



## Health Care Professionals knowledge, experiences, and perceptions of the provision of psychological care to patients post stroke: A Systematic Review

Gillian MERRIGAN<sup>1</sup>

Louise BENNETT<sup>2</sup>

<sup>1</sup>Our Lady's Ward, Community Rehabilitation Unit,  
Waterford Residential Care Centre (WRCC), HSE,  
Waterford, Ireland

<sup>2</sup>Department of Nursing and Health Care, School of Health Sciences,  
Cork Road, South East Technological University (SETU), Ireland

Email: [gillian.merrigan@hse.ie](mailto:gillian.merrigan@hse.ie)

*Review article*

Received: 4-May-2023

Revised: 3-June-2023

Accepted: 7-June-2023

Online first: 9-June-2023

### Abstract

**Introduction:** Depression and/or anxiety is associated with sub-optimal recovery and a reduction in quality of life for patients following a stroke. However, the literature suggests that the psychological needs for patients post stroke are insufficient with poor provision of psychological services.

**Aim:** To examine HCPs knowledge, experiences, and perceptions of the provision of psychological care to patients post stroke.

**Methods:** A systematic review referenced to PRISMA guidelines was used. The studies were retrieved from six databases (CINAHL, the Cochrane Library, PubMed, Science Direct, Wiley Online library and Ovid SP). Twelve studies were included in the final analysis.

**Results:** Findings demonstrate that HCPs have a basic understanding of the psychological/emotional problems associated with stroke. Psychological care was identified as been given a low priority within stroke rehabilitation services and described as inconsistent, uncoordinated, and ad hoc. Barriers to providing psychological care included: poor access to specialist expertise; lack of resources and poor managerial support. Furthermore, the need for specialist supports via case discussion and reflective practice was identified.

**Conclusions:** This review suggests that improvements in terms of psychological care and services offered to patients post stroke is needed as is the value of support from managers to provide sufficient resources. This review has the potential to assist policymakers to understand the barriers and potential facilitators to psychological care provision to patients post stroke.

**Keywords:** Stroke, HCPs, rehabilitation services, knowledge, perceptions, experiences, psychological care, service improvement.

Citation: Merrigan, G., Bennett, L. (2023). Health Care Professionals knowledge, experiences, and perceptions of the provision of psychological care to patients post stroke: A Systematic Review. *Journal of Health and Rehabilitation Sciences*, 2023 June 11; 2(1):45-59. <https://doi.org/10.33700/jhrs.2.1.70>

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Corresponding address:

Gillian MERRIGAN

Our Lady's Ward, Community Rehabilitation Unit,  
Waterford Residential Care Centre (WRCC), HSE,  
Waterford, Ireland

Phone: 00353-051- 848700

Email: [gillian.merrigan@hse.ie](mailto:gillian.merrigan@hse.ie)

## 1. Introduction

A Cerebral Vascular Accident (CVA), more commonly known as stroke occurs when the blood supply to the brain is disrupted, resulting in oxygen starvation and loss of function, and is the second leading cause of death and third leading cause of death and disability combined globally (Feigin et al., 2022). According to the literature, a third of individuals post stroke suffer from depression and/or anxiety and this is associated with sub-optimal recovery and a reduction in quality of life (Hackett et al., 2014; Robinson & Jorge 2016). Therefore, prevention and treatment of the psychological effects of stroke is essential to optimise rehabilitation and recovery. Routine psychological assessment post stroke is guided by evidence-based practice and provided for in quality stroke care road maps such as the Global Stroke Guidelines (Lindsay et al., 2016). The stepped care framework is advocated by the NHS Stroke Improvement Programme (Gillham & Clark 2011) and the National Clinical Guideline for Stroke 2016 (Bowen et al., 2016). However, the literature has identified a suboptimal provision of psychological services such as: access to clinical expertise; and a knowledge and skill deficit among staff (Hotter et al., 2018; Johnson et al., 2019; Mc Elwaine et al., 2016; National Office of Clinical Audit, 2020, Norving et al., 2018). Self-determination theory in healthcare suggests the provision of basic psychological needs for patients post stroke has the potential to improve patient's autonomy and wellbeing (Deci & Ryan 2012). The literature has reported that patients post stroke are unaware that HCPs can provide such support and suggests that due to HCPs lack of self-confidence in the assessment and management of psychological issues, discussions with patients is avoided (Platten 2014, Harrison et al. 2017). With this in mind, this review examines HCPs knowledge, experiences, and perceptions of the provision of psychological care to patients post stroke and to make

recommendations for future practice, education, policy and research.

## 2. Method

### 2.1. Research design

A comprehensive systematic review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2020) for reporting findings.

### 2.2. Search methods

A systematic review of studies published in Cumulative Index to Nursing & Allied Health Literature (CINAHL), Cochrane Library, PubMed, Science Direct, Wiley Online Library and Ovid SP was undertaken. A variety of terminology was employed in the literature to describe 'psychological care'. Therefore, combinations of search terms using the Boolean operators AND/OR were used to search the databases as identified in Table 1. The reference lists of appropriate studies were also hand-searched for additional articles. Nurses are the largest professional group to work with patients post stroke and play a critical role in providing emotional support (Aadal et al., 2013; Clarke, 2014; Dryer et al., 2016; Kirkevold, 2010, Theofanisidis & Gibbons 2016). Whilst initially the aim of this review was to examine nurse's knowledge, experiences, and perceptions of the provision of psychological care to patients post stroke, a paucity of literature exists and therefore it was necessary to broaden the aim of this systematic review and examine HCPs. The initial search found only two papers from the nurse's perspective; years published 1996, 2016. Consequently, the search was widened to include all members of the stroke multidisciplinary team (see Table 1). Inclusion criteria included no time limits; studies published in the English language only; and studies that focused on HCPs knowledge, experiences, and perceptions of the provision of psychological care to stroke patients.

**Table 1:** Key search terms

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Nurse(s) or "rehabilitation nurse" or "health care professionals" or "health care assistants (hca's)" or "staff member" or "multidisciplinary team (mdt)" or "speech and language therapists (slt)" or "occupational therapists (ot)" or "physiotherapists" or "psychologists" or "allied health professionals" or "therapists" and

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"perspective" or "understanding" or "belief" or "opinion" or "knowledge" or "attitude" or "management" and

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Psychological care" or "emotional care" or "mental health" or "depression" or "anxiety" or psychosocial wellbeing" or "psychological needs" or "emotional needs" or "mental health needs" or "mood disorders" and

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"stroke" or "post stroke" or "cva" or "cerebrovascular accident" or "stroke rehabilitation" or "aphasia post stroke" or "stroke recovery".

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### 2.3. Search outcomes

Through database searching 1025 records were identified from the initial search and four articles were identified from citation citing generating a combated total of 1029 records (see Figure 1). One hundred and eighteen duplicate papers (n=118) were identified and removed. Nine hundred and seven and were screened of which 879 were excluded. The remaining 28

articles plus 4 articles from citation searching resulted in 32 articles identified for full reading in relation of terms of eligibility. Twelve primary studies met the criteria for inclusion in the literature review. Eight of the 12 studies were included in a systematic review of a doctoral thesis by Stroyde (2019), the divergent focus of the review therefore excluded it.

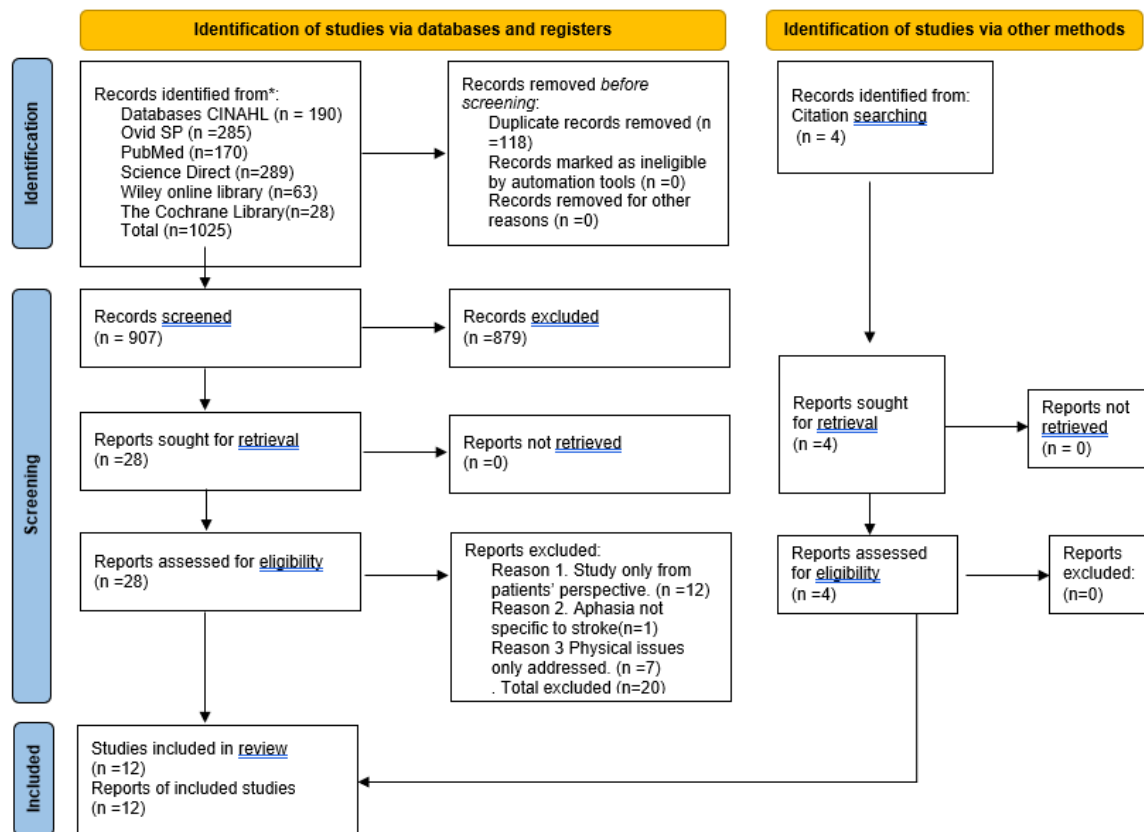


Figure 1: PRISMA Flow Diagram

### 2.4. Data extraction, analysis and presentation

Data extracted from the studies specified the name of author, publication year, city, country, workplace setting, research aim and design, study population, sample size, and outcomes. Results and key findings are presented in a narrative and table summary (see Table 2).

### 2.5. Quality review

The Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018) was used to allow critical appraisal and quality assessment of the qualitative; quantitative; and mixed methods studies that were included in this review (see Table 3). MMAT findings of the research studies found that overall, they were of good quality, with the exceptions of Gurr (2009) and Bennett (1996). Many tools have been criticised because of their limitations that have potential bias findings

(Hong et al., 2018). Tools such as MMAT who combine items to yield a numerical score particularly with qualitative studies (such as Bennett 1996) often are difficult to judge and therefore not infallible (Hong et al., 2019).

### 2.6. Characteristics of included studies.

The characteristics of the included studies are presented in Table 2. Of the 12 studies, seven were of qualitative design, 4 of quantitative design and one mixed method. The earliest article was published in 1996 and latest published in 2021. Six studies were conducted in the UK, four in Australia, one in Ireland and one in the United States. Four studies focused on the perspectives of the MDT, five studies on SLT's, two studies on nurses and HCA's and one study focused on OT's.

**Table 2.** Characteristics of studies

Study & country	Aim	Design	Sample & setting	Data Collection	Summary & Classification of Key Findings
Baker et al., (2021a)  Australia	To explore current practice for managing depression after post-stroke aphasia from the perspective of HCPs	Qualitative Interpretive Description.	39 HCPs (allied health professions, nursing, and medicine, stroke MDTs. Across metropolitan and regional hospital/community settings.	5 semi-structured focus groups	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– Depression after stroke is a challenging area of stroke rehabilitation.</li> </ul> <p><b>HCPs experiences of the barriers.</b></p> <ul style="list-style-type: none"> <li>– Psychological issues are not a high rehab priority.</li> <li>– Identifying and managing psychological problems are ad hoc and HCPs are trying to bridge the gap between patient's psychological care needs and limited services.</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– Integrating mental health care into stroke rehabilitation may be achieved through policy development, leadership and specialist training.</li> </ul>
Baker et al., (2021b)  Australia	To identify, the barriers, and facilitators to implementing stepped psychological care for depression after post-stroke aphasia from the perspective of HCPs	Qualitative Interpretive Description.	39 HCPs (allied health professions, nursing, and medicine, stroke MDTs. Across metropolitan and regional hospital/community settings.	5 semi-structured focus groups	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– HCPs were aware of depression after post-stroke aphasia and the need for an MDT approach.</li> <li>– HCPs had no experience with the stepped psychological care framework.</li> </ul> <p><b>HCPs experiences of the barriers</b></p> <ul style="list-style-type: none"> <li>– HCPs lack knowledge &amp; skills (such as mood screening &amp; counselling).</li> <li>– HCPs negative attitudes.</li> <li>– Stigma felt by patients.</li> <li>– Lack of strategies to engage people with aphasia in therapy.</li> <li>– Limited quiet areas for counselling, social interaction and resources impacted care.</li> <li>– A lack of leadership</li> <li>– A lack of funding and resources</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– Implementation of stepped psychological care framework with adaptations for patients with aphasia.</li> <li>– Training: Improving skills, knowledge, and attitudes of staff.</li> <li>– Modification of physical environment to enhance mood and communication improved care.</li> <li>– Strong leadership and resources such as psychologists.</li> </ul>

**Table 2.** Continued

Manning et al., (2020)	To understand what SLT and related support services are currently available to patients living well with aphasia post stroke in Ireland	Quantitative	95 SLT's Across all care settings that provide stroke services to PWA in Ireland.	Cross-sectional survey	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– Access to communicatively accessible mental health support for patients with aphasia was lacking.</li> </ul> <p><b>HCPs experiences of the barriers.</b></p> <p>Evidence-practice gaps were evident in terms of the amount, intensity, and timing of SLT in order to be maximally effective.</p> <ul style="list-style-type: none"> <li>– Lack of patient input into service design and evaluation.</li> <li>– Inconsistent access to mental health services and lack of community support for families.</li> <li>– Shortcomings in access to aphasia information for patients.</li> <li>– Shortcomings in training for healthcare professionals.</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– A coordinated and standardised approach to supporting people with aphasia across Ireland.</li> </ul>
Ryan <i>et al.</i> , (2019)	To investigate speech-language pathologists (SLPs) perspectives on how they currently support people with aphasia who have mood problems after stroke:	Qualitative Thematic Analysis	Eighteen SLPs. Working in a clinical role in any healthcare setting.	Semi-structured interviews	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– Patients with aphasia suffer a ‘double whammy’ impact due to lack of psychological/counselling services and the additional barriers imposed by compromised communication.</li> </ul> <p><b>HCPs experiences of the barriers.</b></p> <ul style="list-style-type: none"> <li>– A lack of psychological/counselling services</li> <li>– Mood and communication were competing rehabilitation priorities.</li> <li>– A significant lack of psychological/counselling professionals with experience of working with people with aphasia.</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– SLP’s developing an understanding of the barriers and facilitators to patients with aphasia seeking help.</li> <li>– SLP’s are key members and must support patients seeking help.</li> </ul>

Table 2. Continued

Simpson <i>et al.</i> (2018)  USA	To examine OTs practice in addressing the psychological needs of patient's following a stroke.	Mixed methods	Occupational Therapists (n=764) 10 participated in focus groups. Working in various healthcare settings across the US.	Online survey & two focus groups employing semi structured interview techniques.	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– OTs valued their role as providers of mental health services in stroke</li> <li>– The majority of OT's acknowledged that mental health needs of patients were an important part of rehab,</li> <li>– 57% of OT's were happy with the care they gave.</li> <li>– There were varied levels of engagement by staff.</li> </ul> <p><b>HCPs experiences of the barriers.</b></p> <ul style="list-style-type: none"> <li>– Lack of training, resources, time limitations and alternate priorities.</li> <li>– Physical recovery was given priority.</li> <li>– A lack of training &amp; knowledge for working with mental health issues in stroke</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– Greater emphasis on mental health during professional training.</li> <li>– Greater access to on-the-job training &amp; education. OT's must clearly articulate their role to address MH issues.</li> </ul>
Northcott <i>et al.</i> , (2018)  UK	To analyse SLTs perceptions of their role; their experiences of specialist training & support & working with other members of the MDT such as mental health professionals (MHPs) In addition, to explore the barriers & facilitators to addressing psychosocial needs for patients post stroke	Qualitative Data analysed using a framework approach	23 SLT's In healthcare settings across the stroke care continuum.	6 focus groups	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– SLT's agreed that they had a role in social participation need of patients.</li> <li>– Lack of consensus on the scope of the SLT role in addressing psychological wellbeing</li> </ul> <p><b>HCPs experiences of the barriers.</b></p> <ul style="list-style-type: none"> <li>– Lack of skills, resources, and support from managers</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– Specialist support via case discussion and reflective practice.</li> <li>– Ability to refer patients to MHP's</li> <li>– Adapting a whole team approach with peer and management support.</li> <li>– Training in counselling and collaborative teamwork between SLT's and MHP's; the ideal service would include either MHP's skilled in working with people with aphasia or SLT's skilled in mental health.</li> </ul>

**Table 2.** Continued

Northcott et al., (2017)  UK	To examine SLT's practice's in assessing the psychological needs of people with aphasia and explore their experiences of working with mental health professionals	Quantitative Data was analysed using descriptive statistics, with open ended questions analysed using content analysis	124 SLTs In healthcare settings across the stroke care continuum.	Online Survey containing free text responses	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– 50% of SLT's believed most patients with aphasia had psychological problems.</li> <li>– The majority of SLT's believed that supporting psychological wellbeing is part of their role but only 42% felt confident to do it.</li> <li>– There were varying levels of counselling skills among SLT's.</li> </ul> <p><b>HCPs experiences of the barriers.</b></p> <ul style="list-style-type: none"> <li>– Lack of time.</li> <li>– &gt;60% feeling under skilled, lacked training and had limited ongoing support.</li> <li>– Psychological care was a low priority.</li> <li>– Lack of aphasia specific skills of MHP's</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– Collaborative teamwork between clinical psychologists</li> <li>– Psychological provision alongside specialist support and supervision.</li> </ul>
Harrison et al., (2017)  England	To explore patients, carers and health professionals' experiences of the psychological needs and care for post stroke patients	Qualitative Thematic Analysis	31 Stroke Patients 28 Carers 66 HCPs From seven stroke services across the care continuum.	Semi-structured interviews and focus groups	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– HCPs showed awareness that patients need psychological support.</li> <li>– Frustration and resignation at the lack of availability of formal psychological support.</li> <li>– Reliance on medication, such as antidepressants, as a first line measure in absence of formal psychological support.</li> </ul> <p><b>HCPs experiences of the barriers.</b></p> <ul style="list-style-type: none"> <li>– HCPs are performing the role of psychologists without skills and training.</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– Psychological expertise and protective factors reduce the need for formal psychological support.</li> <li>– Patients post stroke need improved access to psychologists.</li> <li>– Further research is required into alternative options to formal psychological support.</li> </ul>

Table 2. Continued

Bennett (2016) England	To identify how nurses encourage emotional wellbeing and promote recovery following a stroke	Qualitative	16 nurses and 17 Healthcare Assistants in a 28-bed combined acute & rehabilitation stroke unit.	Interpretive ethnography Data collection methods involved: (1) One-to-one interviews (2) participant observation and (3) documentary records of all staff.	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– Nurses conveyed an understanding/awareness of a set of core values based on their knowledge of emotional experience of stroke.</li> <li>– Providing emotional support was achieved through routine nursing interventions by being ‘tuned in to their patients’ emotional needs.</li> </ul> <p><b>HCPs perceptions of the facilitators.</b> An emergent theoretical model developed and illustrated a complex process of</p> <ul style="list-style-type: none"> <li>– building, sustaining and reframing relationships among nurses and patients &amp; their families (managing challenges to recovery)</li> </ul>
Sekhon, Douglas, Rose (2015) Australia	To explore beliefs, attitudes, and practices of SLT’s in addressing psychological well-being in people with aphasia after stroke	Quantitative	111 SLTs In healthcare settings across the stroke care continuum.	Web based survey consisting of open and closed questions	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– Most reported that half their patients had poor psychological well-being.</li> <li>– More than half SLP’s did not formally assess their patient’s psychological wellbeing, most informally assess.</li> </ul> <p><b>HCPs experiences of the barriers.</b></p> <ul style="list-style-type: none"> <li>– Being under-skilled.</li> <li>– Inadequate time.</li> <li>– Inadequate staffing</li> <li>– People with aphasia declining professional help.</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– Having personal and professional experience</li> <li>– Availability of counselling.</li> </ul>
Gurr (2009) England	To examine staff perceptions working in a stroke rehabilitation unit of the provision of psychological care	Quantitative Data analysed using descriptive statistics and qualitative analysis based on grounded theory.	28 stroke rehabilitation HCPs. Single stroke Rehabilitation unit	Survey with closed and open-ended questions	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– All participants agreed emotional care work was relevant to their profession but were unaware of how psychological issues were currently monitored.</li> </ul> <p><b>HCPs experiences of the barriers</b></p> <ul style="list-style-type: none"> <li>– No emotional care duties allocated and no scheme in place.</li> <li>– Lack of training for staff on psychological issues. Staff may not include psychological care in their duties or ‘turn a blind eye’ to issues.</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– Further awareness, training and support from senior staff was needed.</li> <li>– A mixture of opinions regarding formal and informal approaches for addressing psychological needs was identified.</li> </ul>



Table 2. Continued

Bennett (1996) England	To explore how nurses in a stroke rehabilitation unit meet the psychological needs of post stroke patients with depression	Qualitative	14 Nurses Single stroke rehabilitation unit.	Individual semi structured interviews	<p><b>HCPs understanding/awareness.</b></p> <ul style="list-style-type: none"> <li>– Nurses demonstrated awareness of prevalence &amp; symptoms of depression post stroke.</li> <li>– Good understanding of the negative effects of depression on stroke rehabilitation.</li> <li>– Most nurses did not assess psychological functioning.</li> </ul> <p><b>HCPs experiences of the barriers.</b></p> <ul style="list-style-type: none"> <li>– Precedence given to physical rather than psychological care.</li> <li>– Lack of knowledge and skill from staff.</li> <li>– Lack of time</li> </ul> <p><b>HCPs perceptions of the facilitators.</b></p> <ul style="list-style-type: none"> <li>– Access to expert psychological care to refer patients.</li> <li>– Further training and skills for nurses to include importance on psychological care provision for patients post stroke.</li> </ul>
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### 3. Results

To better understand HCPs knowledge, experiences, and perceptions of the provision of psychological care to stroke patients this study focuses on the classification of three analytical categories found from the review of the final selected articles. The three analytical categories are: (1) HCPs understanding/awareness of the psychological/emotional problems associated with stroke; (2) HCPs experiences of the barriers to providing psychological care to patients post stroke; and finally (3) HCPs perceptions of what may facilitate/improve the provision of psychological care to patients post stroke. These will now be explored.

#### 3.1. HCPs understanding/awareness of the psychological/emotional problems associated with stroke.

HCPs understanding of psychological and emotional problems that patients post stroke experience is essential to the management of their care (Nicholls, 2003). However, Gurr's (2009) study investigating 28 HCPs perceptions of psychological/emotional care on a stroke rehabilitation unit, found that while HCPs recognised that psychological/emotional care understanding was relevant to their profession many identified only a basic understanding of the psychological consequences following a stroke. Participants reported been unaware of how psychological issues for patients post stroke were currently monitored. In the UK, Northcott et al. (2017) carried out an online

survey to examine SLT's practices in how they address the psychological needs of people with aphasia and their experiences of working with mental health professionals. Fifty percent (50%) of the participants observed that between 70-100% of the aphasic patients they had cared for had experienced psychological problems. While most felt that supporting psychological wellbeing is part of their role only 42% felt confident to do so. A similar study undertaken in Australia by Sekhon et al. (2015) found that the majority (85.4%) of SLT's believed their patients with aphasia had poor psychological wellbeing, while 109 out of 110 respondents felt all their patients were at high risk of experiencing psychological difficulties. The researchers in this study recommended that all HCPs should have a good understanding of the significant impact of psychological problems on stroke rehabilitation whether reported directly or indirectly (Sekhon et al., 2015). Baker et al. (2021a) and Baler et al. (2021b) explored the difference between recognising 'normal' post-stroke grief responses and the mental health condition of post-stroke depression. In their study, MDT participants were aware of depression after post-stroke aphasia and the need for an MDT approach. However, they struggled to distinguish between providing aphasia rehabilitation and specifically managing post-stroke depression. In addition, findings revealed that they had no experience with the stepped psychological care framework.

**Table 3.** The Mixed Methods Appraisal Tool (MMAT) Summary (Hong et al., 2018)

Study	Design	MMAT criteria
Baker C., Worrall L., Rose M. and Ryan B. (2021) *****	Qualitative	Met all qualitative criteria
Baker C., Worrall L., Rose M. and Ryan B. (2021) *****	Qualitative	Met all qualitative criteria
Ryan B., Bohan J. and Kneebone I. (2019) *****	Qualitative	Met all qualitative criteria
Northcott S., Simpson A., Moss B., Ahmed N. and Hilari K. (2018) *****	Qualitative	Met all qualitative criteria
Harrison M., Ryan T., Gardiner C. and Jones A. (2017) *****	Qualitative	1.4 More evidence required to demonstrate sufficient interpretation of results
Bennett B. (2016) *****	Qualitative	Met all qualitative criteria
Bennett B. (1996) **	Qualitative	1.3 Unable to determine if findings are derived accurately. 1.4 Not enough information to determine if the interpretation of results is sufficiently substantiated by the data. 1.5 There is insufficient evidence of coherence between stages.
Manning M., Cuskelly C., Russ E. and Franklin S. (2020) *****	Quantitative	4.4 There is a risk of nonresponse bias.
Northcott S., Simpson A., Moss B., Ahmed N. and Hilari K. (2017) ***	Quantitative	4.2 The online questionnaire was sent to the aphasiology society in the UK and other aphasia specific networks; therefore, the sample population was limited to SLTs with an interest in aphasia and may not be fully representative of the target population. 4.4 There is a risk of nonresponse bias.
Sekhon J.K., Douglas J. and Rose M.L. (2015) *****	Quantitative	4.4 There is a risk of nonresponse bias.
Gurr B. (2009) **	Quantitative	4.3 No information on how the questionnaire was validated or piloted. 4.4 Risk of non-response bias with survey. 4.5 Unclear of the researcher's theoretical position. Unclear of the proximity of the researcher to the study. It is implied that the researcher carried out a teaching session prior to the survey. If so, this may have influenced responses by participants. Arguably, further information on the analysis of open-ended questions is needed. Insufficient information on the analysis of closed ended questions is provided.
Simpson E.K., Ramirez N.M., Branstetter B., Reed A., Lines E. (2018) *****	Mixed Methods	1.5 Not enough evidence to demonstrate coherence between steps. 4.4 Risk of non-response bias with survey. 5.5 Not all quality criteria met the qualitative and quantitative components of the study.

Note: 5\*\*\*\*\* or 100% quality criteria met 4 \*\*\*\*\* or 80% quality criteria met 3 \*\*\* or 60% quality criteria met 2 \*\* or 40% quality criteria met 1 \* or 20% quality criteria met

### **3.2. HCPs experiences of the barriers to providing psychological care to patients post stroke.**

The barriers to providing psychological care to patients post stroke included: (1) poor service delivery and access to specialist expertise; (2) HCPs perceived lack of knowledge and skills; and (3) a low priority given to psychological care within the service.

#### **3.2.1 Poor service delivery and access to specialist expertise**

Suboptimal provision and dis-satisfaction with the level of psychological services was evident in all but one study of the included studies, with reports of the provision of psychological care as inconsistent, uncoordinated and ad hoc (Baker et al., 2021a; Baker et al., 2021b; Bennett, 1996; Gurr, 2009; Harrison et al., 2017; Manning et al., 2020; Northcott et al., 2017; Northcott et al., 2018; Ryan et al., 2019; Sekhon et al., 2015; Simpson et al., 2018) causing frustration amongst patient's, carers, and HCPs (Harrison et al., 2017; Ryan et al., 2019). Consequently, it was acknowledged that some HCPs are assuming the role of psychologists without skills and training in an effort to 'bridge' the gap (Baker et al., 2021a; Harrison et al., 2017). A lack of resources within services was identified as a leading barrier to implementing psychological care (Baker et al., 2021b; Gurr, 2009).

#### **3.2.2 Perceived lack of knowledge and skills.**

Findings from the included studies also report that HCPs perceive a lack of knowledge and are under-skilled. For example, Northcott et al., (2017) found that only 42% of staff felt confident in providing psychological wellbeing. In a US study, although 55% of OT's were happy with the psychological care, they delivered they still perceived they were under skilled due to poor educational preparation within their OT training (Simpson et al. 2018). Meanwhile in Australia, a web-based survey undertaken by Sekhon et al., (2015) identified that more than half of SLT's do not formally assess their patient's psychological wellbeing, citing perceptions of skill deficits as the main barrier in providing psychological care to people with aphasia. Findings of skill deficits were mirrored in studies by Baker et al., (2021b), Manning et al., (2020) and Ryan et al., (2019), who all identified that knowledge, skills, and attitudes have the most impact on implementing the appropriate psychological care for patients with post-stroke aphasia suffering depression. Many HCPs were dissatisfied with the provision of mental health training they received within their

disciplines and attribute this to their lack of skills and confidence in addressing the psychosocial needs of patients post stroke, relying instead on mental health professionals to address any mental health needs (Baker et al., 2021b, Northcott et al., 2017, Sekhon et al., 2015, Simpson et al.2018).

#### **3.2.3 Low priority given to psychological care within the service**

Physical outcomes are prioritised over psychological recovery, and due to time constraints HCPs must focus on the functional outcomes within their various disciplines (Bennett, 1996, Northcott et al., 2017, Northcott et al., 2018, Sekhon et al., 2015, Simpson et al., 2018). An interpretive ethnographic study in the UK by Bennett (2016) describes an emergent theoretical model that illustrates the processes of building, sustaining and reframing relationships among nurses, patients and relatives during the patient's stroke journey as being central to promoting patients' emotional wellbeing and recovery. Yet, they found nurses had limited time to spend with patients and relatives to develop these key relationships.

### **3.3. HCPs perceptions of the facilitators to the provision of psychological care to patients post stroke.**

The perception of HCPs as found in this review is that access to psychology services for support and training acts as a facilitator to providing psychological care to patients post stroke (Baker et al., 2021a; Baker et al., 2021b; Bennett, 1996; Gurr, 2009; Harrison et al., 2017; Manning et al., 2020; Northcott et al., 2017; Northcott et al., 2018; Ryan et al., 2019; Sekhon et al., 2015; Simpson et al., 2018).

In the UK, a qualitative study by Northcott et al., (2018) explored 23 SLT's perceptions of barriers and facilitators to addressing psychosocial needs in stroke health care settings. Participants suggested that specialist support via case discussion and reflective practice was deemed a facilitator along with the ability to refer patients to mental health professionals. In addition, adapting a whole team approach with peer and management support was acknowledged.

An Irish survey of 95 SLT's found there was inconsistent access to mental health services for stroke patients and recommended a need for a coordinated and standardised approach to supporting people with aphasia. This study also recognised that SLT's require further training and support to provide psychological care to people with aphasia post stroke (Manning et

al., 2020). Similarly, a study in Australia found that SLT's must increase their awareness and understanding of the barriers and facilitators to patients with aphasia seeking help (Ryan et al., 2019). Findings showed that the level and intensity of training required by HCPs differed among studies depending on their experience and former training (Sekhon et al., 2015). Indeed, results from studies by Northcott et al., (2018) and Bennett (1996) showed that HCPs valued the support of their colleagues equally to formal training.

#### 4. Discussion

This review highlights that the majority of HCPs are aware that patients post stroke are at high risk of psychological problems (Baker et al., 2021a; Manning et al., 2020; Northcott et al., 2017; Sekhon et al., 2015; Simpson et al., 2018) and early recognition and management is critical (Herrmann et al., 1998). However, HCPs also acknowledge the need to improve their skills and develop confidence in the assessment and management of psychological and emotional problems for patients post stroke. The literature suggests that HCPs face challenges when identifying psychological and emotional problems associated with stroke (Ayerbe et al., 2013; Das Nair et al., 2016; Robinson & Jorge, 2016). This may be because of the established relationship between post stroke depression and cognitive impairment and the effect this has on a patient's functionality such as speed of thought, memory, understanding, and concentration (Das Nair et al., 2016; Robinson & Jorge, 2016). Consequently, symptoms of depression and anxiety are subclinical and may be less apparent.

Findings of this review also demonstrate that the barriers and challenges to providing psychological care to stroke patients were similar in all the studies reviewed. HCPs overwhelmingly identified a suboptimal provision of psychological services and care provision which they largely attributed to a lack of specialist personnel such as psychologists. Improvement with regards to engagement of all stakeholders within the service, and lack of the continuity of care were highlighted. A lack of knowledge, skill and training provision was also identified for HCPs as a barrier to providing psychological care to patients post stroke. In addition, the physical care and outcomes for stroke patients is prioritised over psychological care. Strikingly, these findings suggest that psychological care provision within rehabilitation services will be ineffective, in terms of implementation and service user

experience, if it takes place in one part of that service experience and not in other aspects. Arguably, there needs to be a holistic service engagement with both the concept and the operation. Thus, although psychological care is an integral part of stroke care pathways, with international specifications such as the Global Stroke Guidelines (Lindsay et al., 2016) and the National Clinical Guideline for Stroke 2016 (Bowen et al., 2016), the findings of this review would suggest that considerable improvement is required.

The findings of this review have established that HCPs access to psychology services for support and training was perceived as a facilitator to providing psychological care alongside peer and managerial support. In consideration of this, the National Clinical Guideline for Stroke 2016 (Bowen et al., 2016) and the National Institute for Health and Care Excellence (NICE) guidelines (2022) for the treatment and management of depression in adults recommend a stepped care framework as best practice to alleviate the demand for clinical expertise such as psychologists (Kendrick et al., 2022). In this instance mood screening and low intensity interventions are delivered by the multidisciplinary rehabilitation team and escalated to 'high intensity' interventions as required, such as clinical psychologists (Kneebone, 2016).

Given their central role in addressing the psychosocial needs of patients following a stroke, nurses are key professionals within the MDT to successfully screen for depression (Aadal et al., 2013; Clarke, 2014; Clarke & Holt, 2015; Dryer et al., 2016; Gillham & Clark, 2011; Kirkevold, 2010; Loft et al., 2019; Mitchell, 2016; Theofansidis & Gibbons, 2016). However, to implement a stepped psychological care framework a collaborative culture and interdisciplinary team approach wherein all HCPs feel supported is necessary. Clarity surrounding HCPs roles is important to the promotion of interdisciplinary interaction and open communication with respect to psychological care provision.

#### 5. Limitations of this review

Firstly, the reviewed studies were primarily conducted in Western countries and therefore may not be generalizable to non-Western countries. Secondly, the search was limited to six electronic databases and included only studies published in the English Language which increases the risk of study selection bias. Thirdly, due to differences in methodologies employed, and variances in sample sizes it was difficult

to compare studies and draw definitive conclusions from this review. Finally, only studies that were in line with the reviews aim and objectives were included, which leaves room for reporting bias.

## 6. Conclusion

This review is both timely and relevant in relation to the psychological needs of patients post stroke and the broader issues of health policy, service design and delivery in relation to the development of rehabilitation care. Findings suggests that HCPs require further clarity and knowledge related to the assessment and management of psychological /emotional needs for patients post stroke. Arguably educational programs based on a holistic, collaborative, interdisciplinary approach has the potential to 'hold the key' to further advance HCPs competence and confidence in psychological care requirements for patients post stroke.

This review highlights inadequate provision of psychological services for patients post stroke and an urgent requirement of alternative models of care to formal psychological support such as the stepped psychological care framework. Moreover, the findings reiterate the requirement for further supports for HCPs from their leaders and organisations in order to improve psychological care provision for patients post stroke and to ensure that these concerns are taken into account in any plans for service transformation in order to develop strategies within rehabilitation services. The findings of this review have the potential to assist policymakers and healthcare leaders to understand the barriers and potential facilitators to psychological care provision for patients post stroke. Future research is warranted to examine issues at an organizational level to explore how support structures impact how HCPs meet the psychological needs for patients post stroke.

## Conflict of interests

The authors declare no conflict of interest.

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