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## Carers' preferences for the delivery of therapy services for people with disability in rural Australia: Evidence from a discrete choice experiment

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**Title:** Carers' preferences for the delivery of therapy services for people with disability in rural Australia: evidence from a discrete choice experiment

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## **Declaration of interest**

The authors have no conflicts of interest to declare.

## **Abstract**

**Background:** The implementation of the Australian National Disability Insurance Scheme (NDIS) is expected to generate a responsive, person-centred system that will empower people with disability to choose the services and support they receive. However little attention has been paid to examine how users of the NDIS will choose and spend their individual budgets. This study aimed to determine quantitatively the relative importance that carers of people with a disability living in rural Australia place on different therapy service delivery characteristics.

**Methods:** A stated preference discrete choice experiment (DCE) was incorporated into a survey of carers of people with disability living in rural Australia. Carers chose between therapy delivery services differing in attributes such as travel time to receive therapy, sector providing the service (i.e. Government, not-for-profit, private), out-of-pocket costs, person who delivers the therapy (therapist or other staff) and waiting time.

**Results:** A total of 133 carers completed the DCE. The majority of respondents cared for a child with a disability (84%), the average age of the person they cared for was 17 years (SD 14.25). Participants expressed strong preferences for a short waiting time (0-3 months) to receive therapy services; services delivered by a therapist, no out of pocket cost and travelling up to 4 hours to receive a therapy session ( $p < 0.005$ ). Sector providing the service was not statistically significant.

**Conclusion:** Carers of people with a disability in rural Australia exhibited strongest preferences for short waiting times (0-3 months). Therapy services that are delivered by therapy assistants or support workers will require careful introduction to achieve uptake and acceptability.

**Keywords:** preferences, therapy, person with disability, carers, Australia, rural

## **Introduction**

Australia is a greatly diverse country in terms of its social, cultural and geographic characteristics. It ranges from highly urbanised communities living in the coastal fringes to remote and isolated locations where people may live hundreds of kilometres from other communities. The majority of the approximately 24 million people live in the coastal fringes while one-third live in rural or remote locations (Australian Bureau of Statistics 2016). In this context “rural” refers to settlements and towns outside urban areas including regional centres (Durey, Haigh & Katzenellenbogen 2015). Compared to their urban counterparts people living in rural and remote areas experience disadvantages directly due to their location (Wakerman, Humphreys, Wells, Kuipers, Entwistle & Jones 2008).

### *Access to services*

Some of the services used by people with physical, sensory and intellectual disability include those provided by occupational therapist, speech pathologist, physiotherapist and psychologist. The range and types of specific services is extensive but tends to commonly relate to assessment of disability and immediate needs (Bundy A, Hemsley B, Brentnall J & Marshall E 2008). Access to therapy services in rural settings pose particular challenges for people with disability and carers including long travel distances to access services, limited service providers and a lack of specialist services resulting in long waiting times (Dew, A., Bulkeley, Veitch, Bundy, Gallego, Lincoln, Brentnall & Griffiths 2013; Dew, Angela, Happ, Bulkeley, Bundy, Lincoln, Gallego, Brentnall & Veitch 2014; Hussain & Tait 2015; National Rural Health Alliance 2013; Verdon, Wilson, Smith-Tamaray & McAllister 2011). While there are gaps in data about services currently provided in rural and remote places a mapping study by Arefadib and Moore (2017), found that the majority of the rural and remote communities only have access to allied health professionals (e.g. speech and physiotherapists) on a sessional basis (sometimes less than once per month). This impacts on the quality of the services provided, therapist have less time to gain suitable knowledge of their client (and

their community) and provide therapeutic input with adequate frequency. Occupational, physio therapy, speech pathology, and early intervention services are examples of services play an integral part in supporting families and assisting in the development of kids with disabilities. However these are the services that are currently lacking in rural and remote areas of Australia (Arefadib & Moore 2017).

For the purposes of the project, we use the term ‘therapy’ to encompass the spectrum of services provided by individual service providers (occupational therapist, speech pathologist, physiotherapist and psychologist) or multidisciplinary teams. Our earlier qualitative study [remove for peer review] indicated that ‘therapy’ is a generic term both commonly used and understood by service providers, clients and carers across the study area. The focus of this paper is on factors that influence carers’ decisions about choosing and using such services in rural/remote western New South Wales, Australia.

In Australia, therapy services have historically been provided by government, non-government and private providers. With the progressive rollout of the National Disability Insurance Scheme (NDIS), this mix of providers is set to change. Many government services are being disbanded resulting in growth in the non-government and private sectors.

The Australian government policy move away from traditional service provider ‘block funding’ to individual funding models is expected to allow people with a disability greater service access, flexibility and choice (Dew, A., Veitch, Bulkeley, Bundy, Lincoln, Gallego, Brentnall & Griffiths 2012). However, as noted above, people with a disability who live in rural areas have less choice and access to therapy services than their urban counterparts. Once the NDIS is fully implemented in 2019, the hope is that a competitive marketplace will develop, resulting in high quality, place-based services (including therapy) that match the needs of people with disabilities and their families within the communities in which they live. To date limited attention



has been paid to examining what choices people might make. Before the NDIS was introduced, Flynn described the importance of “understanding users’ preferences” and needs (Flynn 2013). For most people, including people with disability, decision-making is an interdependent process involving family members, trusted friends and, occasionally, paid advisors (Curryer, Stancliffe & Dew 2015). In addition to support with decision-making, informal carers, usually family members, often assist with accessing services (Broady 2014; Department of Family and Community Services NSW Government 2014). Many family members maintain a primary caring role throughout the life course of the person with disability. Many factors contribute: a strong sense of family responsibility, pride in their caregiving skills, an emotional connection to the person they care for, and a lack of available and acceptable care alternatives (Broady 2014; Hales 2007).

Little is known about the preferences of rural carers for accessing therapy services. For example, we do not know how far carers and the person they care for are prepared to travel to access therapy services; how long they are prepared to wait for services; or if they have preferences about which professional and which sector deliver the services. Without this knowledge, rural therapy services cannot readily meet the preferences of people with disabilities and their carers. In this context, carer preferences refer to the value carers place on a particular therapy service. This value may be elicited directly or indirectly by asking carers about the service (Al-Janabi, McCaffrey & Ratcliffe 2013). This study aimed to determine the relative importance that carers of people with a disability living in rural Australia place on different therapy service characteristics using a discrete choice experiment (DCE).

## **Methods**

### *Discrete Choice Experiment*

Discrete choice experiment (DCE) is a choice-based preference elicitation method based on the consumer theory of demand (Lancaster 1966) and the random utility model (McFadden 1981). As applied in this study, respondents were presented with a series of hypothetical, but

realistic, therapy scenarios, described by a number of attributes, each of which appears at a specific level. Participants are then asked to choose which of the therapy services they would prefer. It is assumed that respondents will choose the option that has the highest individual benefit, known in economics as “utility”. The methodology is based on acknowledgement that decisions involve choice and “all choices involve sacrifice” (Gerard, Salisbury, Street, Pope & Baxter 2008). While DCEs have been used previously to elicit preferences for health services, their use in the disability field is limited.

#### *Identification and selection of attributes and levels.*

Attributes and attribute levels were selected via extensive qualitative work including in-depth semi-structured interviews and focus groups with 78 carers of people with a disability. Maximum variation sampling (Creswell 2009) and snowballing techniques (Bryman 2012) were used to recruit carers; government and non-government organisations provided assistance for recruiting. Inclusion criteria were: providing unpaid care to an individual of any age with a disability and living in western New South Wales (NSW).

Interviews and focus groups were digitally-recorded and transcribed. A modified grounded theory approach using thematic analysis and constant comparison was used to analyse the data (Braun & Clarke 2006). A detailed description of the qualitative study is provided elsewhere [removed for peer review]. These results, feedback from the larger project advisory group (comprising government and non-government service providers, a senior therapist, and carers of people with disability) and a pilot test with five carers in another rural/remote area of NSW informed the specification of the attributes. From this work, five attributes were identified: travel time to receive therapy, service provider, out of pocket costs, person who delivers the therapy and waiting time (see Table 1). No time frame was specified for the therapy to be provided.

#### *Experimental design and choice set construction*

The combination of attribute levels and choice sets results in 128 potential scenarios  $4^3 \times 2^1$  (four three-level and one two-level attributes). Because 128 was too many to present, a fractional factorial design (subset of scenarios and alternatives) was generated (Rose & Bliemer 2009) based on information generated in the pilot study phase. The design software package NGene 1.1.1 (ChoiceMetrics Pty Ltd, [www.choice-metrics.com](http://www.choice-metrics.com)) was used to generate an efficient design by maximizing D-efficiency (D-error 0.65), which had 12 choice sets. The number of choice sets was selected based on cognitive burden and the feasibility of the therapy services presented. We developed 2 versions of the questionnaire, each containing 6 choice sets (Block 1 and Block 2). Each block had nearly equal attribute balance (i.e. the attributes were presented the same number of times) and variation (Rose & Bliemer 2009). These blocks were randomly allocated to the respondents.

Respondents had to choose between two hypothetical therapy service delivery scenarios or an “opt out” option (i.e. neither of the two therapy services). This was necessary as, in real life, carers may not want to engage with any therapy services, no matter how accessible they are, or because neither service is acceptable. The DCE section of the survey started with a description of the attributes and an example of a choice task. An example of a choice set is shown in Figure 1. All versions also had an extra choice “dominant” set (Set 7) at the end to test if respondents understood the task. Set 7 responses were not included in the final analysis.

In addition to the DCE, the survey also collected data on the person with disability (age, gender, and relationship to the carer), therapy services received and funding for therapy (out-of-pocket costs and access to individual funding). Data were also collected on the primary carer (gender, age, education, employment and income). All sections also allowed participants to provide further comments.

### *Participants recruitment and survey administration*

The target group was primary carers, aged 18 years or older, of people with disability living in the western NSW. Primary carer was defined as “a person with substantial responsibility for providing unpaid care or support to a person who has a disability/developmental delay, regardless of whether he/she lived with the primary carer”. Disability/developmental delay was described as: “Disability/ developmental delay include a range of impairments that result in difficulties for the person in everyday activities such as moving around or understanding how to look after themselves”. In addition to this definition carers were also provided with a description of the “therapy” (physio and occupational therapy, speech pathology and psychology), the service providers in NSW and the types of providers. During the data management phase, carers of people with mental health problems, chronic health conditions, terminal illnesses, drug or alcohol dependency, and frail aged were excluded.

Several distribution channels were used to maximise participation. An invitation email was sent, with a link to the survey, to carers who had previously participated in the qualitative component of the larger study and had indicated a willingness to receive further information about subsequent stages of the project. In addition to these people, we asked disability service providers within the region to distribute an email or letter about the survey to carers. In the email/letter carers were given a link to complete the survey online. The email/letter also provided a contact person’s details to request a hard copy of the survey. Additionally, hard copies were mailed out with a reply-paid envelope for return, to schools, health services and disability/parent support groups. The project’s newsletter (distributed to over 700 people) was also utilised to inform carers about the survey. A flyer providing details about the project and survey with contact details was displayed in public venues in the region used by carers e.g., government income support offices, doctor’s surgeries and public libraries.

### **Data analysis**

In order to model the effects of attribute choice, rather than effects of respondent characteristics on choice, a conditional logistic regression was used to analyse the data. In this model choice (0, 1) was the dependent binary outcome taking the value of 1 if the option was chosen and 0 if not. The attribute levels were transformed into L-1 dummy variables by effects coding. The result from the analysis were a set of regression coefficients which were used to describe the relative preference (“utility”) for each of the attributes. The magnitude of the coefficient represents the extent of preference for each attribute (i.e. the greater the statistical significance of the coefficient, the larger the impact the attribute had on determining a respondent’s preference towards the alternative. The sign of the coefficient indicates whether the attribute increases (decreases) utility. In general, a positive coefficient indicates that a respondent values an attribute more. Based on the effects coding, it was expected that all  $\beta$  coefficients would have a positive sign indicating an increase in utility. Data were analysed using Stata 11.0 for Windows (StataCorp LP, College Station, TX).

## **Ethics**

This study was approved by the Human Research Ethics Committee of [removed for peer review] and the University of [removed for peer review].

## **Results**

### **Responses to the DCE choice task**

The total number of carers who completed the survey was 166. Due to the diversity and extent of the recruitment initiatives and to protect carers’ privacy we were unable to determine how many carers received the email/letter and hence cannot estimate the response rate. One hundred and fifty two carers attempted to complete the DCE task. Of those four did not complete all choice sets; one did not provide demographic data; and 14 “opted-out” by picking the “Neither service” option for all choice sets. Thus 19 respondents were excluded from the basic model with a final sample of 133 respondents and 1596 observations. Three percent of the carers always chose the same set regardless of the options presented (i.e. always chose

option A or always chose option B). Almost all respondents (N=128) passed the rationality test that was included in the questionnaire (Set 7 with a dominant option). We did not ask carers about the ease of completion of the DCE but two respondents who did not complete the task provided the following comments:

*“At present I don't think that these therapy services are relevant to us. These questions are irrelevant. Answers would be dependent on the need for service and availability locally. We were always able to access local services supplemented with 6 monthly-yearly visits to [city based NGO] for a week of intensive review”.*

*“These questions are like comparing apples to lemons and I can't really decide”. .....We are fortunate that [child] is in State care and a lot of his therapy expenses are reimbursed. Services need to be as affordable as possible so that parents can afford to get the help their child needs. I do not mind who delivers the service and it is probably a better idea to train “other staff” and to get the services to the children in a reasonable, timely manner”.*

### **Participant characteristics**

The mean age of the person with disability was 17 years with a range from 1 to 69 years and 56% were males. Carers were on average 46 years old (SD 10.6) and 97% were females. Compared to the 2016 Carers NSW survey (Carers NSW 2016), carers in our sample are more likely to be younger, have completed high school and have a higher household income. The person they care for is older and is more likely to be a child (See Table 2). Respondents who completed the DCE have similar characteristics to those who did not complete the task. However respondents who chose the opt-out “neither service option” were older (52.7 years); the person with disability they were caring for was more likely to be female (62%), and the average age was higher (19.2 years).

Table 3 contains the results of the conditional logistic estimation model. Statistically significant coefficients ( $\beta$ ) indicate the importance of that attribute for influencing preferences and determining overall utility. Coefficients with positive signs indicate that as the level of the attribute increases so does the utility or, in other words, a preference for that level. The data suggest that “Waiting time (0-3 months)” is the most valued attribute level (i.e. exhibited strongest preferences), followed by “No cost”, therapy delivered by a “therapist” and travel time of “up to 4 hours” all of which are statistically significant. On the other hand, travel time that involves “overnight stay or longer”, out of pocket costs of “more than \$50” and waiting time of “more than 6 months” are the least valued attribute levels. Carers did not appear to have strong preferences for the sector providing the service (i.e. Government, NGO or private).

The preference weights for all attribute levels are illustrated in Figure 2. For the most important attribute (waiting time), the best level (0-3 months) was assigned a preference weight of 10 and the worst level (more than 6 months) was assigned a preference weight of 0. All other attribute levels were scaled relative to the most important attribute. More preferred outcomes have higher preference weights than less-preferred outcomes. The estimated preference weights for all five attributes were consistent with the expected order of the categories.

The 95% confidence interval is represented by the vertical bars around each mean parameter estimate. The mean estimates are statistically significantly different from each other at the 5% level, if the confidence intervals do not overlap for adjacent levels within a particular attribute level. For example, the mean estimates were ordered correctly and were statistically different for travel ( $p < 0.05$ ).

As previously noted carers were also given the opportunity to provide further comments. Not surprisingly, the comments reflected how detrimental carers thought the long waiting times were for the person they cared for. One carer noted: *“Long waits for any therapy service is*

*not a good thing. If therapy is required ongoing gaps of months in between would dilute any benefit from them”.*

*Another mentioned: “I am of the opinion that the wait time for therapy services in this area is far too long. For families who are unable to afford private therapy, this could be detrimental to the early intervention plan for a child. I do understand that the caseloads are heavy. And that there are too few therapists in our area. However, I believe that if a family had the ability to manage their own funding, they could use this to pay for a private therapist”.*

## **Discussion**

This study has shown that waiting time and cost of therapy services are important characteristics for therapy service delivery in a rural area of Australia. The attribute with the strongest preference was waiting time. This suggests that carers in this sample may be willing to trade benefits of the other attributes (i.e. travel longer distances and/or pay more in order for their care recipient to receive timely therapy service).

People with disability living in rural and remote Australia have the right to access therapy service opportunities equivalent to those of urban dwellers (United Nations 2006). However, according to the results from this study, the things that are valued are those that they appear to lack. Results from research has shown that, compared to their urban counterparts, rural carers experience significant difficulties accessing therapy services with long waiting times and higher cost (Hussain & Tait 2015; Verdon *et al.* 2011). Long waiting times are a result of the difficulties in attracting and keeping therapists in these areas (Dew, A., Barton & Ragen 2013). For the NDIS to meet its policy objectives, and be sustainable into the future, addressing workforce issues is critical.

One of the service attributes introduced in this study was “who is delivering the therapy”. Participants were given the option of therapist or other staff prescribed by the therapist.



Results from the DCE indicate that “who” provides therapy (therapist or other) is a key consideration with carers showing a strong preference for therapists. Therapy services that are delivered by therapy assistants (also referred to as allied health assistants [AHAs] or support workers) will require careful introduction to achieve uptake and acceptability. To date, only two Australian states Western Australia (WA) and New South Wales (NSW) have reported the use of therapy assistants to deliver therapy services (Dew, A. *et al.* 2013; Lin, Goodale, Villanueva & Spitz 2007). Dew et al (Dew, A., Bulkeley, Veitch, Bundy, Lincoln, Glenn, Gallego & Brentnall 2014), conducted a case study of the use of therapy facilitators in rural NSW. The authors concluded that appropriately-supported therapy facilitators provide a “flexible workforce adjunct that expands the reach of therapists into rural and remote communities and enhances service access for children and their families” (p1). This is particularly important in the group of people that these carers care for. In an audit of allied health assistant roles, Kuipers et al., described that, if adequately trained, therapy assistants can support clinical service delivery in these areas (Kuipers, Hurwood & McBride 2015) and would be a viable adjunct workforce to reduce waiting times (Dew, A. *et al.* 2013).

Other alternatives to reduce waiting times and the gap in services include the use of technology. Technology has received some support in the literature. Lincoln et al. (2014) showed use and acceptance of tele-therapy to deliver speech pathology services in rural Australia amongst parents and carers. Gardner et al. (2016) described how carers of a person with a disability living in rural NSW were willing to use information and communication technology (ICT) to receive occupational therapy for their son/daughter.

One interesting finding from this study was that carers did not exhibit strong preferences as to the sector providing the services (Government, NGO or private). This is particularly relevant as some Australian States, parallel to the introduction of the NDIS, are choosing to cease to provide direct services. Government departments in NSW and the Australian Capital Territory (ACT) that historically have been direct service providers have decided to withdraw their

services as of 2019 (the first full year of operation of the NDIS). Services currently provided directly by the public sector will likely be transferred to the non-government sector (National Disability Services (NDS) 2016).

Under the NDIS, carers and people with disabilities will have to make decisions on how to use their individual funding. Often assumptions have been made as to what people with disability and their carers value (“prefer”), which are not always based on empirical evidence. The valuable insights arising from this study may assist with future planning and design of therapy services that better meet the needs of people in rural and remote areas.

#### *The use of discrete choice experiments*

DCE studies with carers have had low rates of completion of the DCE task (ranging from 20% to 25%) (Al-Janabi, Flynn & Coast 2011; Mentzakis, Ryan & McNamee 2011; van den Berg, Al, Brouwer, van Exel & Koopmanschap 2005). Our study had a high completion rate (83%). Previous surveys with carers have not focused on carers of people with disability however there are common traits; carers are busy and stressed. Possibly, the high DCE completion rate in this study is due to the fact that this was an important topic for these carers.

#### **Strengths and limitations**

The study provides evidence about the relative importance of different therapy delivery characteristics that are preferred by carers of people with disability living in rural NSW and useful insights for those who plan and deliver therapy services in rural Australia. One limitation is that survey respondents were self-selected. Another is that because respondents were recruited in one Australian state (NSW) these findings may not be generalizable to other rural areas.

#### **Future research**

Reducing waiting and travel times in rural areas may mean that services are provided by staff other than therapists and that services perhaps need to be provided in new and innovative ways. For example, tele-therapy services can reduce travel time and out-of-pocket expenses and may also reduce waiting time. Likewise, therapy assistants, with delegated responsibility from a therapist, could conduct a prescribed service in areas without a resident therapist. Future research could explore the acceptability of these and ways that carers and people may, or may not, be willing to trade-off service attributes (i.e., shortened waiting time if therapy is received using tele-therapy; lower out-of-pocket costs if therapy is delivered by a therapy assistant (supported by a therapist). This approach may also be used to investigate social supports that families and/or children may require so that the therapeutic demands can be seen within a broader context of support. This might lead on to a prioritisation exercise across therapy and social supports to determine how families might choose to spend the limited funds available to them through NDIS.

## **Conclusions**

Carers of people with a disability in rural Australia exhibited strongest preferences for short waiting times (0-3 months). Service provider (Government, NGO, private) was not an important attribute. Therapy services that are delivered by therapy assistants or support workers will require careful introduction to achieve uptake and acceptability. DCEs are a potential approach to assessing carers of people with disability's preferences, as they reveal the characteristics of programmes that are most important to them.

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**Table 1.** DCE attributes, levels and descriptions

<b>Attribute</b>	<b>Description</b>	<b>Levels</b>
Travel	Time taken to travel to receive one therapy session	Level 0: Overnight stay or longer Level 1: More than 4 hours return – Day trip Level 2: Up to 4 hours return – Day trip
Service provider	Sector providing the services	Level 0: Private provider Level 1: Not for profit Level 2: Government
Out of pocket costs	What you pay for per therapy session	Level 0: More than \$50 per session Level 1: Up to \$50 per session Level 2: No cost per session
Therapy delivery	Who is delivering the therapy	Level 0: Other staff (deliver therapy prescribed by therapist) Level 1: Therapist
Waiting time	How long you wait to receive therapy services after being referred	Level 0: More than 6 months Level 1: 4 to 6 months Level 2: 0 to 3 months



**Table 2.** Respondent characteristics

<b>Characteristics</b>	<b>Sample (N=166) n (%)</b>	<b>Completed DCE (N=133) n (%)</b>	<b>Carers NSW Survey N=324† %(n)</b>
<b>Person with disability</b>			
Male	93 (56.0)	78 (58.7)	283 (60.6)
Mean age (standard deviation), y	17.6 (14.2)	16.8 (14.3)	35.2 (26.1) <sup>b</sup>
<b>Carer</b>			
Female	148 (93.1)	125 (95.4)	281 (86.7)
Mean age (standard deviation), y	46.8 (10.6)	45.7 (10.4)	53.1 (13.8)
<b>Education</b>			
Completed primary school	7 (4.4)	6 (4.6)	48 (14.8) ‡
Completed high school	47 (29.4)	37 (28.2)	61 (18.8)
Post-school qualification (e.g. certificate or diploma)	70 (43.7)	55 (42.0)	133 (41.0)
Bachelor degree or higher	36 (23.5)	33 (25.2)	76 (23.5)
<b>Marital status</b>			
Never married	8 (5.0)	7 (5.3)	#
Married / De facto	129 (80.6)	107 (81.7)	#
Widowed	8 (5.0)	6 (4.6)	#
Divorced	9 (5.6)	7 (5.3)	#
Separated, but not divorced	6 (3.8)	4 (3.0)	#

**Living rural (years)**

Mean (standard deviation), y	31.2 (18.4)	30.2 (18.2)	#
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**Annual household gross income**

Less than \$20,000 per year	18 (11.6)	12 (9.4)	40 (12.3) \$
\$20,000-\$39,999 per year	28 (18.1)	23 (18.0)	
\$40,000-\$59,999 per year	27 (17.4)	22 (17.2)	
\$60,000-\$75,999 per year	28 (18.1)	24 (18.8)	
\$80,000-\$99,999 per year	31 (20.0)	28 (21.9)	46 (14.2) \$
\$100,000-\$149,999 per year	17 (11.0)	14 (10.9)	18 (5.6)
\$150,000 or more	6 (3.9)	5 (3.9)	

**Relationship**

Child	138 (83.6)	113 (84.3)	223 (68.8)
Sibling	6 (3.6)	4 (3.0)	17 (5.2)
Grandchild	5 (3.0)	3 (2.3)	9 (2.8)
Foster child or ward	5 (3.0)	3 (2.3)	4 (1.2)
Other*	11 (6.7)	9 (6.8)	58 (17.9)

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†Carers of a person with disability based in rural areas defined as: outside of Sydney and surrounds, Newcastle and Wollongong, 324 rural carers, who were caring for a combined total of 467 people with disability. ‡Closest category was "Less than high school". #Not included in the survey. §Used closest category. Carers NSW categories differed slightly <\$20,800; \$20,800-51,999; \$52,000-77,999; \$78,000-103,999; \$104,000+. \*Other included: mother, wife, friend, husband, nephew and uncle.

**Table 3. Model coefficient results (base model)**

Variable	$\beta$ Coefficient	Robust Std. Err. #	P value	[95% Confidence Interval]	
<b>Travel</b>					
Up to 4 hours	0.335	0.099	0.001*	0.140	0.530
More than 4 hours	0.144	0.072	0.046*	0.003	0.286
Overnight or longer <sup>‡</sup>	-0.479	0.317	0.130	-0.796	-0.162
<b>Service provider</b>					
Government	0.023	0.069	0.742	-0.112	0.158
NGO	-0.009	0.064	0.892	-0.135	0.118
Private <sup>‡</sup>	-0.014	0.250	0.956	-0.264	0.237
<b>Cost</b>					
No cost <sup>‡</sup>	0.463	0.087	0.000*	0.292	0.634
Up to AU\$50	0.115	0.062	0.064	-0.006	0.236
More than AU\$50	-0.578	0.366	0.114	-0.943	-0.212
<b>Therapy delivery</b>					
Therapist	0.356	0.067	0.000*	0.225	0.488
Other <sup>‡</sup>	-0.356	0.140	0.011	-0.497	-0.216
<b>Waiting time</b>					
0-3 months	0.762	0.111	0.000*	0.545	0.979
4-6 months	0.005	0.071	0.940	-0.134	0.144
More than 6 months	-0.767	0.336	0.023*	-1.103	-0.431
Pseudo R <sup>2</sup> ( $\rho^2$ )		0.2190			
Log likelihood (LL)		-341.59141			
Number of respondents		133			
Number of observations		1596			

P value: \*significant at 5% level. <sup>‡</sup>Using effects coding L-1 levels are calculated using the regression model, the missing level is obtained from the negative of the sum of all other coefficients. <sup>#</sup>Standard errors were adjusted for preferences by clustering by respondent.

Figure 1

**50 Which therapy service would you prefer?**

	<b>Service A</b>	<b>Service B</b>
<b>Travel</b> <i>To receive one therapy session</i>	More than 4 hrs - Day trip (return) -	Overnight stay or longer
<b>Therapy Provider</b> <i>Provides therapy services</i>	Private provider	Not-for-profit (NGO)
<b>Out of Pocket Costs</b> <i>What you pay per therapy session</i>	More than \$50	Up to \$50
<b>Therapy Delivery</b> <i>Delivers therapy services</i>	Therapist	Other staff - delivers therapy prescribed by therapist -
<b>Waiting Time</b> <i>To receive therapy services</i>	More than 6 <u>mths</u>	0-3 <u>mths</u>

	<b>Service A</b>	<b>Service B</b>	<b>Neither of these two therapy services</b>
<b>Preferred therapy service:</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 2

