AMERICAN PSYCHOLOGICAL ASSOCIATION

Rehabilitation Psychology

ISSN: 0090-5550

2025, Vol. 70, No. 2, 154–161
https://doi.org/10.1037/rep0000568

Unmet Supportive Care Needs Among Survivors of Stroke in Australia: A Cross-Sectional Study

Kristy Fakes[1, 2], Mariko Carey[2, 3], Amy Waller[1, 2], Erin Forbes[1, 2], Jude Czerenkowski[4], Joshua Dizon[2, 5], and Robert Sanson-Fisher[1, 2]

[1] Health Behaviour Research Collaborative, School of Medicine and Public Health, College of Health Medicine and Wellbeing, University of Newcastle
[2] Hunter Medical Research Institute, New Lambton Heights, Australia
[3] Centre for Women's Health Research, College of Health, Medicine and Wellbeing, University of Newcastle
[4] Stroke Foundation, Melbourne, Victoria, Australia
[5] Data Sciences, Hunter Medical Research Institute, New Lambton Heights, Australia

Purpose/Objective: To examine, among survivors of stroke: (a) the prevalence of and most frequently reported unmet needs; and (b) the sociodemographic and clinical factors associated with higher counts of unmet needs. ***Research Method/Design:*** A cross-sectional study was undertaken with survivors of stroke recently discharged from eight hospitals in Australia, with institutional board approval. Survivors were mailed one survey for completion after their discharge from hospital. Unmet needs were measured by the Longer-Term Unmet Needs After Stroke (LUNS) tool. The number and percentage of participants who reported unmet needs were calculated. The association of sociodemographic factors, type of stroke, and thrombolysis treatment to total LUNS scores was examined using mixed ordinal logistic regression. ***Results:*** A total of 402 survivors (35% of those approached) between April 2018 to December 2019 returned a completed survey. 83% reported at least one unmet need. The most frequently reported unmet need was needing more information about their stroke ($n = 239$, 61%). Those who identified as Aboriginal and/or Torres Strait Islander had approximately 5.6-fold higher odds ($OR = 5.59$, $p = .025$) of having more longer-term unmet needs compared to those who did not identify as Aboriginal and/or Torres Strait Islander. ***Conclusions/Implications:*** Unmet needs are common in recently discharged survivors of stroke. These findings may be used to inform strategies that support recovery. Providing more information may help reduce unmet needs among survivors of stroke. Enhanced hospital discharge planning and enhanced community services for survivors may help better prepare them and their caregivers for the return home.

This article was published Online First July 25, 2024.

Paul B. Perrin served as action editor.

Kristy Fakes https://orcid.org/0000-0002-7217-9578

This project was supported by the National Health and Medical Research Council (NHMRC) Partnership Grant (1114511) and infrastructure funding from the Hunter Medical Research Institute. Mariko Carey was supported by the NHMRC Boosting Dementia Research Leadership Fellowship (1136138). The authors declare no conflicts of interest. Materials and analysis code for this study may be available by emailing the corresponding author. The data are not publicly available due to ethical restrictions.

Kristy Fakes served as lead for writing–original draft and writing–review and editing. Mariko Carey served as lead for writing–original draft. Amy Waller served as lead for supervision and writing–original draft. Joshua Dizon served as lead for data curation and formal analysis and contributed equally to validation. Robert Sanson-Fisher served as lead for conceptualization, funding acquisition, investigation, and methodology. Kristy Fakes, Mariko Carey, Amy Waller, and Jude Czerenkowski contributed equally to conceptualization and methodology. Kristy Fakes and Amy Waller contributed equally to project administration. Kristy Fakes, Mariko Carey, and Robert Sanson-Fisher contributed equally to supervision. Mariko Carey, Amy Waller, and Jude Czerenkowski contributed equally to funding acquisition. Kristy Fakes, Mariko Carey, and Amy Waller contributed equally to investigation. Mariko Carey, Amy Waller, Erin Forbes, Jude Czerenkowski, Joshua Dizon, and Robert Sanson-Fisher contributed equally to writing–review and editing. Erin Forbes and Joshua Dizon contributed equally to writing–original draft.

Correspondence concerning this article should be addressed to Kristy Fakes, Health Behaviour Research Collaborative, School of Medicine and Public Health, College of Health Medicine and Wellbeing, University of Newcastle, University Drive, Callaghan, NSW 2308, Australia. Email: Kristy.fakes@newcastle.edu.au

Impact and Implications

The findings from this study indicate that providing more information about stroke to survivors of stroke prior to, or shortly after, discharge may help reduce their unmet needs. Enhanced hospital discharge planning and enhanced community services for survivors may help better prepare them and their caregivers for the return home. While these findings relate to the Australian context, they may have wider applicability for survivors of stroke and TIA in other countries and highlight the importance of identifying unmet needs to ensure that discharge recommendations and follow-up care address these needs.

Keywords: stroke, unmet needs, cross-sectional, stroke rehabilitation, stroke survivors

Improvements in the acute management of stroke care have seen a steady increase in the number of survivors of stroke (Australian Institute of Health & Welfare, 2019). It is estimated that there are 470,000 survivors of stroke living in Australia (Stroke Foundation, 2022). Many survivors live with stroke-related disabilities that affect their daily life (Stroke Foundation, 2022). Internationally, it has been reported that the needs of most survivors of stroke (81.37%) are not being met at 2-year poststroke, with information needs, rehabilitation needs, and physical problems cited as the most frequently unmet needs (B. Lin et al., 2021). Research also indicates that people who had a transient ischemic attack (TIA)/minor stroke experience residual impairments (Turner et al., 2019) including cognitive impairment (van Rooij et al., 2016) and depression (Moran et al., 2014), which affect return to work, social activities, and relationships (Turner et al., 2019).

The unmet needs of survivors of stroke have been explored extensively (Chen et al., 2019; B. Lin et al., 2021). However, only two studies have explored the unmet needs of survivors of stroke in Australia (Andrew et al., 2014; Olaiya et al., 2017). Findings from the first national survey with Australian survivors ($N = 765$) conducted in 2012 who had their first stroke at least 1 year ago, identified that the majority of community-dwelling survivors of stroke (81%) reported unmet supportive care needs, using an unmet needs survey adapted from the United Kingdom (Andrew et al., 2014; National Stroke Foundation, 2013). One-third of survivors reported unmet day-to-day living needs including home help, personal care, and transportation; and 84% reported unmet health needs related to mobility, incontinence, and concentration (National Stroke Foundation, 2013). Unmet needs for emotional support were also present in 73% of survivors (National Stroke Foundation, 2013). Based on the findings from the large Australian survey, the authors of that report suggested that changes need to be made to the way in which survivors of stroke are supported in the community (Andrew et al., 2014). However, with only two studies focusing on Australian survivors, relatively little is known the support that is currently offered in the community.

Despite evidence to suggest that the needs of survivors of stroke may vary depending on the recency of stroke, there are very few studies focusing on the more immediate, postacute period (<3-month poststroke) (Boter et al., 2004; Crow, 2018; Kamalakannan et al., 2016; op Reimer et al., 1999). Together, the available evidence of unmet needs of survivors of stroke in Australia has only captured the experience of those who are at least 12 months (Andrew et al., 2014) and 2 years (Olaiya et al., 2017) poststroke or TIA.

Survivors who report more unmet needs are more likely to report higher levels of depression and poorer quality of life, reflecting the importance of addressing unmet needs (Andrew et al., 2016; B. Lin et al., 2021). Exploring sociodemographic and disease characteristics that contribute to patient-reported unmet needs is important to inform strategies that support recovery after stroke. Several sociodemographic factors have previously been identified. In the large Australian study, the factors associated with greater unmet needs included younger age, a greater level of disability, and living in a major city (Andrew et al., 2014). The study conducted by Olaiya et al. (2017) ($N = 335$), reported similar findings with age and level of disability among the most significantly associated factors with unmet needs among survivors of stroke or TIA. However, the sociodemographic and disease characteristics that contribute to patient unmet needs are yet to be explored in the postacute period.

The needs of survivors of stroke and the degree in which they are met are dependent on the supports available within that region (Sumathipala et al., 2012). Therefore, the lack of research focusing on the unmet needs of Australian survivors is a concern. To improve the way that survivors are supported within the community, it is vitally important to understand the needs of survivors locally. In addition to this, understanding survivors whose needs more often go unmet is crucial for targeting appropriate supports for survivors of stroke. As far as the authors are aware, this is the first study to establish the unmet needs and associated factors in an Australian setting in the postacute period (<3-month poststroke). Establishing the unmet needs and associated factors among survivors less than 3-month poststroke/TIA in Australia may inform changes to discharge recommendations and follow-up care to better address these needs.

Aims

To examine:

1. the prevalence of unmet needs among survivors of stroke and the most frequently reported needs; and
2. the sociodemographic and clinical factors associated with higher counts of unmet needs among survivors of stroke.

Method

Transparency and Openness

We report how we determined our sample size, all data exclusions, all manipulations, and all measures in the study, and we follow JARS (Appelbaum et al., 2018) and reporting standards. This study was not preregistered. Materials and analysis code for this study may be available by emailing the corresponding author. The data are not publicly available due to ethical restrictions. Additional use of or access to the data requires that the research team submit a request

for variation of ethics approval. Data were analyzed using SAS Version 9.4 (SAS Institute, Cary, North Carolina, United States). This project was supported by a National Health and Medical Research Council (NHMRC) Partnership Grant (1114511) and conducted in collaboration with the Stroke Foundation.

Study Design

A cross-sectional survey was undertaken with survivors of stroke recruited from eight hospitals located in New South Wales, Australia, that provide inpatient acute and/or rehabilitation stroke care. Six of the hospitals were in major cities, and two were inner regional. This study received approval from the Hunter New England Health Human Research Ethics Committee (HNEHREC), The Mid North Coast Local Health District; South Western Sydney Local Health District; and Western Sydney Local Health District (5561).

Eligibility Criteria

Inclusion

Eligible participants were those who were: 18 years or older; less than 3 months since their first TIA, or ischemic or hemorrhagic stroke; discharged from hospital to private rehabilitation or home; and able to provide informed consent (by way of a returned survey). The inclusion criteria of less than 3 months since first TIA, or ischemic or hemorrhagic stroke was selected so that the postacute/early subacute phase poststroke and the hospital discharge period could be examined.

Exclusion

Survivors excluded from participating were those who had: a severe neurological impairment not associated with stroke; a severe cognitive or language impairment; or had insufficient English comprehension to complete study documentation.

Recruitment and Data Collection

Patient eligibility was assessed by the hospital stroke care coordinator or ward staff. At the time of discharge, clinic staff posted a study information and recruitment pack to eligible survivors addressed to participants' home or private rehabilitation as per discharge information. The information and recruitment pack contained an invitation to participate, a participant information statement, a printed survey, and a reply-paid envelope. The invitation letter asked consenting survivors to complete the survey and return the survey to the research team in the reply-paid envelope provided. Approximately 2 weeks later, a reminder pack was posted to all survivors who had not returned a completed survey. A returned survey was taken as implied consent.

Measures

Unmet Needs

They were assessed using the Longer-Term Unmet Needs After Stroke (LUNS) tool. This 22-item tool includes items across four domains: information, services, social and emotional consequences, and health-related problems; to examine issues affecting physical, social, and mental well-being in the special context of longer-term stroke care. Participants respond to each item either "yes" or "no," with a no response indicating no need or a met need. LUNS can be used for identifying the longer-term unmet needs for an individual stroke patient during a poststroke review. In addition, LUNS can also be used to provide a survey of the longer-term unmet needs of stroke patients within a service, to evaluate how well a service is meeting the needs of its stroke patients. While the LUNS is designed to assess the longer-term unmet needs, to the best of our knowledge, no definition of "longer-term" exists. The scale has moderate to good test–retest reliability and good concurrent validity (LoTS Care LUNS Study Team, 2013) for use in those who are 3- and 6-month poststroke. It has not been established which tool is most suitable for use in the period of focus within this study (<3-month postdischarge). Other stroke-specific measures, such as the self-reported long-term needs after stroke (McKevitt et al., 2011), the Greater Manchester Stroke Assessment Tool (Rothwell et al., 2013), and the Post-Stroke Checklist (Ward et al., 2014) are all designed for use in the 6- and 12-month poststroke period. Currently, few published studies have reported utilizing the LUNS, however, a recent review of the unmet needs after stroke examined the psychometric properties of the measures utilized (Chen et al., 2019), and suggested that the LUNS more comprehensively covered relevant domains of unmet needs, has established validity and reliability, and required less time to complete.

Demographic Characteristics

Gender, age group, level of education, employment status, possessing health insurance, possessing a concession card (a government-issued card that enables access to health services and medicines at a lower cost), language other than English spoken at home, and indigenous status and were obtained via standard self-report items.

Clinical Characteristics

Type of stroke and whether thrombolysis treatment was received were obtained via standard self-report items. This range of characteristics was selected for their clinical relevance, and to examine whether unmet needs were associated with different patient groups and treatments.

Statistical Analyses and Sample Size

Descriptive statistics for categorical data are presented as count (%), mean (*SD*), and median (min, max) if continuous. Total LUNS scores were calculated as the overall sum of individual LUNS items. Participants that had more than 11 missing item responses had LUNS total scores set to "missing." There is no clear consensus on the number of domains of the LUNS measure. Some research has suggested that the LUNS measure should be used at an individual item level, but median values were also provided (Forster et al., 2014). Both three- and four-factor solutions have been suggested (Forster et al., 2014). Given this lack of consensus, this analysis should not be considered to interpret the LUNS measure as a single dimension, but instead, calculates a sum score of unmet needs without commenting on the underlying dimensionality of the LUNS measure. Analysis of the association of sociodemographic factors, type of stroke, and thrombolysis treatment to total LUNS scores was examined using mixed ordinal logistic regression,

with a random effect for "site." The ordinal logistic regression models included mixed effects for sociodemographic and clinical characteristics. Assumptions for proportional odds were checked by visual inspection of the slopes of each predictor variable to the response variable. The assumption for proportional odds was deemed appropriate. Model estimates are presented odds ratios with 95% confidence interval (CI) and p values. Due to missing data on the various response items in demographic and clinical predictors, sensitivity analysis was performed on the outcome using multiply imputed data. Multiple imputation was performed using fully conditional specification under the missing-at-random assumption. The association between the missing demographic/clinical predictors to other nonmissing predictors, and also to the outcome, was utilized to inform the imputation models. The effect estimates from the MI models were stable after $m = 25$ imputed data sets. Statistical analyses were programmed using SAS Version 9.4 (SAS Institute, Cary, North Carolina, United States). A priori, $p < .05$ (two-tailed) was used to indicate statistical significance. To examine the reliability, the Omega coefficient (Shaw, 2021) of the 22 LUNS items was calculated using Stata Version 18.0 (StataCorp. 2023; Stata Statistical Software: Release 18, StataCorp LLC, College Station, Texas, United States).

Assuming conservatively a true underlying proportion of participants reporting unmet needs of 0.5, a sample of $n = 400$ would be able to estimate this with a 5% Margin of Error (i.e., a 95% CI [0.45, 0.55]) using an exact Clopper–Pearson CI.

Results

A total of 1,308 patients were assessed for study eligibility, of which 1,140 met eligibility criteria. Reasons for ineligibility included: >3-month poststroke ($n = 3$) and not discharged home ($n = 165$). Of the 1,140 eligible patients who were posted a recruitment pack, 402 (35%) consented to participate and returned a completed survey. Table 1 presents the demographic and clinical characteristics of participants.

Percentage and Most Frequently Reported Unmet Needs

Most participants (83%) reported at least one unmet need (Figure 1); more than a quarter (29%) reported five or more unmet needs and 6% reported 10 or more unmet needs. Sixty-eight participants (17%) reported no unmet needs. Table 2 presents the 10 most frequently reported unmet needs within the sample population (ordered highest to lowest). The most frequently reported unmet need was needing more information about their stroke ($n = 239$, 61%). The Omega coefficient ($\omega = .794$) for the 22 items of LUNS indicates good internal consistency.

Associations With Unmet Needs

Table 3 presents the associations between participant demographic and clinical characteristics to count of unmet needs. The ordinal logistic regression models the odds of having a higher count (i.e., one or more) of longer-term unmet needs. Univariate ordinal logistic regression used all available cases, multivariate ordinal logistic regression $N = 331$. Those who identified as Aboriginal and/or Torres Strait Islander had approximately 5.6-fold higher odds ($OR = 5.59$, $p = .025$) of having more unmet needs compared to those who did not identify as Aboriginal and/or Torres Strait Islander. Approximately 4% of the total variance in the count of unmet needs was accounted for by between-site differences (adjusted intraclass correlation coefficient [ICC] = .04). The remaining 96% of the total variance was accounted for by within-site differences (i.e., 96% of the total variance in the count of unmet needs is explained by per-individual differences and 4% is explained by clustering).

Table 1
Demographic and Health Characteristics of Participants ($N = 402$)

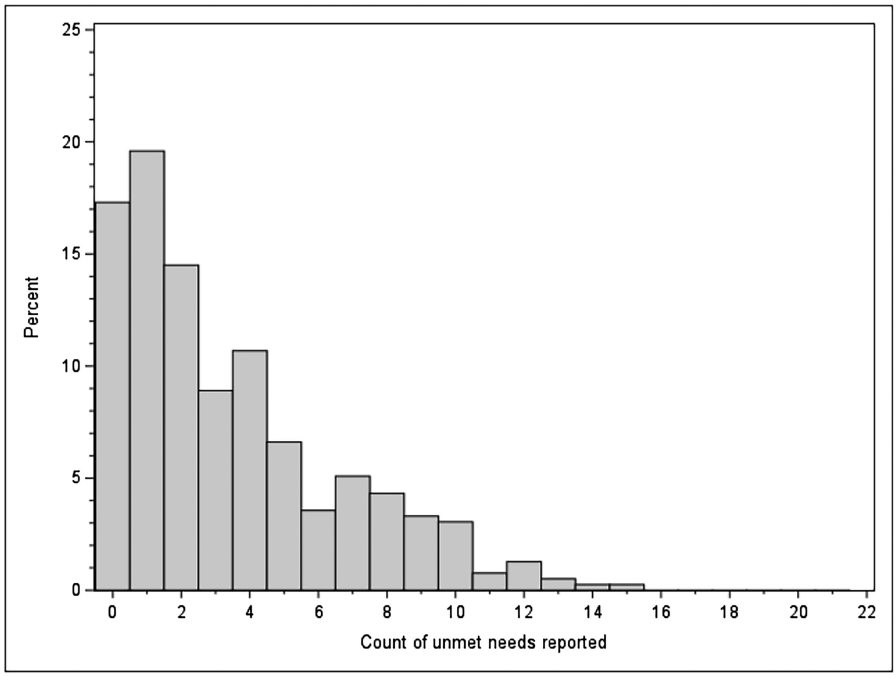
Patient characteristics	n (%)[a]
Gender	
Male	235 (59)
Female	160 (41)
Missing	7
Age (years)	
18–44	10 (2.6)
45–64	90 (24)
≥65	279 (74)
Missing	23
Rurality	
Inner regional	109 (27)
Major city	294 (73)
Education	
Secondary school or below	201 (52)
Trade or vocational training (e.g., TAFE or college)	131 (34)
Tertiary	57 (15)
Missing	13
Working status	
Working (full-time, part-time, or casual)	90 (22)
Not working (home duties, unemployed, retired, and disability pension)	312 (78)
Private health insurance	
No	198 (51)
Yes	188 (49)
Missing	16
Concession card (e.g., health care, pension concession, or Department of Veterans Affairs Card)	
No	114 (30)
Yes	271 (70)
Missing	17
Language other than English spoken at home	
No	345 (88)
Yes	46 (12)
Missing	11
Aboriginal and/or Torres Strait Islander status	
No	387 (98)
Yes	6 (1.5)
Missing	9
Type of stroke	
Ischemic stroke	157 (41)
Hemorrhagic stroke	20 (5.3)
TIA	109 (29)
Unsure	93 (25)
Missing	23
Thrombolysis treatment received	
No	260 (67)
Yes	110 (28)
N/A	19 (49)
Missing	12

Note. TAFE = technical and further education; TIA = transient ischemic attack; N/A = not applicable.
[a] Data within each variable may not add to total sample size due to missing values.

Discussion

The most frequent unmet needs reported in this study were obtaining stroke-related information about how to prevent further strokes

Figure 1
Count of Unmet Needs Reported (N = 402)



(secondary prevention) and what to expect from the stroke journey, as well as practical advice and assistance in relation to driving, getting jobs done around the home, and preventing falls. Our findings are consistent with previous studies which report that many survivors of stroke (>80%) have unmet needs 12 or more months following stroke (Andrew et al., 2014, 2016). Similarly, Olaiya et al. (2017) also found that the most frequently reported unmet need was secondary prevention.

A higher count of unmet needs was associated with identifying as Aboriginal and/or Torres Strait Islander, albeit a very small sample which may not necessarily be generalizable to all Aboriginal and/or Torres Strait Islander people who have experienced stroke. This is not surprising given that Aboriginal and Torres Strait Islander peoples experience stroke-related mortality rates 1.5-fold that of non-Aboriginal Australians, and a burden of disease (disability-adjusted life years) 2.3-fold that of non-Aboriginal Australians (Australian Institute of Health & Welfare, 2018). Furthermore, Aboriginal people reportedly experience a range of barriers to accessing health care to address their needs, communication barriers, racism, limited services in rural and remote areas, and difficulties traveling to available services (Blacker & Armstrong, 2019). Our findings reflect those of previous studies, which suggest that few Aboriginal survivors of stroke have access to practical, understandable information; and their follow-up care is often limited and fragmented. However, neither of the previous studies that have examined unmet needs (Andrew et al., 2014, 2016; Olaiya et al., 2017) reported

Table 2
Top 10 Unmet Needs Reported by Participating Survivors of Stroke (N = 402)

LUNS items (ordered highest to lowest)	Have need, *n* (%)[a]
I would like more information about my stroke (e.g., what is a stroke, why it has happened to me, and how to avoid having another one)	239 (61)
I need some help/advice about getting back to driving and/or getting an accessible parking permit	100 (26)
I would like outside help to get jobs done in my home (e.g., cleaning, cooking, ironing, fixing things)	84 (22)
I am worried I might fall (again) and this is stopping me from doing my usual things	80 (21)
I regularly get pain and nothing seems to ease it	52 (13)
I would like to find out about traveling on buses, taxis, and/or trains	48 (12)
I need additional aids (e.g., kitchen equipment) or adaptions (e.g., stair lift, grab rails) inside the home.	47 (12)
My walking and general moving seem to be getting worse and I'm not getting any help with this	39 (10)
I haven't had my medication/blood pressure checked for some time and would like a check-up	31 (8)
I need adaptions outside the home (e.g., ramp, rail) but they haven't been ordered yet or I've been waiting too long	19 (5)

Note. LUNS = Longer-Term Unmet Needs After Stroke.
[a] Data within each variable may not add to total sample size due to missing values.

Table 3
Factors Associated With Reporting a Higher Count of Unmet Needs

Variable	N	Crude model		Adjusted model[a]			
		OR [95% CI]	*p*	*OR* [95% CI]	*p*	Null ICC	Adjusted ICC
						.01	.03
Gender							
Female	388	Reference	.275	Reference	.366		
Male		1.22 [0.85, 1.74]		1.20 [0.80, 1.80]			
Age (years)							
		1.01 [1.00, 1.03]	.135	1.00 [0.98, 1.02]	.842		
Education							
Secondary or below	382	Reference	.118	Reference	.804		
Trade/vocational training		0.58 [0.34, 0.98]		0.83 [0.46, 1.51]			
Tertiary		0.93 [0.63, 1.37]		1.01 [0.65, 1.57]			
Employment							
Not working	393	Reference	.004		.435		
Working		0.53 [0.35, 0.81]		0.77 [0.40, 1.49]			
Health insurance							
No	378	Reference	.200	Reference	.650		
Yes		0.79 [0.55, 1.13]		0.91 [0.60, 1.37]			
Concession							
No	378	Reference	.001	Reference	.506		
Yes		1.93 [1.30, 2.87]		1.23 [0.66, 2.30]			
Aboriginal and/or Torres Strait Islander							
No	385	Reference	.019	Reference	.027		
Yes		5.51 [1.33, 22.84]		5.61 [1.22, 25.80]			
Stroke type							
Ischaemic	371	Reference	.266	Reference	.480		
Hemorrhagic		1.16 [0.51, 1.65]		0.87 [0.36, 2.12]			
TIA		1.17 [0.75, 1.82]		1.00 [0.62, 1.63]			
Unsure		1.59 [1.01, 2.52]		1.42 [0.86, 2.37]			
Thrombolysis							
No	381	Reference	.279	Reference	.512		
Yes		0.80 [0.53, 1.20]		0.86 [0.55, 1.35]			

Note. Univariate and multivariate ordinal logistic regression on LUNS. CI = confidence interval; ICC = intraclass correlation coefficient; TIA = transient ischemic attack; LUNS = Longer-Term Unmet Needs After Stroke.
[a] Model adjusted for all covariates.

on the odds of unmet needs for those who identify as Aboriginal or Torres Strait Islander.

To achieve changes in stroke-related outcomes for Aboriginal people, there is increasing recognition that communities require innovative support that meets their language, literacy, and cultural needs (Quigley et al., 2019). In response, the Stroke Foundation recently released the "*Our Stroke Journey*" booklet, a specific resource to support recovery from stroke for Indigenous communities. Similarly, a yarning-based tool for self-management of stroke recovery (*The Take Charge Tool*) is currently being adapted for culturally appropriate and safe use by Aboriginal and Torres Strait Islander people in Australia. Furthermore, Aboriginal survivors of stroke have previously identified the need for better education for health professionals to improve understanding of Aboriginal cultures and ways to ensure culturally secure services. Initiatives such as *Healing Right Way* cultural security training, the implementation of indigenous hospital liaison officers and indigenous community health professionals, community engagement, clinical yarning, and two-way learning are just some of the recommended strategies for improving the quality of health care provided to Aboriginal people (Blacker & Armstrong, 2019; Durey et al., 2016; I. Lin et al., 2016).

The count of unmet needs was not associated with participant age. This finding is not consistent with previous research that suggests a greater number of unmet needs among younger survivors of stroke (Andrew et al., 2014; Olaiya et al., 2017). However, only 26% of the sample in the present study was younger than 65, which represents a considerably smaller proportion than the other two previous Australian studies.

In the present study, only 4% of the variance in unmet needs was accounted for by differences between recruitment sites. This is in contrast to the findings of a previous study that found survivors of stroke in major cities had a greater count of unmet needs among those residing in regional or remote areas (Andrew et al., 2014). However, it should be noted that the sites in the present study were largely hospitals in major cities (six of eight), and therefore 73% of the sample were recruited in major cities.

These findings may be used to inform strategies that support recovery, and suggest ways to enhance discharge planning with survivors of stroke and TIA to better prepare them and their family caregivers for the return home. For example, the findings present implications for enhanced community services in Australia as many of the types of needs endorsed in Table 2 (e.g., "I need some help/advise about getting back to driving and/or getting an accessible parking permit") could be addressed by effective community services. In Australia, these findings have implications for the National Disability Insurance Scheme (NDIS). The NDIS provides funding to eligible individuals with a disability to gain

independence, access new skills, jobs, or volunteering opportunities. Our findings indicate there is a need for this program to connect to recent survivors of stroke, to provide support, funding, and services. While these study findings relate to the Australian context, they may have wider applicability for survivors of stroke and TIA in other countries and highlight the importance of identifying the unmet needs of survivors to ensure that discharge recommendations and follow-up care address these needs. However, needs and available supports are likely to differ across countries and healthcare systems, and time poststroke. Therefore, these findings may be generalizable to survivors of stroke in countries with healthcare systems and/or community services are similar to those in Australia. However, they may not be generalizable to those in countries that do not have access to similar services. For example, previous systematic reviews have suggested that an "imbalance between the supply of resources and demands for services may be affected by many factors, such as national health policies, availability of services, place of residence, patients' choices" (B. Lin et al., 2021; Zawawi et al., 2020).

Furthermore, social support was not examined in this study. However, given other research findings in relation to the beneficial effects of social support utilization on adjustment after stroke (Zhou & Kulick, 2023), this is an important area for future research.

Strengths and Limitations

This was a large study conducted with participants recruited from eight hospitals and utilized a validated measure to assess the unmet needs of survivors of stroke. However, results may not be generalizable to survivors with more severe cognitive impairment or aphasia limiting their ability to provide informed consent, or those survivors discharged to residential care, as these subgroups were excluded from the study. As the prevalence of poststroke cognitive impairment has been reported to range from 20% to 80% (Sun et al., 2014), and aphasia reported to occur in up to 35% of survivors poststroke (Gottesman & Hillis, 2010), this may have led to an underestimation of unmet needs. Similarly, response bias may be present as this was a pen-and-paper survey sent via mail to patients recently discharged. This may have precluded the ability to complete the survey for those who did not have someone available to assist with completing the pen-and-paper survey (if required), or with hemiparesis or other physical limitations. Furthermore, as the survey was sent by post to patients recently discharged, study methods did not ascertain whether it was the survivor of the stroke/TIA themselves who completed the survey. In addition, consent bias may be present, with only 35% of eligible patients who were invited to participate providing their consent to participate. However, survey completion rates of 35%–40% are commonly reported for health research and considered acceptable for routine monitoring (Ahmed et al., 2014). Some data on age and gender were collected with the intention to assess possible response bias by comparing the gender and age of those who completed a survey (consenters) with those who were sent a survey but did not respond (nonconsenters). However, not all sites were able to provide this level of detail, thus this assessment was not possible. Further research is also needed in relation to the factor structure of the LUNS measure. However, consistent with other research (Arwert et al., 2019; Forster et al., 2014; Groeneveld et al., 2018), total scores have been reported in this study. Multiple imputation results were consistent with the complete-case analysis and therefore the complete-case analysis was used in presenting the results.

Conclusion

Unmet needs are common in recently discharged survivors of stroke. These findings may be used to inform strategies that support recovery after stroke. Providing increased information, particularly to those identifying as Aboriginal and/or Torres Strait Islander, may help reduce unmet needs among survivors of stroke or TIA.

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Received December 10, 2023
Revision received April 15, 2024
Accepted April 15, 2024 ■