



# Impact of using an AI scribe on clinical documentation and clinician-patient interactions in allied health private practice: perspectives of clinicians and patients

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## ABSTRACT

**Background:** The burden associated with clinical documentation can negatively impact patient care and job satisfaction amongst allied health professionals (AHPs). Digital scribes based on artificial intelligence (AI) may address these issues, but this has not been evaluated in Australian allied health private practice.

**Objective:** Describe perspectives and experiences of AHPs and patients regarding the use of an AI scribe for clinical documentation.

**Design:** Mixed-methods.

**Methods:** AHPs completed surveys at baseline, and after 6-weeks and 3-months of using an AI scribe that sought their perspectives about AI and clinical documentation. AHPs invited patients to complete one survey after the AI scribe was used during an appointment. Individual semi-structured interviews were conducted with a subset of AHPs and patients.

**Results:** 119 AHPs and 157 patients completed the surveys. 15 AHPs and 14 patients were interviewed. There was a significant reduction in time spent doing notes, letters and completing notes out of hours between baseline and 6-weeks and baseline and 3-months but no difference between 6-weeks and 3-months. Burden was significantly less at 3-months compared to baseline. Productivity increased by an average of 5.8 %. From the interviews, four themes described participants' experiences: using the scribe had a positive impact on therapeutic alliance and administrative workload, trust facilitated the use of the scribe and AHPs appreciated the scribe for different aspects of documentation. Although patients were comfortable consenting to the AI scribe being used during their own appointments, some acknowledged that other patients might require additional information about data storage and security to make an informed decision.

**Conclusion:** The use of an AI scribe had a positive impact on AHPs working, and patients seeking care, in Australian allied health private practice.

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## 1. Introduction

Allied health professionals (AHPs) are required to document interactions with patients. Clinical documentation aids in communication, continuity of care, legal protection, treatment planning, mapping outcomes, research, education, and quality improvement (Ammenwerth and Spötl, 2009; Ebbers et al., 2022; Elkbuli et al., 2018). Patient-centred care is facilitated by AHPs writing reports to colleagues and by providing written communication to their patients (e.g., a summary of the appointment, advice about their presenting condition, exercise programs). Third parties, including insurance companies and public health insurance schemes, often require reports to be written about the care provided and forms to be completed before approval of further treatment. Thus, written documentation and communication are integral to daily practice but can take >25 % of an AHP's time, potentially negatively impacting on patient care (Ammenwerth and Spötl, 2009; Erickson et al., 2008), job satisfaction and employee engagement (Chipchase et al., 2021). High administrative workload contributes to physician burnout (National Academies of Sciences et al., 2019; Rotenstein et al., 2024) and, for recently graduated AHPs, the time spent on documentation is one of the elements of working in private practice least expected and reported to contribute to burnout within the first 12 months of their professional careers (Evans et al., 2022).

Interest in the use of artificial intelligence (AI), specifically natural language processing (NLP), as a way of reducing the burden of clinical documentation is increasing (Alowais et al., 2023; Pierre et al., 2023). NLP enables computers to analyse and interpret human language, making it possible to extract valuable information from unstructured clinical notes, reports, and other textual data. The process of utilising AI-based digital scribes for clinical documentation involves the software recording the clinical encounter between a patient and therapist and creating a summary of the conversation. The software converts spoken words into text, analyses the content of the conversation then generates a summary of the conversation for the clinician (and patient) to review and include in the medical record (Bohr and Memarzadeh, 2020). Regulatory requirements for using a digital scribe in healthcare vary by country and jurisdiction but compliance with privacy laws and secure storage and transmission of patient data are key considerations and points of difference between digital scribes and other open AI or digital technologies (Alowais et al., 2023). AI scribes have been suggested to reduce the time spent on clinical documentation and improve the accuracy of patient notes and treatment plans (Nova, 2023; van Buchem et al., 2024). However, evidence supporting these benefits is limited, and no studies have yet examined the impact of AI scribes on administrative workload or patient-therapist interactions in allied health private practice.

In addition to proposed benefits, several concerns have been raised about using AI scribes during interactions between patients and clinicians (van Buchem et al., 2024). For example, concerns around confidentiality of patient data, where data is stored, accuracy and reliability (Quiroz et al., 2019) and workflow disruption due to technical issues. Also of concern is the impact on patient-therapist rapport or therapeutic alliance. Therapeutic alliance refers to the collaborative and affective bond between a patient and a therapist (Bordin, 1979). A strong therapeutic alliance can lead to greater patient satisfaction, engagement, adherence to a management plan and improved clinical outcomes (Ferreira et al., 2013). A strong therapeutic alliance may benefit clinicians by improving job satisfaction (Rao et al., 2020), reducing burnout (Rodriguez-Nogueira et al., 2024), fostering greater empathy and

adaptability (Babatunde et al., 2017; Sherriff et al., 2022). Several factors can influence therapeutic alliance including the therapist's communication skills (Sherriff et al., 2022; O'Keeffe et al., 2016). Active listening, showing empathy through verbal and non-verbal behaviours and clear communication have been shown to foster trust and collaboration during clinical interactions (Babatunde et al., 2017; Sherriff et al., 2022; O'Keeffe et al., 2016). Whilst some concerns have been raised about the use of AI and the loss of human connection (Montemayor et al., 2022), it may be that AI scribes will allow clinicians to focus on communication thereby enhancing therapeutic alliance (Rowe et al., 2022).

In Australia, AHPs work in a variety of healthcare settings including private practice where healthcare services are provided by clinicians who operate within privately owned-clinics in a fee-for-service model. In these settings, AHPs are first contact practitioners and patients either pay out of pocket, use private health insurance or some services may be covered, either fully or in part, by third parties or government agencies. AI scribes typically require subscriptions or licensing fees (Zallman et al., 2018), the cost of which is often on a per-user basis. Thus, investing in AI scribes for clinical documentation without evidence of the benefits/limitations and without considering perspectives of patients and AHPs may not only negatively impact patient care, but lead to inefficient allocation of healthcare resources.

This study explored the impact of using an AI scribe in allied health private practice, focusing specifically on time spent on clinical documentation, productivity, and the experiences and perspectives of AHPs and patients.

## 2. Methods

### 2.1. Design

This was a mixed methods study conducted between February and July 2024. AHP participants completed an online questionnaire immediately prior to using the AI scribe, and at 6-weeks and 3-months. A subset of AHPs who had consented to be involved in the qualitative part of the study were randomly selected to participate in a semi-structured interview after they had been using the scribe for 3-months. During the 3-months, AHPs were asked to invite patients to complete an online questionnaire after an appointment where the scribe had been used. A subset of patients was randomly selected to participate in a semi-structured interview within one week of completing the questionnaire. The study was approved by the Human Research Ethics Committee at The University of Sydney (Project No: 2024/HE000245) and findings are reported using the Consolidated Criteria for Reporting Qualitative Research (COREQ) (Tong et al., 2007).

### 2.2. Participants and recruitment

#### 2.2.1. AHPs

All full-time AHPs (i.e., physiotherapists, podiatrists, exercise physiologists, and occupational therapists) working within one allied health organisation were invited to participate. The organisation is a privately owned allied healthcare company based on a partnership model whereby at least 52 % of the controlling interest is owned by the organisation with clinic partners, based in each clinic, owning the remaining non-controlling interest. The total number of full-time AHPs at the time of recruitment was 876, with physiotherapists being the largest cohort within the organisation (n = 591), followed by podiatrists (n = 147). This organisation represented a sample of convenience. Information about the study was provided to potential participants via email. Consecutive sampling was used during recruitment. During the consent process, participants indicated whether they would also be interested in participating in a semi-structured interview.

## 2.3. Patients

Patients were those >18 years seeking care from an AHP participating in this study. Participating AHPs informed patients about the study and provided those interested with further information and the researchers' contact details.

## 2.4. Data collection

### 2.4.1. AHPs

**Questionnaires.** At baseline (i.e., prior to using the AI scribe), AHPs provided demographic information [e.g., age, gender, discipline (physiotherapist, occupational therapist, exercise physiologist, podiatrist) and years practicing and primary setting (metro, regional, rural)] via an online questionnaire. Participants were asked about their opinions, experience, expectations and trust of AI in general and in healthcare and their current documentation practices such as time spent writing patient notes, letters, doing notes out of hours, and perceptions of their compliance with completing clinical documentation. Participants then attended a 30-min, live online training session which explained the study, how to use the scribe, and provided opportunity to ask questions. During the session, how to introduce the scribe to a patient was explained, including the consent process for the use of the scribe during an appointment, and emphasis was placed on the need to review the notes generated before adding them to the patient's health record.

At 6-weeks and 3-months, participants completed a follow-up questionnaire that asked them about their perspectives and experiences of using the scribe, including the impact on their clinical documentation (e.g., time spent, compliance, burden, etc) and on the interaction with their patients. Participants were also asked about the impact of using the scribe on job satisfaction.

The questionnaires were developed using a pragmatic approach, informed by validated and well-established scales assessing healthcare professionals' perceptions of AI in healthcare (Chao, 2019; Fritsch et al., 2022; Hoffman et al., 2024; Shamszare and Choudhury, 2023; Shinnars et al., 2022; Sommer et al., 2024). For instance, the Shinnars Artificial Intelligence Perception questionnaire (Shinnars et al., 2022), previously used in allied health settings, guided the inclusion of items on technical knowledge, familiarity, and trust in AI. Questions from a survey developed to examine decision making, workload and risk regarding the use of AI in healthcare (Hoffman et al., 2024) guided the inclusion of questions on documentation quality, time burden, and medicolegal compliance (Shamszare and Choudhury, 2023). Additionally, a study conducted in Germany that explored AI's impact on patient interactions and perceptions of privacy informed the inclusion of items assessing trust and confidentiality (Sommer et al., 2024). By integrating these established constructs and validated measures, the questionnaires were systematically developed to align with contemporary research on AI adoption in healthcare, ensuring methodological rigor and relevance. To check for clarity, understanding, and the timing required to complete the questionnaires, an informal pilot study with four AHPs was undertaken prior to data collection with only minor changes to phrasing made (see [supplementary file](#)).

**Productivity.** Productivity was represented as a percentage according to [Number of completed consultations/0.5 h worked], based on the assumption of a maximum of two consultations per clinical hour worked. This is a standard measure used by the organisation and was collected from the practice management software used by the organisation.

**Semi-structured interviews.** After 3-months, purposive sampling was used to recruit AHPs from different disciplines for an interview to explore their perspectives and experiences in greater depth. The interview guide was developed and pilot tested by the research team in collaboration with four private practice AHPs and covered the following topics: perceptions and impact on consultations; usability and workflow integration; and privacy, documentation and communication ([supplementary file 1](#)).

## 2.5. Patients

**Questionnaire.** AHP participants were asked to provide up to three patients with information about the study including the researchers' contact details. Three was chosen from a pragmatic perspective, i.e., so as not to over-burden the AHP but to ensure a range of patient perspectives was considered. Those who consented to participate were asked to complete an online questionnaire after an appointment during which the AI scribe was used. Participants were asked about their opinions, experiences, expectations, and trust in AI in general and in healthcare. Participants were also asked about the impact of using the scribe on the interaction with their clinician and whether it would affect their decision about future appointments.

The questionnaire was developed based on research examining patient attitudes and trust in AI-assisted healthcare. For instance, a study by Fritsch et al. (2022), investigated patient concerns regarding AI, particularly in relation to perceived accuracy, privacy, and the doctor-patient relationship. The findings from this study contributed to our inclusion of items assessing patient confidence, perceived risks, and the potential impact on their overall care experience. To check for clarity, understanding, and the timing required to complete the questionnaire, an informal pilot study with four patients was undertaken prior to data collection with only minor changes to phrasing made (see [supplementary file](#)).

**Semi-structured interviews.** A random sample of patients were invited to participate in a semi-structured interview within 1-week of their appointment to explore their perspectives and experiences in greater depth. The interview guide was developed by the research team and pilot tested with four patients and covered the following topics: perceptions and impact on consultations; privacy, documentation and communication ([supplementary file 2](#)).

## 2.6. Data collection methods

Quantitative data were collected using the University's Research Electronic Data Capture (REDCap) system. For AHPs and patients, semi-structured interviews were recorded with permission using a video-conferencing platform (either Zoom or MS Teams depending on the participant's preference) at a time convenient for the participant. The interviews with AHPs were conducted by either HT (female, PhD candidate and physiotherapist with 12 years' clinical experience) or TH (male, a physiotherapist with 31 years' clinical experience). The interviews with patients were conducted by either HT or AP (female, PhD candidate and physiotherapist with 18 years' clinical experience). Participants were not known to the researchers. BP and KE, experienced qualitative researchers, provided guidance on interviewing techniques. At the start of the interview, the interviewers explained their role in the study and began by asking participants if they had any questions. Field notes were taken during and after the interviews. Interviews lasted between 30 and 45 min and were audio-recorded and later transcribed verbatim. All personal or potentially identifying information was removed from transcripts and pseudonyms were given to prevent identification of individuals. Recruitment ceased when the researchers considered the interviews were no longer adding new information and no repeat interviews were conducted (Saunders et al., 2018).

## 2.7. AI scribe

The AI scribe used in the present study was Lyrebird Health (Lyrebird). Lyrebird first transcribes conversations between AHPs and patients and then, using that transcription, generates consultation notes, referral letters and any other associated documentation required by the AHP. At the beginning of each appointment, the AHP explained to the patient that AI was being used to record the interaction, synthesise the information and generate notes that they would then edit and save in the patient's health record in the clinic's practice management software. AHPs were given a

**Table 1**

Participants' profession and years of professional practise.

Profession	n (%)	Years of Professional Practise (n)					
		0–1 yrs	1–3 yrs	3–5 yrs	5–10 yrs	10–20 yrs	>20 yrs
Physiotherapists	91 (76)	2	27	9	18	23	12
Podiatrists	12 (10)	0	1	3	3	4	1
Occupational therapists	10 (8)	1	3	2	2	1	1
Exercise physiologists	6 (5)	1	1	0	2	2	0
Total, n (%)	119 (100)	4 (3)	32 (27)	14 (12)	25 (21)	30 (25)	14 (12)

script to use and a flyer with further information should a patient have questions the AHP could not answer. The flyer also had a QR code that linked to Lyrebird's website where further information about Lyrebird, including their privacy and security measures, could be obtained. The AHP then asked the patient for their consent to record the interaction. Consent to record the consult was obtained at every appointment. AHPs were encouraged to show their patient the patient summary at the end of the appointment and, where appropriate, email it to the patient. AHPs would then review and edit the notes (if required) before transferring to the practice management software. Before study commencement, Lyrebird had been piloted by 8 clinicians in the preceding 6-months.

## 2.8. Data analysis

**Questionnaires.** Descriptive statistics [mean, standard deviation (SD) or frequency counts (%) as appropriate] were calculated for demographic information and questions related to, for example, familiarity with AI, concerns, expectations. Raw data were log-transformed before analysis. Statistical analysis was performed using linear mixed models for each outcome variable, incorporating timepoint (e.g., baseline, 6-weeks, 3-months) as a fixed effect and participant ID as a random effect (Bates et al., 2015). Variables that were assessed using Likert scales were treated as continuous variables, as justified by Norman et al. (Norman, 2010). Additionally, to provide an estimate of time (in minutes) for outcomes that used time ranges within the Likert scale such as "time spent on clinical notes", an average time was attached to each Likert scale value (e.g., 45 min was used to represent the 30–60 min Likert scale choice) (see [supplementary file](#)). To compare findings at each time point, data were reported as mean and SD or effect size (Cohen's d) and 95 % confidence intervals. All statistical analyses were performed on RStudio using the lme4 package.

## 2.9. Productivity

Productivity, as indicated by clinical hours utilisation, was calculated over the final four-weeks of the trial for each participating clinician. Change in productivity was calculated for each clinician as the difference between the experimental period and the corresponding four weeks in the previous calendar year except for participants in their first year of practice.

**Semi-structured interviews.** A thematic analysis based on the 6-step approach of Braun and Clarke (2006) was undertaken to derive themes from the interview transcripts. First, a subset of the research team (KE, AP, BP, HT) read through the interview transcripts to familiarise themselves with the data and to note potential codes. Second, the researchers independently generated initial codes from three transcripts. Third, the researchers met to compare their codes and collate potential themes with the aid of an online whiteboard. Fourth, the codes and themes were reviewed and revised by sharing them with the rest of the team to gain feedback on the clarity and credibility of the themes. AP and HT then applied the codes to the remaining interview transcripts using Excel and NVIVO. Fifth, the subset of the research team met 9 times over 3 months to discuss new or converging themes. A summary of the codes and themes was provided to the rest of the research team, who could challenge biases and help cross-check and refine them ([supplementary file 3](#)). An audit trail was

maintained. Finally, KE produced the report and selected compelling quotes to illustrate the themes; the rest of the team reviewed and edited the report. Transcripts were not returned to participants nor did participants provide feedback on findings.

## 3. Results

### 3.1. AHPs

#### 3.1.1. Characteristics

119 AHPs volunteered with the majority (76 %) being physiotherapists (Table 1). Participants had a range of experience from being a new graduate (n = 4) to having >20 years of experience (n = 14). 46 % were female. 75 % of participants worked in a metropolitan region, 23 % in a regional area and 2 % worked in a rural area.

AHPs' and patients' self-reported familiarity with AI at baseline is presented in Table 2.

### 3.2. Utilisation of the AI scribe

Table 3 shows the percentage of time AHPs reported using the AI scribe. The scribe was used most frequently for initial appointments at both 6-weeks and 3-months and least frequently used for letters to referrers and for patient summaries at both time points.

During the 3-month study period, AHPs reported that of those patients they asked to consent for the AI scribe to be used during their appointment, 74 declined. Whilst AHPs were asked to estimate the percentage of time they were using the scribe (Table 3), they were not asked to record the number of patients/appointments they used it with. Nevertheless, 74 is likely to represent a small number of people given the total number of patients seen by the AHPs during the 3-months was 64,099.

### 3.3. Impact on time spent on clinical documentation

Table 4 shows the impact of using the AI scribe on time spent doing notes, time spent doing letters and on how often AHPs completed notes out of hours. Collectively, the results suggest that there was a significant reduction in time spent doing notes, time spent doing letters and how often AHPs spent time doing notes out of hours between baseline and 6-weeks and baseline and 3-months but there was no significant difference between 6-weeks and 3-months.

Additionally, there was a significant reduction in the perception that keeping accurate and comprehensive clinical documentation is a burden at 3-months compared to baseline [Cohen's d = 0.22, 95 % CI (0.03–0.41)]. At 3-months, 95 % of participants either agreed or strongly agreed that they would recommend the continued use of the AI scribe. When asked "Using AI for clinical notes improved my job satisfaction", 29 % agreed or strongly agreed and 23 % somewhat agreed with this statement.

### 3.4. Productivity

Productivity increased by an average of 5.8 %. To account for the potential impact of confounding variables and productivity trends



**Table 2**  
AHPs’ and patients’ self-reported familiarity with AI in general and in healthcare.

	Not familiar at all	Slightly familiar	Moderately familiar	Very familiar	Extremely familiar	Prefer not to answer
Patients - familiarity with AI in general	22 %	17 %	35 %	5 %	3 %	19 %
AHPs - familiarity with AI in general	16 %	26 %	38 %	18 %	2 %	0 %
Patients - familiarity with AI in healthcare	36 %	25 %	17 %	1 %	2 %	19 %
AHPs - familiarity with AI in healthcare	19 %	50 %	27 %	3 %	0 %	0 %

**Table 3**  
Percentage of time AHPs reported using the AI scribe at each time point.

	<10 % of the time	10–30 % of the time	30–50 % of the time	50–70 % of the time	70–90 % of the time	100 % of the time	Missing
<b>6-weeks</b>							
Initial appointments	17 %	10 %	9 %	15 %	24 %	19 %	6 %
Follow-up appointments	28 %	22 %	8 %	13 %	18 %	5 %	6 %
Letters to referrers	50 %	12 %	11 %	8 %	9 %	4 %	6 %
Patient summaries	59 %	19 %	7 %	6 %	3 %	1 %	6 %
<b>3-months</b>							
Initial appointments	18 %	7 %	14 %	10 %	26 %	19 %	7 %
Follow-up appointments	32 %	16 %	16 %	11 %	13 %	5 %	7 %
Letters to referrers	46 %	13 %	13 %	7 %	9 %	5 %	7 %
Patient summaries	50 %	23 %	9 %	5 %	3 %	3 %	7 %

**Table 4**  
Impact of using the AI scribe on time spent doing notes, time spent doing letters and on how often AHPs completed notes out of hours at each time point.

Outcome	Time spent on:		Baseline		6-weeks		3-months		Effect size (95 % CI)		
	Likert score	Time value	Likert score	Time value	Likert score	Time value	Likert score	Time value	Baseline to 6 weeks	Baseline to 3 months	6 weeks to 3 months
Clinical notes	3.4 (0.8)	42 (9.7)	2.8 (0.8)	27 (8.0)	2.7 (0.9)	25.5 (8.3)	0.49 (0.35–0.62) <sup>a</sup>	0.58 (0.44–0.72) <sup>a</sup>	0.09 (–0.04–0.22)		
Letters	2.3 (0.9)	19.5 (7.6)	1.8 (0.7)	12 (4.9)	1.7 (0.8)	10.5 (4.7)	0.43 (0.29–0.58) <sup>a</sup>	0.49 (0.35–0.64) <sup>a</sup>	0.06 (–0.09–0.21)		
Doing notes out of hours	5.1 (1.7)	NA	4.4 (1.8)	NA	4.3 (1.7)	NA	0.28 (0.17–0.39) <sup>a</sup>	0.29 (0.19–0.40) <sup>a</sup>	0.01 (–0.09–0.12)		

<sup>a</sup> Significant at  $p < 0.0001$  Time value = estimated time value in minutes.

across the whole organisation, movement in productivity for the same periods was calculated for the organisation’s portfolio as a whole (<1 %) and for the individual clinics where the AHPs worked (<0 %). That is, the use of the AI scribe appeared to have a positive impact on productivity.

3.5. Patients

3.5.1. Characteristics

157 patient participants volunteered. Mean ( $\pm$ SD) age was 42.3 ( $\pm$ 16.2) years and 45 % were female. 61 % were employed or self-employed, 13 % were retired, 8 % were students with the remaining participants being unemployed (3 %), performing home duties (1 %) or on entitled leave (1 %). 14 % of participants preferred not to say. Participants’ highest level of educational qualifications ranged from school-level education, certificate or diploma (39 %), bachelor degree (24 %) to post-graduate and research higher degree level (18 %). 18 % preferred not to answer this question. Patients’ self-reported familiarity with AI is presented in Table 2. Table 5 summarises patients’ responses (frequencies) to the survey post-appointment where the scribe was used.

3.6. Qualitative findings

15 AHPs aged between 24 and 56 years (mean  $\pm$  SD, 39.0  $\pm$  8.3 years) and 14 patients aged between 24 and 76 years (52.5  $\pm$  15.4 years) were interviewed (Table 6). Three themes common to AHPs and patients, and one theme specific to AHPs, described the perspectives of

participants.

3.7. Themes

3.7.1. Theme 1: improved therapeutic alliance

AHPs and patients reported that using the AI scribe during the appointment improved elements associated with positive therapeutic alliance such as eye contact, attention and being engaged.

Sophie (podiatrist): “... it’s definitely helped, because I can sit and have a conversation with the patient, rather than stopping them and typing something out.. the conversation flowed better.”

Clare (patient): “A lot of times, when I’m talking to a clinician, they’re looking at their computer screen typing while I’m talking and I don’t feel heard. Whereas from the very first-time using AI, I had eye contact and direct conversation, it was great.”

This finding was noted by AHPs who felt they were already efficient with their notes and/or that developing rapport was one of their strengths.

James (exercise physiologist): “... so my notes are often pretty well finished by the time the consult finishes. However, the absolute strength in using AI was that I don’t like having to type while the patient is talking so it meant I could just hit record and focus 100 % of my attention on the patient, which was invaluable.”

3.7.2. Theme 2: reduced administrative burden

AHPs reported that using the AI scribe reduced administrative

**Table 5**  
Patient responses to survey after an appointment where the AI scribe was used.

	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
I was curious about how AI would be used to record my appointment.	1 %	4 %	4 %	26 %	21 %	26 %	16 %
I was initially concerned about how AI was going to be used to record my appointment.	17 %	35 %	5 %	22 %	7 %	5 %	1 %
There seemed to be technical challenges with using AI during my appointment.	38 %	33 %	9 %	12 %	4 %	0 %	1 %
I was satisfied with how AI was used to record my appointment.	0 %	0 %	0 %	18 %	18 %	40 %	18 %
The summary generated by AI of my appointment was helpful.	1 %	1 %	0 %	28 %	18 %	31 %	17 %
The summary generated by AI of my appointment improved my understanding of my management plan.	1 %	2 %	0 %	44 %	18 %	21 %	10 %
I was initially concerned about my privacy.	13 %	28 %	7 %	22 %	12 %	10 %	2 %
I was initially concerned that there might have been technical challenges that would have impacted on my time.	15 %	37 %	9 %	23 %	7 %	4 %	1 %
I trust in AI for use in healthcare.	1 %	4 %	10 %	35 %	13 %	22 %	10 %
Using AI during my appointment had a negative effect on my relationship with my therapist.	48 %	29 %	5 %	10 %	2 %	1 %	1 %
I felt my therapist was able to pay me more attention during the consult because they were using AI for their notes.	2 %	2 %	4 %	18 %	18 %	31 %	20 %
My therapist seemed competent at using AI for recording our appointment.	0 %	1 %	1 %	7 %	11 %	41 %	33 %
I trust my therapist with my treatment.	0 %	0 %	0 %	4 %	5 %	27 %	60 %
My therapist using AI for clinical notes will not affect my decision as to whether to have another appointment with them.	1 %	1 %	1 %	6 %	6 %	31 %	50 %
I am concerned that using AI in health is poorly regulated.	13 %	21 %	10 %	38 %	7 %	4 %	2 %
I am concerned that AI will dehumanise healthcare.	13 %	27 %	13 %	24 %	10 %	5 %	1 %

**Table 6**  
Characteristics of participants involved in the interviews.

	AHPs	Patients
Age (years), mean (SD)	39.0 (8.3)	52.5 (15.4)
Sex (female), n (%)	9 (60)	8 (57)
Profession, <sup>a</sup> n (%)		
Physiotherapist	11 (73)	9 (64)
Podiatrist	3 (20)	4 (29)
Exercise physiologist	1 (7)	1 (7)

<sup>a</sup> For patients, “Profession” denotes the discipline of the AHP the patient consulted.

burden.

Mia (physiotherapist): "I have been a physio for 25 years now and the thing I hate most about being a physio is doing my notes. I would go as far to say that my job satisfaction is now higher, because of the AI. This is a total game changer for our profession."

Amber (physiotherapist): "... for note taking I normally stay back for an hour each day. This is saving me 30 to 45-minutes per day."

Patients also recognised the potential for the scribe to reduce their clinician’s workload, enabling them to focus on patient care.

Charlotte (patient): "I think it’s brilliant. A great way for healthcare professionals to alleviate time constraints and focus more on patient care."

**3.7.3. Theme 3: trust in the patient-clinician relationship**

AHPs and their patients had little concerns about the use of AI.

Ethan (podiatrist): "Yeah, I did trust it [in terms of privacy]. And patients did too. They were happy with that side of it."

Patients’ trust in their clinician extended to confidence in the clinician’s use of the scribe.

Benjamin (patient): "I think it’s also because I trust him. I trust my physio, like I would trust him to be going over and looking at the notes and fixing anything that was wrong, or making any changes."

However, there was a sense from some patients that they may have felt differently if they were sharing what they perceived to be more

sensitive information.

Brooke (patient): "It may have been different if it was a different scenario. Like, if it was a counselling scenario, or a medical scenario for something really personal."

Patients were comfortable consenting to the use of the AI scribe but acknowledged additional information might be of interest to others.

Gemma (patient): "I guess more information about how those notes are being saved, or backed up? Or where they were going? Is it just the physio that holds them? Is there another system? Is it to a cloud? That kind of thing".

**3.7.4. Theme specific to AHPs: AHPs appreciated the scribe for different aspects of clinical documentation**

Different AHPs appreciated the scribe for different aspects of clinical documentation.

Eleanor (physiotherapist): "I loved it, for the patient interview, I feel it is really good at keeping and summarising information."

Theodore (physiotherapist): "... the education part of the treatment - that is the best that’ll ever be written, it’s better than what I would write, more detailed."

Oliver (physiotherapist): "... the big win for me is actually correspondence and letters, and I think this is marketing to the perfect degree. Because you’re able to keep your referrers, your surgeons, or your GPs informed more regularly because it’s no longer taking ages to write letters anymore - it’s not taking 20-minutes to prepare a letter or even 10-minutes. It’s like 3–5 minutes and done."

AHPs did not find using the scribe as useful for subsequent appointments as it was for initial appointments.

Theodore (physiotherapist): "I definitely use it every initial without fail. I haven’t really got into a habit of using it for subsequents, because I just think it’s so much easier to copy the note and then change the objective measures and subjective."

**4. Discussion**

This exploratory study is the first to evaluate the impact of using an

AI scribe on time spent on clinical documentation and productivity amongst AHPs working in Australian private practice and the experience and perspectives of AHPs and patients in this context. Our findings demonstrate that using an AI scribe reduced time spent on clinical notes and letters and how often AHPs were doing notes out of hours. There was a significant reduction in burden related to clinical administration after 6-weeks of using the scribe. The reduction of administrative workload, and the impact this could have on patient care, was noted by AHPs and patients during the interviews. AHPs and patients reported that using the scribe contributed to a positive therapeutic alliance.

Clinical documentation remains one of the most important yet one of the most burdensome aspects of being a health professional (Chipchase et al., 2021; Quiroz et al., 2019; Mishra et al., 2018). This study showed using an AI scribe significantly reduced time spent on clinical documentation and that these improvements were realised at 6-weeks with no further significant changes at 3-months. Based on AHPs' self-report data, we estimate that AHPs were saving approximately 17-min per day on clinical notes and 9-min per day on letters. Whilst this may not seem significant, with only a brief introduction on how to use the scribe and no further formal training during the study period, AHPs were able to implement and benefit from using the scribe in their daily practice. There was also a significant reduction in how often AHPs were doing their notes out of hours and again, this improvement was realised by 6-weeks. These findings were supported by the themes from the interviews during which AHPs used phrases like “total game-changer” to describe the impact using the AI scribe had on their job satisfaction. The reduction in time spent on, and burden associated with, clinical documentation aligns with findings of studies involving physicians and medical students (van Buchem et al., 2024), but this is the first study to assess the impact of using an AI scribe for AHPs. Further studies evaluating whether time saved could be enhanced with more comprehensive training around how to optimise the use of AI scribes and suggestions on how best to implement it in practice are warranted.

Patients noted the AI scribe's potential for reducing their AHP's administrative workload which in turn would allow their clinician to focus more on their care. Patients expressed curiosity rather than concern about the use of AI during their consult and, because they trusted their AHP, they trusted what their AHP was proposing. There was a sense, however, that they may have felt differently if they were sharing what they perceived to be more sensitive information which may affect the information exchanged during a patient-clinician interaction. Previous studies have shown that AI scribes generate high-quality and accurate notes acceptable by both clinicians and patients, although still require review and editing by clinicians (Tierney et al., 2024). In the present study, AHPs were not using the scribe frequently to write patient summaries although patient participants reported finding the summaries helpful and improved their understanding of their management plan. Further training on how AHPs could better utilise the scribe to enhance communication with their patient may be helpful.

This study found that using an AI scribe had a positive impact on factors considered to contribute to therapeutic alliance, such as eye contact, listening, and being engaged, and this positive impact was reported by AHPs and patients. The benefit of being able to “just listen to my patient without having to type notes” was reported by clinicians who felt that “developing rapport was already one of my strengths but this was next level” and who were already efficient at typing their patients' notes. Patients noted their clinicians could be “more engaged” and patients agreed/strongly agreed that the use of an AI scribe would not influence their decision as to whether to make another appointment with their clinician. Whilst previous studies have suggested that AHPs and/or patients have concerns about privacy, confidentiality and data breaches (Al-Mistarehi et al., 2023), technical concerns (van Buchem et al., 2024), and concerns about AI in general (Rony et al., 2024), this was not the case in the present study.

Whilst AHPs reported significant time saved on clinical documentation and a reduction in associated burden, further evaluation is

required to determine whether using an AI scribe has a positive and lasting effect on job satisfaction and engagement and on factors relating to medicolegal compliance (e.g., accuracy and quality of notes). The AHPs in this study found the AI scribe beneficial for different reasons – some appreciated it for the initial assessment but not for follow-up consultations whereas others found the ability to generate patient summaries and doctor's letters quickly and efficiently the most beneficial aspect. Creating opportunities for AHPs to share how they use the scribe most effectively with one another may be of benefit. It would also be useful to compare the accuracy between self-reported time spent on documentation/time saved with objective measurements of time spent on documentation. Whilst during the interviews some participants reported that they received a higher number of referrals from medical professionals due to the fact they were able to correspond more regularly with them, this was not formally measured. Future studies could evaluate whether the efficiency gained from using an AI scribe improves interprofessional communication and referrals.

This study showed that there was a 5.8 % increase in productivity amongst clinicians using the scribe. There is a real financial cost associated with using AI scribes, usually in the form of a per/head fee or enterprise subscription, which must be weighed against the impact on productivity, particularly in private practice settings where revenue is directly linked to the number of patients seen. Future studies triangulating administrative burden, job satisfaction, engagement and productivity would help organisations determine an acceptable return on investment. Additionally, future studies should consider the use of a validated questionnaire to measure therapeutic alliance (Hatcher and Gillaspie, 2006).

A limitation of this study was that all AHPs were from one organisation, which may limit the generalisability of the findings. There was also potential sampling bias of the AHPs and patients who volunteered to participate. To gain a greater understanding of the use of AI in private practice, future studies should consider AHPs who do not wish to incorporate an AI scribe in their practice and patients who have concerns about an AI scribe being used during their appointment. We also acknowledge that the purposive sampling strategy for selecting AHP interview participants may limit the transferability of the findings. It is also important to note that, irrespective of the technology used, AHPs remain responsible for keeping accurate and complete healthcare records and must ensure they understand their obligations when using AI in healthcare (Australian Health Practitioner Regulation Agency, 2024).

## 5. Conclusion

This study explored the impact of an AI scribe on time spent on clinical documentation, productivity and the perspectives and experiences of AHPs working in Australian private practice and their patients. Findings suggest the use of an AI scribe reduces time spent on clinical notes and burden associated with clinical documentation and has a positive impact on clinician-patient interactions. Despite the limitations of this study, the positive outcomes suggest future studies investigating the effect of more comprehensive training and support during implementation and quantifying the impact of using a scribe on the quality and accuracy of clinical documentation in allied health are warranted.

## CRedit authorship contribution statement

**Kerrie Evans:** Writing – review & editing, Writing – original draft, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Amy Papin-niemi:** Writing – review & editing, Investigation, Formal analysis, Data curation, Conceptualization. **Bernd Ploderer:** Writing – review & editing, Methodology, Investigation, Formal analysis, Conceptualization. **Vaughan Nicholson:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis. **Tom Hindhaugh:** Writing – review & editing, Investigation, Formal analysis, Data

curation. **Viana Vuvan:** Writing – review & editing. **Nicholas Cowley:** Writing – review & editing, Formal analysis. **Amina Tariq:** Writing – review & editing, Formal analysis. **Hayley Thomson:** Writing – review & editing, Project administration, Methodology, Investigation, Formal analysis, Data curation.

## Institutional approval

This study was approved by The University of Sydney Human Research Ethics Committee (Project No: 2024/HE000245).

## Disclosure statement

KE, HT, AP and TH are employees of the organisation from within which this study took place. However, their affiliation with the organisation did not influence the study design, data collection and analysis, decision to publish, or manuscript preparation. The remaining authors contributed independently to this work, ensuring unbiased data interpretation and conclusions.

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## Appendix A. Supplementary data

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