam-Webster.** (2023). Last accessed on 5<sup>th</sup> June (2023). Retrieved from <https://www.merriam-webster.com/dictionary/abbreviation>.
- Netflix TechBlog.** (2017). *Artwork Personalization at Netflix*. Retrieved in June 2022, from Medium: <https://medium.com/netflix-techblog/artwork-personalizationc589f074ad76>.
- Nababan, Mangatur, Ardiana Nuraeni and Sumardiono.** (2012). 'Pengembangan model penilaian kualitas terjemahan'. *Kajian Linguistik dan Sastra*, 24(1): 39-57. <http://hdl.handle.net/11617/2220>.
- Neves, Joselia.** (2004). 'Subtitling: written interpretation?'. *Génesis – Revista de Tradução*, 4: 154-165.
- Pavesi, Maria.** (2005). *La Traduzione Filmica. Aspetti Del Parlato Doppiato Dall'inglese All'italiano*. Roma: Carocci.
- Qaseem, Amir, Timothy J. Wilt, Steven E. Weinberger, Nicola A. Hanania, Gerard Criner, Thys van der Molen, Darcy D. Marciniuk, Tom Denberg and Holger Schu" Nemann.** (2011). 'Diagnosis and management of stable chronic obstructive pulmonary disease: A clinical practice guideline update from the American college of physicians, American college of chest physicians, American thoracic society, and European respiratory society'. *American College of Physicians*, 155(3): 179-192.
- Rahimi, Mohammad.** (2004). An investigation into the factors affecting Iranian EFL students' perceived use of language learning strategies. Unpublished PhD Dissertation, *Shiraz University*, Shiraz, Iran.

- Reiss, Katharina.** (1971). *Möglichkeiten und Grenzen der Übersetzungskritik. Kategorien und Kriterien für eine Sachgerchte Beurteilung von Übersetzungen.* München: Max Heuber Verlag.  
<https://lib.ugent.be/catalog/rug01:002014760>.
- Shuttleworth, Mark and Moira Cowie.** (1997). *Dictionary of Translation Studies.* Manchester: St. Jerome Publishing.
- Siahaan, Basar Lolo, Novita Gresiana Manurung, Oktavianti Sianturi and Miranda Sinaga.** (2023). 'Accuracy of the translation of the Indonesian short story "angsa dengan telur emas" into English using u-dictionary'. *Journal on Education*, 5(4): 14432-14444.  
<https://doi.org/10.31004/joe.v5i4.2497>.
- Syah, Zul Kaisar Aimar, Muhammad Nur Akbar Rasyidand, Muhammad Nur Akbar Rasyid and Rosmah Tami.** (2023). 'A quality assessment of English idiom translation into Indonesian in harry potter and the cursed child'. *Elite English and Literature Journal*, 10(1): 15-28.  
<https://doi.org/10.24252/elite.v10i1.32125>.
- The Linux Information Project.** (2007). Last accessed on 9<sup>th</sup> January (2022). Retrieved from: <http://www.linfo.org/>.
- Wayne, Michael L.** (2018). 'Netflix, amazon, and branded television content in subscription video on-demand portals'. *Media, Culture and Society*, 40(5): 725–741. <http://dx.doi.org/10.1177/0163443717736118>
- World Health Organization.** (2006). *Regional Office for the Eastern Mediterranean and Librairie du Liban Publishers. The Unified Medical Dictionary English-Arabic.* Retrieved from:  
<https://iris.who.int/handle/10665/119845>
- Yaseen, Heba Sh.** (2013). Terminological inconsistency in medical translation from English into Arabic. Unpublished MA Thesis, An-Najah National University, Nablus, Palestinian.