Table 2: Study types, participants' characteristics, technology, and study method/design

Publication Details and Characteristics			
Citation	**Study Type**	**Objectives**	**Participant details (e.g. type of ALS age/sex and number), Technology used, Method**
Hird and Hennessey (2007) [48] Australia	Primary Research, peer reviewed	Therapy aimed at modifying a person's speech output to improve speech recognition software performance.	15 adults with dysarthria. Two had ALS. Type of ALS was not specified. One male age 46 and one female age. Power Secretary ASR technology was used 30 minutes of speech therapy treatment followed by 30 minutes of dictation. 15 sessions overall.
Caves et al. (2007) [50] USA	Conference Proceeding	To improve ASR accuracy for plwALS with mild-severe dysarthria.	50 plwALS (21 male, 29 Female). No ALS type or age of participant reported. An adapted military training simulation ASR model was used. Participants read digits 0 to 9 and one hundred "zip codes".
Ballati et al. (2018) [51] Italy	Conference Proceeding	Investigated the extent that Siri, Cortana and Google Assistant can comprehend words and sentences spoken by plwALS.	Eight participants (four female, four male), aged 67-83, ALS type not stated. Native Italian speakers. Google Assistant, Cortana, Siri were used.34 Italian sentences were recorded from 8 people and audio files from each participant were presented to each voice assistant.
Ballati et al. (2018) [52] Italy	Conference Proceeding	Investigate the extent that Siri, Google Assistant, and Amazon Alexa can comprehend words and sentences spoken by people with dysarthric voices and the accuracy and consistency of the answers generated.	Recordings from eight participants from the TORGO database. One participant had been diagnosed with ALS (remainder diagnosed with Cerebral Palsy). Siri, Google Assistant, Amazon Alexa were used.5 sentences were created from the TORGO dataset pronounced by 7 speakers. Performance of each system was measured by WER and appropriacy of answer.
De Russis and Corno (2019) [24] Italy	Primary Research, peer reviewed	(1) Are ASR platforms suitable for recognizing dysarthric speech? (2) What is the attained recognition rate? (3) What kinds of transcription errors are more frequent, in case of imperfect/partial recognition? (4) Can transcription alternatives (as provided by ASR platforms) improve the overall recognition result?	Recordings from eight participants(five males, three females) in English from the TORGO database. One participant had been diagnosed with ALS (remainder diagnosed with Cerebral Palsy). IBM Watson Google Cloud Speech, Microsoft Azure Bing Speech were used. 38 sentences recorded by all females, 13 sentences by all females. Performance measured by WER of each system, and the WER of the transcription alternative.
Pradhan et al (2020) [53] USA	Conference Proceeding	(1) To examine the accessibility of off-the-shelf Intelligent personal assistants (IPAs) (e.g., Amazon Echo) (2) To understand how users with disabilities are making use of these devices.	(1) Analysis of 346 Amazon Echo reviews on Amazon.com that include users with a range of disabilities, including ALS (the number, type, and gender unspecified). Amazon Alexa was used. (2) Semi structured interviews of 16 people with visual impairments (none had ALS).
Shor et al. (2020) [54] USA	Conference Proceeding	(1) To improve ASR accuracy for plwALS with mild-severe dysarthria, and for people with heavy accent.	17 plwALS. No details provided on type of ALS, age or sex. Personalized ASR models were used. The participants were given sentences to read from The Cornell Movie-Dialogs Corpus, phrases used by text-to-speech voice actors, and a modified selection of sentences from the Boston Children's Hospital.

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Hahm et al. (2015) [56] USA	Conference Proceeding	(1) speaker independent recognition of dysarthric speech due to ALS using articulatory data.	5 plwALS. 3 females, 2 males. Average age 59. Recently diagnosed (within a year of the resarch) No details provided on type of ALS. Gaussian mixture model (GMM) - hidden Markov model (HMM), deep neural network (DNN) - HMM combined with articulatory data were used. plwALS produced up to four repetitions of twenty sentences used in daily conversation (for example, 'How are you?') or related to their medical condition ('This is an emergency').
Kim et al. (2018) [57] USA	Conference Proceeding	(1) speaker independent recognition of dysarthric speech due to ALS using spectral and temporal speech data.	9 plwALS. 6 females, 3 males. Average age 62.8. Recently diagnosed (within a year of the resarch). No details provided on type of ALS. Gaussian mixture model (GMM) - hidden Markov model (HMM), deep neural network (DNN) - HMM combined with articulatory data were used. plwALS produced up to four repetitions of twenty sentences used in daily conversation (for example, 'How are you?') or related to their medical condition ('I need to make an appointment'). 4 plwALS recorded with an average gap of 6 months between recordings.
Rudzicz F. (2011) [26] USA	Conference Proceeding	(1) Improve ASR for dysarthric speech by including articulatory information.	Recordings from MOCHA database of people without dysarthria, the authors own collection of dysarthric speech (not specified if any were of plwALS) and recordings from the TORGO database (One participant had been diagnosed with ALS and remaining seven diagnosed with Cerebral Palsy). Hidden Markov model (HMM), deep neural network (DNN), Support Vector Machines (SVMs), Dynamic Bayes Networks (DBNs) combined with articulatory models were used. Recordings from two speakers with dysarthria (male and female) and two speakers without (male and female). It is unclear if any were plwALS.
Rudzicz F. (2012) [58] UK	Primary Research, peer reviewed	(1)This paper presents a system that transforms the speech signals of speakers with physical speech disabilities into a more intelligible form that can be more easily understood by listeners.	Recordings from the TORGO database (One participant had been diagnosed with ALS and remaining seven diagnosed with Cerebral Palsy). human listeners attempt to identify words in sentence-level utterances under a number of acoustic scenarios. Sentences are either uttered by a speaker with dysarthria, modified from their original source acoustics, or produced by a text-to-speech synthesizer.