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# Patient Preferences for Telerehabilitation Compared to In-Person Physiotherapy: A Binary Discrete Choice Experiment

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## ABSTRACT

**Objective:** To investigate the key factors that influence patients' preferences for telerehabilitation consultations in comparison to traditional in-person physiotherapy consultations and explore how these factors vary across different patient demographic characteristics.

**Methods:** A binary discrete choice experiment was conducted with 152 participants who had participated in physiotherapy. The primary outcome measures were the attributes related to telerehabilitation and in-person consultations, including appointment duration, cost, distance, purpose, therapist, time of day, and wait time. Participants' preferences were assessed based on their choices in the binary choice experiment.

**Results:** The study did not identify any attributes of consultations that clearly influenced patients' preference for telerehabilitation versus in-person physiotherapy. There was a trend towards preferring telerehabilitation with decreased appointment wait times and lower monetary costs. Patient demographics revealed that individuals with a single chronic health condition were clearly less inclined towards telerehabilitation (OR = 0.5, 95% CI 0.27–0.93), as were those located in outer regional locations (OR = 0.34, 95% CI 0.12–0.99). Additionally, respondents preferring a short 5 km travel distance showed markedly lower preference for telerehabilitation ($\beta_{\text{Telerehab}\times\text{Distance\_5km}} = -0.94$, 95% CI −4.34 to −0.51, $p < 0.001$).

**Conclusion:** To enable broader access to physiotherapy via telerehabilitation, clinicians, and policymakers should prioritize offering timely and cost-effective sessions. The results of this study can then inform the development of telerehabilitation offerings that are better matched to patient preferences.

## 1 | Introduction

Telerehabilitation, using telecommunications technology for the remote delivery of rehabilitation services to patients in their homes or other convenient locations (Brennan, Mawson, and Brownsell 2009) has emerged as an important service delivery method in physiotherapy. It offers the potential to improve accessibility, convenience, and cost-effectiveness of rehabilitation services (Kairy et al. 2009; Eze, Mateus, and Cravo Oliveira Hashiguchi 2020). The use of telerehabilitation has been comprehensively explored in recent years, with research focussing on clinical effectiveness, patient satisfaction,

acceptance, and challenges and opportunities for adoption (Cottrell et al. 2020; Rabanifar et al. 2021).

Understanding the factors that influence patients' acceptance and adoption of telerehabilitation is crucial for optimizing its implementation in clinical practice. Previous research has identified various factors that impact patients' willingness to engage in telerehabilitation services (Russell et al. 2015). Factors include technological aspects such as ease of use, accessibility of equipment, and the level of technical support provided (Pramuka et al. 2009; Ramachandran et al. 2022; Tsai et al. 2019). Additionally, patients' perceived effectiveness and trust in telerehabilitation and the provider play key roles in their acceptance of and preference for this mode of service delivery (Bailey et al. 2021; Castro et al. 2023; Yee, Bajaj, and Stanford 2022; Tauscher et al. 2023).

Patient demographics may also influence the propensity for telerehabilitation adoption in physiotherapy. Age, gender, socioeconomic status, and geographical location have been identified as important factors that shape patients' attitudes and willingness to engage with health care services (Hardie et al. 2021). In general medicine, older adults showed strong preferences for telehealth services that were comprehensive, relatively inexpensive and targeted those who were a greater distance from hospitals or clinics (Kaambwa et al. 2017). Understanding the interactions between these demographic characteristics and patients' preferences for telerehabilitation in physiotherapy can inform the development of tailored strategies to ensure the optimal adoption and utilization of this service delivery method.

This study aims to investigate the interaction between demographic and patient preference factors for telerehabilitation in physiotherapy using a binary discrete choice experiment. This research will provide valuable insights to guide the integration of telerehabilitation into physiotherapy practice and improve patient-centred care.

### 1.1 | Research Question

1. What are the key factors that influence patients' preferences for telerehabilitation consultations in comparison to traditional in-person physiotherapy consultations, and how do these factors vary across different patient demographic characteristics?

## 2 | Methods

### 2.1 | Study Design

Participant preferences for the choice between an in-person or a telerehabilitation physiotherapy consultation were elicited using a discrete choice experiment (DCE). This methodology is based on random utility theory, a model originally developed in economics (McFadden 1973), which explains how individuals make decisions based on their preferences and the characteristics of the options available to them. In our study, we used this model to determine what features of physiotherapy consultations influence the decision to select an in-person versus a telerehabilitation service delivery model.

A labelled DCE was employed, with the two labelled alternatives being 'in-person' and 'telerehabilitation'. The full design consisted of 33 possible scenarios or choice sets. The design includes seven attributes, each attribute having between two and four levels. To generate attributes and levels (Table 1), we examined existing literature (Coulibaly, Poder, and Tousignant 2022) and selected and modified attributes and levels deemed relevant specifically to physiotherapy based on physiotherapy telerehabilitation research and author expertise. One attribute (distance to travel) was specified as alternative specific, as it only applies to the 'in-person' alternative.

The levels of the attributes for the two alternatives (in-person vs. telerehabilitation) were systematically varied using a D-efficient experimental design. A D-efficient experimental design maximises the amount of information obtainable about the attributes of the alternatives by minimising the covariances between parameter estimates using prior information about their likely distribution using data collected from a pilot study (Rose et al. 2013). Such designs require a much smaller sample size than a random or orthogonal design (Rose et al. 2013). The D-error provides a normalised measure of experimental design efficiency, accounting for the number of parameters estimated in the conditional logit model. Although there is no threshold to define a D-optimal design, best practice encourages the selection

**TABLE 1** | Discrete choice experiment attributes and levels.

| Attributes | Levels |
|---|---|
| Therapist | Your usual clinician |
| | New clinician |
| Wait time until appointment | 1 day |
| | 1 week |
| | 1 month |
| Time of day of appointment | 8 AM |
| | 12 PM |
| | 2 PM |
| | 6 PM |
| Duration of appointment | 15 min |
| | 30 min |
| | 60 min |
| Distance to travel (in-person only) | 5 km |
| | 20 km |
| | 35 km |
| Purpose of the appointment | Initial consult (assessment, diagnosis) |
| | Follow up (treatment, review) |
| Cost of the appointment | $50 |
| | $75 |
| | $100 |

of a design with the minimal D-error (Rose et al. 2013). We obtained a design with a D-error score of 0.02 with 0% attribute level imbalance and minimum sample size requirement of 55 calculated using Ngene (2018), which applies a parametric approach to sample size determination.

After being provided with instructions, each respondent was presented with 12 choice sets, randomly selected from the full design. Each choice set consisted of a pair of labelled alternatives (one for in-person and one for telerehabilitation), where each hypothetical alternative was described by different levels of the seven attributes (duration of appointment, cost, etc.). Participants were asked which of the two labelled alternatives they would select based on the levels of the attributes provided. Participants had to complete all 12 choice sets to be included in the analysis. An example of a choice set is presented in Figures 1–3.

Pilot data were generated from 16 initial participants to generate priors (initial estimations of parameters) to generate the D-efficient design, allowing us to use a parametric approach to determine the minimum sample size required (Rose et al. 2013; de Bekker-Grob et al. 2015). We were, however, unable to significantly improve upon our original design, so data collection proceeded with the initial pilot responses included in the final dataset. Pilot participants were also asked for feedback on the design but no changes were recommended.

## 2.2 | Subjects

Community dwelling adults residing in Australia were recruited using a panel provided by SurveyEngine (GmbH) in May 2023. Respondents were asked to indicate their age, country of residence and which types of health professions they had consulted in the past (from a list of 11 professions including physiotherapy, speech pathology, occupational therapy, etc. which was displayed in a random order for each respondent). People were eligible to participate only if they indicated they had consulted a physiotherapist. Those who indicated they were under the age of 18 or did not live in Australia were excluded from the dataset.

## 2.3 | Procedure

All data were collected online via an anonymous survey. Informed consent was provided prior to survey completion. The survey comprised five sections such as screening questions, the discrete choice experiment, demographic data collection, socioeconomics, telehealth access methods and health conditions. Only participants who were eligible after screening proceeded to the other sections of the survey.

In addition to age and country of residence collected for screening for eligibility, sociodemographic data collected included gender, level of education, identification as Aboriginal or Torres Strait Islander, level of income, level of employment, postcode (to identify urban vs. regional and remote participants), access to equipment and devices (laptops, desktop computers, etc.), internet connection types (e.g., broadband), presence of any chronic health conditions and use of mobility aids. Participants were also asked to provide a rating of their comfort using technology on a 5-point rating scale (ranging from not at all comfortable to comfortable), and to rate their perceived importance of having a strong relationship with their healthcare practitioner on a 5-point Likert item (ranging from strongly disagree to strongly agree).

## 2.4 | Data Analysis

Analyses were conducted using a flexible form of mixed logit model using 1000 Halton draws (McFadden et al. 2000). The model follows a panel specification to account for correlations between choices within an individual, and additionally allows for theoretically driven specifications that extract specific correlations between the error components of the model. In our case, this comprised a correlation between participants utility for distance to travel and the telerehabilitation option to be considered. All attributes are specified with fixed effects with normal distributions, except for an endogenously defined latent variable that captures the unobserved heterogeneity for distance to travel which has a Gaussian distribution (Rungie, Coote, and

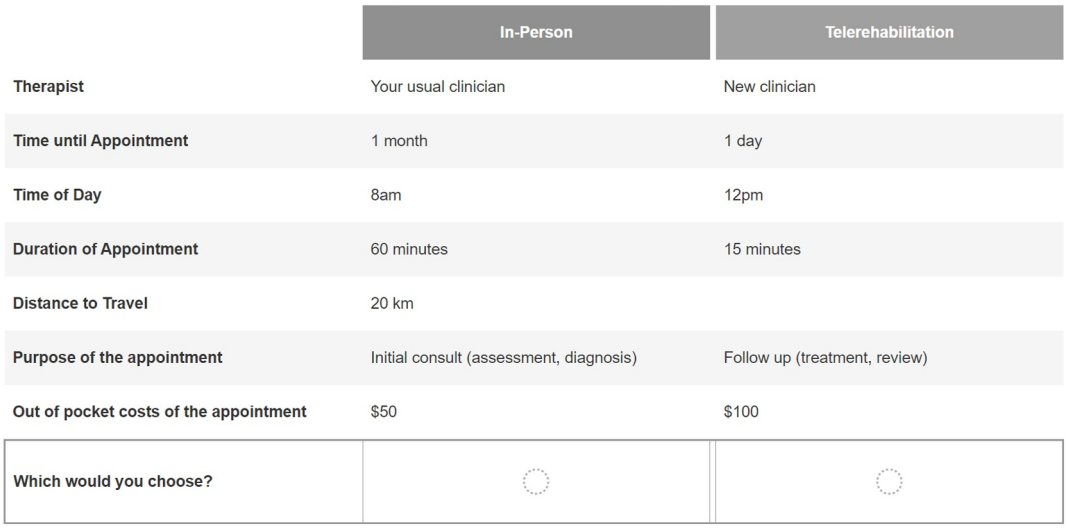


**FIGURE 1** | Example of choice set.

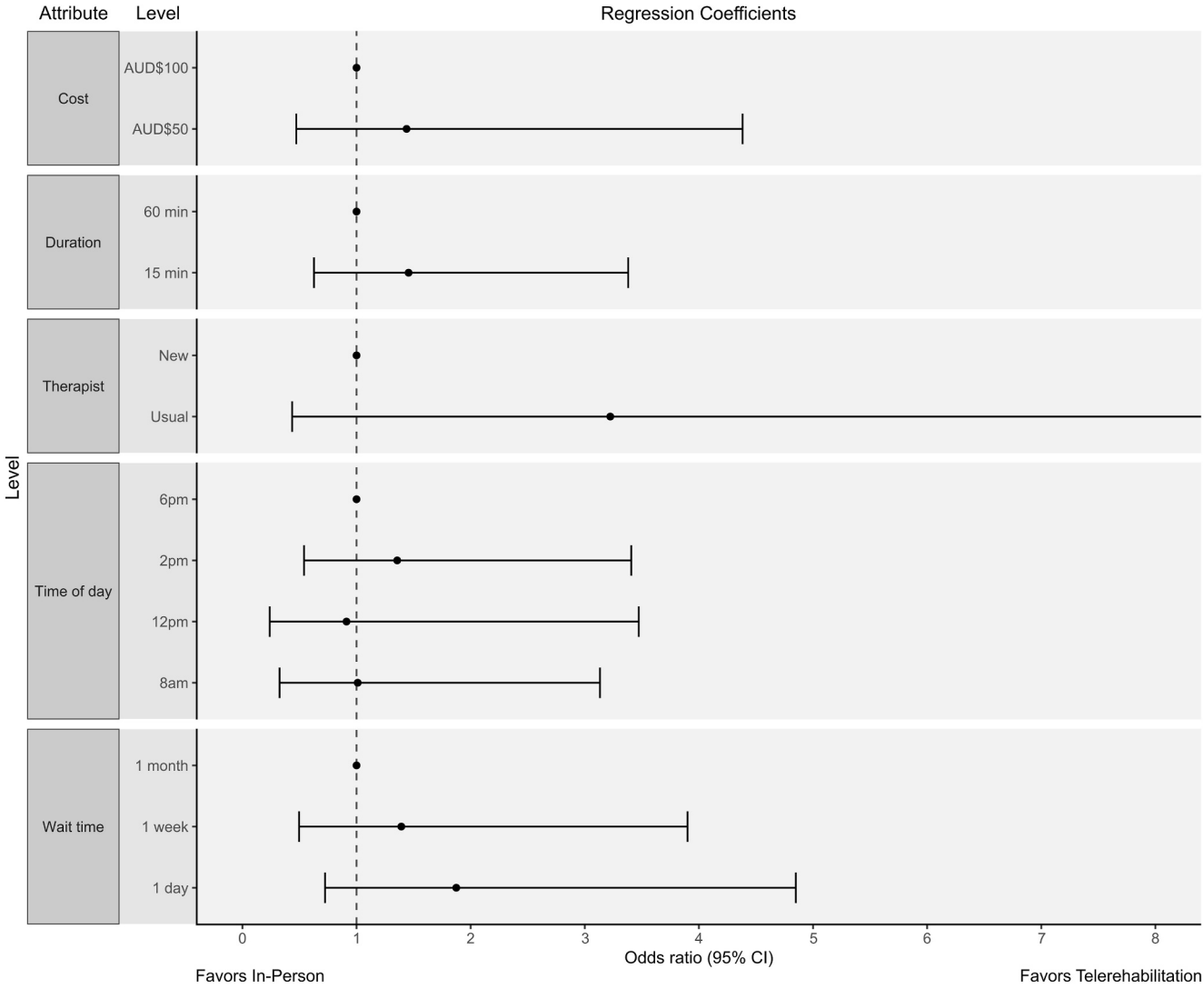


**FIGURE 2** | Effect of attributes on choice between telerehabilitation and in-person appointments.

Louviere 2012). The observable interaction effects between each of the estimable attributes and the telerehabilitation alternative were estimated. A latent variable approach was used as a way of estimating the unobservable interaction between distance to travel and the telerehabilitation option as this option does not have any level of distance to travel. That is, the utility for the alternate specific constant for the telerehabilitation labelled alternative is regressed onto a latent variable associated with heterogeneity for distance to travel. Interaction effects between utility for the telerehabilitation option and participants' socio-demographic characteristics were also entered into the model specification (these included education, income, employment, location, availability of broadband internet connection, chronic health condition status, use of mobility aids and their perception of the importance of maintaining a strong relationship with their healthcare practitioner).

The aggregate preferences are presented as $\mu_\varepsilon$ coefficients (log odds) alongside their respective standard errors. The attribute levels are dummy coded, such that the interpretation of the results is made relative to a reference level. A positive (negative) value of $\mu_\varepsilon$ indicates the utility for an attribute level is preferred (not preferred) to the reference level. Odds ratios and their respective confidence intervals for each attribute level preference and interaction effects are also reported. Model fit is evaluated using the log-likelihood for the model, Akaike's information criterion (AIC) and McFadden's pseudo $R^2$. The main effects are denoted using $\mu_\varepsilon$ and the effects of a latent variable are denoted using $\beta$ (Rungie, Coote, and Louviere 2011). Estimation was conducted using R (R version 4.2.1, R Core Team, Vienna, Austria).

## 3 | Results

### 3.1 | Participants

After screening for eligibility (adults located in Australia who had consulted with a physiotherapist), the final sample comprised 152 individuals, of whom 76% ($n = 115$) identified as females with an average age of 38.6 years. The median completion time was 5 min. Summaries of respondent socio-demographic characteristics are provided in Tables 2 and 3.

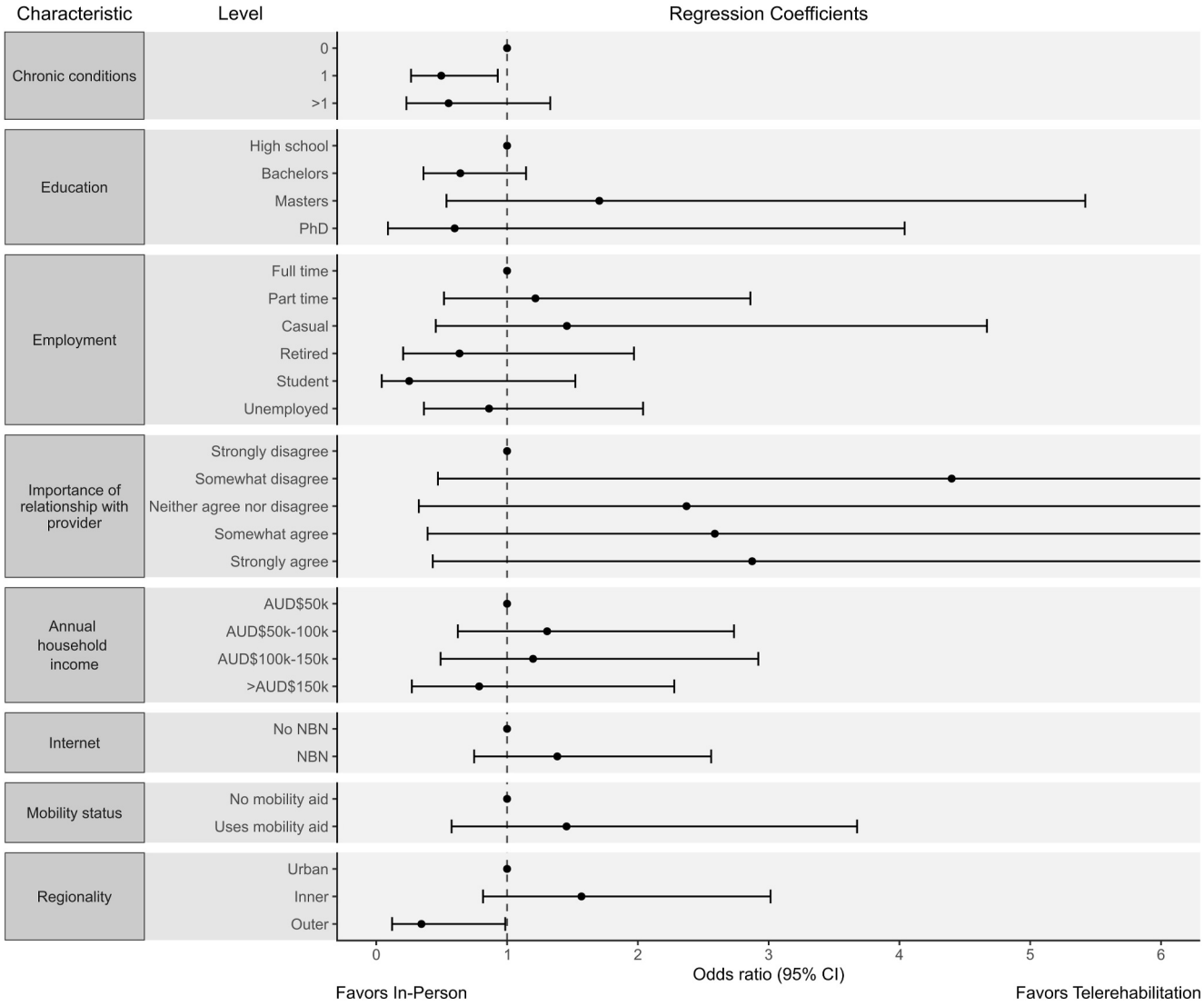


**FIGURE 3** | Correlation between sociodemographic characteristics and choice between telerehabilitation and in-person appointments.

## 3.2 | Main Outcomes

The final model has acceptable levels of fit to the data, with convergence achieved with a log-likelihood value of −1023.40, McFadden's pseudo-*R* (Kairy et al. 2009) of 0.19 and AIC of 2134.80 (Table S1). We treated each of the attributes as categorical variables; hence, they are interpreted relative to an omitted reference level (indicated in parentheses below) to give scale to the estimates. Participants indicated an overall preference for in-person (vs. a telerehabilitation option), though the evidence is uncertain ($\mu_{\text{telerehab}} = -2.22$, 95% CI –4.81 to 0.37, $p = 0.09$). The most preferred type of physiotherapy consultation (overall) is one that is available within 1 day (vs. 1 month), within 5 km (vs. 35 km), or costs AUD$50 (vs. AUD$100) ($\mu_{\text{wait\_1day}} = 0.63$, $p = 0.02$; $\mu_{\text{distance\_5km}} = 0.76$, $p < 0.001$; $\mu_{\text{cost\_50AUD}} = 0.87$, $p = 0.005$). We did not find any significant effects on utility for the two alternatives given variations in the other attributes studied (usual vs. new therapist, time of day, duration of appointment or purpose of appointment).

None of the estimated interaction terms between attributes and the telerehabilitation alternate-specific constant revealed any statistically significant effects due to considerable uncertainty in the results from the model. For the sociodemographic characteristics, respondents who live in outer regional areas showed a statistically significant disutility for the telerehabilitation mode ($\mu_{\text{Telerehab}\times\text{OuterRegional}} = -1.06$, $p = 0.04$), as did respondents with one chronic health condition ($\mu_{\text{Telerehab·1\_ChronicHealthCondition}} = -0.70$, $p = 0.03$). With very high uncertainty, none of the other sociodemographic traits had statistically significant interaction effects (education, income, employment, type of internet connection, use of mobility aids or opinions of the importance of maintaining a relationship with one's healthcare practitioner; Table S1).

We found a statistically significant latent correlation between utility for distance to an in-person appointment and utility for a telerehabilitation appointment. Specifically, there is a negative relationship between heterogeneity in utility for a nearby appointment (i.e., one within 5 km) and preference for a telerehabilitation appointment ($\beta_{\text{Telerehab}\times\text{Distance\_5km}} = -0.94$, 95% CI −4.34 to −0.51, $p < 0.001$). As these parameters are estimated as structural coefficients, a separate parameter is estimable for each level of distance (including the reference level used

**TABLE 2** | Sociodemographic characteristics of respondents.

| Characteristic | Participants ($n$ = 152) |
|---|---|
| Gender, $n$ (%) | |
| Woman/female | 115 (76) |
| Man/male | 23 (23) |
| Non-binary | 2 (1) |
| Age (year), mean (SD) | 38.19 (15.2) |
| Age groups (year), $n$ (%) | |
| 18–64 | 137 (90) |
| ≥ 65 | 15 (10) |
| Indigenous, $n$ (%) | |
| Non-Indigenous Australian | 146 (96) |
| Aboriginal | 5 (3) |
| Torres strait islander | 1 (1) |
| Education, $n$ (%) | |
| High school | 75 (49) |
| Bachelor | 66 (43) |
| Masters | 8 (5) |
| PhD | 3 (2) |
| Personal yearly income (AU$), $n$ (%) | |
| < $50,000 | 33 (22) |
| $50,000–$99,000 | 58 (38) |
| $100,000–$149,999 | 41 (27) |
| > $150,000 | 29 (13) |
| Employment, $n$ (%) | |
| Full time | 75 (49) |
| Part time | 19 (13) |
| Casual | 9 (6) |
| Retired | 12 (8) |
| Student | 3 (2) |
| Unemployed | 34 (22) |

**TABLE 3** | Other characteristics of respondents.

| Characteristic | Participants ($n$ = 152) |
|---|---|
| Device access, $n$ (%) | |
| Landline phone | 34 (22) |
| Mobile phone | 150 (99) |
| Tablet/iPad | 93 (61) |
| Laptop/Macbook (without webcam) | 39 (26) |
| Laptop/Macbook (with webcam) | 62 (41) |
| Desktop computer (without webcam) | 41 (27) |
| Desktop computer (with webcam) | 37 (24) |
| None of the above | 0 (0) |
| Internet connection, $n$ (%) | |
| Dial up | 4 (3) |
| ADSL | 10 (7) |
| National broadband network (nbn) | 119 (78) |
| Mobile internet (3/4/5g) | 71 (47) |
| Do not have internet at home | 1 (1) |
| Other (satellite) | 2 (1) |
| Comfort using technology (1–5), $n$ (%) | |
| Not at all comfortable | 0 (0) |
| Somewhat uncomfortable | 6 (4) |
| Neither comfortable nor uncomfortable | 10 (7) |
| Somewhat comfortable | 64 (42) |
| Comfortable | 72 (47) |
| Chronic health conditions | |
| No | 90 (59) |
| Yes, 1 chronic health condition | 41 (27) |
| Yes, > 1 chronic health condition | 21 (14) |
| Use a mobility aid | |
| No | 137 (90) |
| Yes | 15 (10) |
| It is important for me to have a strong relationship with my healthcare practitioner | |
| Strongly disagree | 3 (2) |
| Somewhat disagree | 5 (3) |
| Neither agree nor disagree | 16 (11) |
| Somewhat agree | 59 (39) |
| Strongly agree | 69 (45) |

elsewhere in the model). Neither of the parameters for the higher level of distance (25 and 35 km) revealed any significant correlation with the telerehabilitation alternative.

## 4 | Discussion

### 4.1 | Main Findings

The findings of this study shed light on the complex interplay of factors influencing patients' preferences for telerehabilitation consultations compared with traditional in-person physiotherapy consultations. This binary choice experiment provides some understanding of when patients may be more likely to elect to have telerehabilitation consultations in clinical practice and these findings may be useful for clinicians to understand when developing, or offering, a telerehabilitation service. Our findings indicate that overall patients prefer physiotherapy consultations that are available within 1-day (rather than 1 week or 1 month), are within 5 km (rather than 25 or 35 km) and are AUD$50 (rather than AUD$100). These findings are logical, unsurprising and consistent with prior DCEs, indicating a strong preference for medical consultations with low waiting times (Chudner, Drach-Zahavy, and Karkabi 2019) and low cost

(Kaambwa et al. 2017; Snoswell et al. 2021). This also concurs with existing research indicating that timeliness, convenience and affordability are important aspects of healthcare from the consumer perspective (Toll et al. 2022; Cranen et al. 2017; Tyagi et al. 2018).

While we did not find a clear preference for other attributes, such as the therapist, time of day, duration or purpose of the appointment, the results of the study are not certain enough to conclude that these factors are unimportant to patients. This contrasts with prior DCEs that have found a strong preference for not travelling to medical appointments during rush hour (Gilbert et al. 2021) and for consultations to be with one's usual clinician (Chudner, Drach-Zahavy, and Karkabi 2019; von Weinrich, Kong, and Liu 2022). However, confidence intervals for these factors in the present study are broad enough to be compatible with quite meaningful effects (e.g., odds of selecting an appointment with one's usual therapist could be a third of the odds of a new therapist or could be more than 2.5 times higher). It is also plausible that strong individual preferences exist but are too heterogenous to allow a pronounced effect to be detected at the group level.

When modelled factors (attributes and levels) are held constant at their reference level, our findings suggest an overall preference for in-person physiotherapy, with an odds ratio of 0.11 for telerehabilitation relative to in-person. However, the relatively wide 95% confidence interval (0.01–1.39) indicates that the odds of selecting telerehabilitation could be 100 times lower or 39% higher than the odds of selecting in-person. Although the precision of this estimate is limited, the direction of the observed effect aligns with the findings of a prior DCE into telehealth, which also found an overall preference for in-person (von Weinrich, Kong, and Liu 2022). Patients often view telerehabilitation as less desirable, even 'inferior', and acceptable as a fallback mode of delivery when in-person physiotherapy is not available. Reasons for this include the perception that physiotherapy is a 'hands-on' profession (Malliaras et al. 2021) and related perceptions regarding telerehabilitation and its usefulness and treatment effectiveness (Almojaibel et al. 2021), ability to provide personal interaction, lack of familiarity with technology and privacy concerns among clinicians (Bennell et al. 2021) and patients (Tyagi et al. 2018). Thus, even with the uncertainty in our estimate, the general trend observed here resonates with existing evidence.

Importantly, this study suggests some possible factors which may increase the likelihood of patients opting to receive telerehabilitation over in-person physiotherapy. Results for waiting time to next appointment, though uncertain and not reaching the traditional threshold for statistical significance, do exhibit a potential trend: as waiting time increases, preferences for in-person consultations also increase. Or, stated another way, patients may prefer a telehealth appointment if they need to wait longer for an in-person appointment. This aligns somewhat with a prior DCE, which found respondents placed a higher value on low waiting time for video consultations relative to in-person (von Weinrich, Kong, and Liu 2022). Similarly, the present results also suggest that high appointment costs cause patients to prefer in-person sessions over telerehabilitation more than low-cost appointments. Should these observations hold true, a potential explanation could be that patients perceive in-person appointments as more valuable, warranting greater monetary or temporal costs (Chua et al. 2022; Predmore et al. 2021). Accordingly, when clinicians are setting up a telerehabilitation service, offering patients a timely appointment (e.g., in the same week/within one day) could increase the odds of patients choosing a telerehabilitation consultation. Our findings are also consistent with previous findings that patients could be more amenable to a telerehabilitation consultation when it is a short appointment, with longer appointments tending to shift preferences towards in-person (Gilbert et al. 2022). Together these findings raise some interesting hypotheses that could be explored in future studies to more precisely estimate the degree to which appointment attributes could influence choices between telerehabilitation and in-person physiotherapy.

Findings from this study also provide insight into patient demographics that may influence preferences for telerehabilitation. Individuals with a single chronic health condition, compared to those without any chronic health conditions, appeared less inclined to opt for telerehabilitation over in-person physiotherapy, with an odds ratio of 0.5 (95% CI 0.27–0.93). However, when considering individuals with multiple chronic conditions, the data was less clear. Despite a similar point estimate, the wide confidence interval indicates considerable uncertainty. This could be due to only 14% of the respondents having multiple health conditions in this dataset.

Those respondents who used a mobility aid preferred telerehabilitation over in-person with an odds ratio of 1.45. However, perhaps as only 10% of our sample used mobility aids, the confidence interval was very wide, ranging 0.58–3.68. Thus, this result must be interpreted cautiously, although it would concur with both a previous DCE that found that those with restricted mobility had higher odds of preferring video consultations (OR = 2.60, $p < 0.001$; Gilbert et al. 2022) and existing evidence showing that those with mobility issues had higher odds of using telehealth during the pandemic (OR = 1.28 95% CI 1.13–1.44; Friedman et al. 2021).

Geographically, those located in outer regional areas, compared to those in urban areas, seemed less likely to choose telerehabilitation over in-person, with an odds ratio of 0.34 (95% CI 0.12–0.99); however, confidence cannot exclude the possibility of a negligible effect. In contrast, for individuals in inner regional areas, the preference was for telerehabilitation over in-person (OR = 1.57, 95% CI 0.82 and 3.01), but again with such uncertainty in the estimate, no effect at all is still compatible with the result. Despite this uncertainty, which may be due to a sample that was overwhelmingly urban, the possibility of differences between regional areas could be explored in greater detail in future research to see whether potential explanations relate to differences in connectivity or availability of healthcare services.

This study used a latent variable approach to attempt to capture a correlation between the underlying preference for distance to appointments and the preference for telerehabilitation over in-person. Respondents with a high utility for the 5 km travel distance to in-person appointments (i.e., who preferred this distance more strongly), tended to have a decreased preference

for telerehabilitation ($\beta_{\text{Telerehab}\times\text{Distance\_5km}} = -0.94$, 95% CI −4.34 to −0.51, $p < 0.001$). Interestingly, this implies that if someone strongly prefers shorter travel distances (5 km) for in-person appointments, they are less inclined to choose telerehabilitation despite that option involving no travel at all.

However, with travel distances of 25 or 35 km, this relationship was diminished and statistically indistinguishable from no effect, implying that an individual's preference for travelling longer distances for in-person appointments does not correlate with their preference for telerehabilitation over in-person physiotherapy. This finding is somewhat counterintuitive, as the convenience of not having to travel to physiotherapy is perceived to be a key benefit of telerehabilitation among older Australians (Shulver et al. 2017). Potentially, individuals who want in-person sessions to be very nearby might perceive them as having a unique, non-substitutable value and be more willing to sacrifice the convenience of telerehabilitation for the perceived benefits of in-person sessions. It may also be that participants do not readily consider travel costs in a stated choice experiment. Indeed, a recent DCE looking at general practice telehealth in Germany also found no statistically clear effect of usual travel time to their general practitioner (von Weinrich, Kong, and Liu 2022).

We conducted a labelled DCE design which allowed for interactions between attributes and the preference for the labels (telerehabilitation and in-person) to be modelled. A further strength is the latent variable approach, which allowed for distance to travel to be incorporated into the choice sets solely for the in-person label in each choice set. Prior DCEs investigating the effect of attributes related to consultations on preferences for telehealth have tended to not include travel (Chudner, Drach-Zahavy, and Karkabi 2019) or included the typical travel costs faced by respondents as a demographic factor rather than part of the choice experiment (von Weinrich, Kong, and Liu 2022; Gilbert et al. 2022). Incorporation of travel distance as an experimental attribute rather than a demographic factor allowed levels to be directly manipulated to explore the latent correlation between utility for distance to in-person appointments and utility for a telerehabilitation appointment.

### 4.2 | Limitations

The findings of the present study should be interpreted with caution due to certain limitations. Firstly, the sample size of 152 respondents in the present study was smaller than some other DCEs investigating patient preferences for telehealth, which had 350 (von Weinrich, Kong, and Liu 2022) or 500 respondents (Chudner, Drach-Zahavy, and Karkabi 2019), though it is larger than several other such studies (Snoswell et al. 2021; Gilbert et al. 2022; Park et al. 2011; Cranen et al. 2017). It is likely that more precise estimates could have been obtained with a larger sample size. While our sample exceeded the minimum sample size required for our design as calculated using the parametric approach (Rose et al. 2013), the use of minimum sample sizes may prevent the detection of small effects (de Bekker-Grob et al. 2015). Secondly, the majority of the sample were comfortable with technology and the average age of respondents was 38.6 years. Although this is comparable to the average age of 40 years in the study by Chudner, Drach-Zahavy, and Karkabi (2019), it is younger than the average age of 52 years in Gilbert et al. (2022) and implies that the present findings may not represent the views of older patient groups. This study is further limited, in the same way as a prior DCE (Gilbert et al. 2022) by most respondents being women, which potentially limits the applicability of the present findings to patients who are not women but reflects gender-based differences observed in health-seeking behaviours (Thompson et al. 2016). The study also focussed solely on the perspectives of current or former physiotherapy patients, neglecting the views of other stakeholders such as physiotherapists or policymakers, which may differ. Finally, as with all DCEs, these results are based on stated preferences and may not accurately represent actual real-world preferences.

Future investigations should be conducted to capture a comprehensive picture of telerehabilitation preferences across diverse demographic groups to ensure it better reflects the wider population of physiotherapy patients. Given the skew towards younger and technologically confident women in the current study, a deliberate effort should be made to achieve a balanced gender distribution and recruit older participants with varied levels of technological literacy. Lastly, given the nuanced insights related to geographical regions, a targeted study that juxtaposes the telerehabilitation preferences of urban, inner regional, and outer regional populations within Australia is warranted. This could include a qualitative investigation of regional Australians to unearth more granular insights into physiotherapy modality preferences, potentially revealing distinct regional barriers and facilitators. Finally, future studies should aim for a larger sample size to obtain more precise estimates of the impact of appointment attributes and demographic factors on preference for physiotherapy delivery mode.

This study investigates the key appointment related factors that influence patients' preferences for telerehabilitation consultations in comparison to traditional in-person physiotherapy consultations and explores how these factors vary across different patient demographic characteristics. The findings of this study, taken together with existing literature, indicate that as appointment wait times and costs increase, preference for telerehabilitation decreases. Moreover, specific patient demographics, particularly those with a single chronic health condition and those living in outer regional areas, also appear to show a decreased preference for telerehabilitation. Clinicians and policymakers should be keenly aware of the impact of appointment wait times and costs on patients' preferences for in-person physiotherapy over telerehabilitation. Additionally, tailored strategies involving co-design may be required to address the unique preferences of different demographic groups and geographic regions within Australia.

## 5 | Implications for Physiotherapy Practice

This study highlights a series of factors that influence patients' preferences towards telerehabilitation consultations. Tailoring physiotherapy services to individual preferences is vital for the

successful implementation of telerehabilitation and underscores the importance of flexible solutions that accommodate diverse patient needs.


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### Ethics Statement

The University of Queensland Human Research Ethics Committee (HE000526) approved this study. All participants provided online informed consent prior to data collection.

### Consent

Patients provided informed consent prior to completing the discrete choice experiment.

### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

The datasets generated during and analysed in this study are not publicly available due to lack of ethical clearance to disclose data to third parties.

### Permission to Reproduce Material From Other Sources

The authors have nothing to report.

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## Supporting Information

Additional supporting information can be found online in the Supporting Information section.