

REVIEW ARTICLE

Quality of Life and Psychological Disorders in Adult Stroke Survivors During the COVID-19 Pandemic: Scoping Review

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ABSTRACT

Neurological dysfunction caused depression, stress, anxiety, and a decrease in quality of life. The purpose of the study was to identify depression, stress, anxiety, and the quality of life which experienced by Stroke survivors during the COVID-19 pandemic. This scoping review was using advanced search techniques on several databases: EBSCO, PubMed, Scopus, and Google Scholar. Keywords included cerebrovascular accident, stroke, CVA, stroke survivor, quality of life, Depression, Stress, Anxiety, psychological disorder, Covid-19, Coronavirus, and sars-cov-2. Depression found 36% in Saudi Arabia, 38.7% got some complains, and 2.1% got extreme complain in Germany, 62% were depression in India, 32.2% have depressive symptoms in Ethiopia, 74.5% for anxiety/depression in Jordan, 23% in China, and 85% got mild and moderate, 15% got extreme in Spain. The quality of life of stroke survivors is low, as well as psychological disorders experienced by stroke survivors are anxiety, stress, and depression in moderate and severe.

Keywords: Anxiety, Depression, Quality of life, Stress, Stroke survivors

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INTRODUCTION

Stroke becomes the most common cause of disability and illness around the world, both in developing and developed countries. Previous study reported that, in 2013, there were 25.7 million stroke survivors, 6.5 million deaths, 113 million disability because of stroke, and 10.3 million new cases (1). In developed countries the incidence of stroke is also increasing and occurs between the ages of 30 to 65 years (2). In Indonesia, stroke is the third rank cause of death and the case of stroke was 8.3 per 1000 in 2007, and the number increases to 12.1 per 1000 in 2013 (3).

The impact of a stroke can cause physical and psychological disorders. The physical impact is in the form of disability and paralysis, while the psychological impact can cause psychological disorders such as stress, anxiety, depression, and low quality of life (3, 4). Most of stroke patients get impact of this stroke adversely affects the daily life. The majority of patients with strokes suffered from psychological problems such as anxiety, stress, and depression (5). During this COVID-19 pandemic, stroke survivors are also affected and suffer the consequences. With stroke comorbid conditions,

they are easier to experience problems due to this covid. During the rehabilitation phase, stroke patients still have residual symptoms in the form of weakness and limitation in carrying out activities as well as a decrease in their quality of life, with this covid they experience a more difficult life.

The quality of life and psychological disorders are experienced by lay people due to the covid pandemic as well as their stroke patients who are more susceptible to the possibility of being exposed to covid-19 (6). Therefore, anxiety and other psychological disorders will be experienced by them. During the covid-19 pandemic, it reported high rates of anxiety (6.33% to 50.9%), depression (14.6% to 48.3%), stress (8.1% to 81.9%), post-traumatic stress disorder (7% to 53.8%), and psychological distress (34.43% to 38%) in China, Spain, Italy, Iran, the US, Turkey, Nepal, and Denmark (7).

To get a clear description related to the quality of life and psychological disorders of stroke survivors, a review is needed. This review will be useful to provide an overview of anxiety, stress, depression, and quality of life of stroke survivors during the pandemic. Reviews related to quality of life, anxiety, stress, and depression need to be disclosed in this article because several reviews related to the quality of life, anxiety, stress, and depression of stroke survivors have been revealed, but for conditions during the covid-19 pandemic, they have not been carried out (3, 8, 9). Therefore, this review will

provide a clear description of quality of life, anxiety, stress, and depression. From the initial search of several databases such as EBSCO, PubMed, Scopus, no reviews have been found on the quality of life and psychological disorders of stroke survivors during the pandemic using a scoping review. Therefore, this review aimed to map a picture of quality of life anxiety, stress, and depression during the COVID-19 pandemic.

METHOD

In this review, we used the approach presented by Arksey and O'Malley's (10), there were 5 stages of the framework, namely (a) identification the research question, (b) identification of relevant studies, (c) selection of the study, (d) charting the data (e) summarization and reporting the results (10)(7). This approach applied in other studies (11, 12). This framework was carried out to map a picture of the quality of life and psychological disorders of stroke survivors during the Covid-19 pandemic.

Identification the research questions

Direction of our review was to explore the quality of life, anxiety, stress, and depression in stroke survivors, so that it is useful in improving their anxiety, stress, depression, and as well as improving quality of life. To ensure that this review can reveal related topics of interest, we presented two research questions to guide searching of articles as follows.

- 1) How is quality of life for stroke survivors during the covid pandemic?
- 2) How are anxiety, stress, and depression experienced by stroke survivors during the covid pandemic?

Identification of relevant studies

In this review, we developed searching strategy from research questions and key concept definitions (10)(7). Key concepts and search terms were useful to capture the literature related to quality of life, anxiety, stress, and depression. Search techniques consisted the use of search tools such as MESH (medical subject heading) and Boolean operators mixed of narrow, broaden and combine literature searches. Some of the linked descriptive keyword searching terms were made to guide the searching outlined in Table I.

To identify primary evidence and consider practicality in the search, inclusion and exclusion criteria were made. Considering that this pandemic event started in 2019, the literature collected started in 2019 until now

Table I. Key search term

Search term
('Stroke*' OR 'Cerebro vascular accident' OR 'CVA')
('COVID-19*' OR 'SARS-CoV-2')
('Quality of life*' OR 'QoL')
('Stress*' OR 'Anxiety*' OR 'Depression*')

in 2021. A full of inclusion and exclusion criteria were listed in Table II. In addition, the electronic database below was used to search the literature: PubMed, EBSCO, SCOPUS, and GOOGLE Scholar to identify peer reviewed literature. This scoping review was completed in the middle of 2021.

Table II. Inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Time period	2019 - 2020	Studies outside these dates
Language	English	Non-English studies
Type of article	Original research, published in a peer review journal	Articles that were not peer reviewed or original research
Ethics clearance	Studies with approved ethics notification	Studies without approved ethics notification
Population	This study focuses on adults and the elderly who suffer from stroke	Studies with populations and samples of patients with other chronic diseases such as CHD, diabetes, tuberculosis
Concept	This study examines quality of life, psychological disorders such as stress, anxiety, and depression.	Studies that do not address the respondent's quality of life, stress, anxiety, and depression
Context	This study deals with stroke and stroke survivors	Studies related to infectious diseases, and chronic diseases other than stroke such as DM, CHD etc.

The strategy was used in determining the feasibility of the study to search for literature using the PCC framework consists of: (a) Population/problem, this study focuses on adults and the elderly who suffer from stroke, (b) Concept, namely this study examines the quality of life, stress, anxiety, and depression, (c) The context is that this study is related to stroke and stroke survivors.

Selection of the Study

After searching the articles, all articles were identified and uploaded to the Endnotes (Clarivate Analytics, PA USA) and screened for duplicates then removed. The title and abstract were screened independently by two reviewers to assess eligibility according to the inclusion and exclusion criteria for review. Full articles were retrieved for all studies that had or potentially meet these inclusion criteria. Based on the full text, two reviewers independently checked whether the study fits with the inclusion criteria. Full text studies which do not meet the inclusion criteria were excluded.

Main search keywords were used, 1015 articles were identified. Furthermore, the articles were filtered based on duplication from several journals as many as 22 articles. After being screened, the articles are sorted by abstract to see if they match the title of the article. There were 955 articles that were excluded because they were not suitable for research purposes and not related to the PCC framework being developed. The articles were re-screened and 30 articles were removed because: The study population is not stroke patients, population is not the adult and elderly age group, reveal other quality

aspects such as sleep, etc., and a literature review. Finally, 8 articles were selected and analyzed in this scoping review that followed the inclusion and exclusion criteria. The article selection process in this review was guided by Preferred Reporting of Items for Systematic Review and Meta-analyses (PRISMA) Scoping Review (13). Figure 1 illustrates the article selection process.

Charting the data

This review follows the work of fourth stage of Arksey and O'Malley's (2005), so the scoping review framework was done by creation of a table of selected articles (10). A summary was consisted of each article relating to the author, year, research location, research design/research methods and sample size and research results and recommendations of the study. Details of the articles included are shown in Table III.

Summarizing and reporting findings

In this stage, the fifth stage of scoping review framework scoping study included summarizing and reporting the results (10).

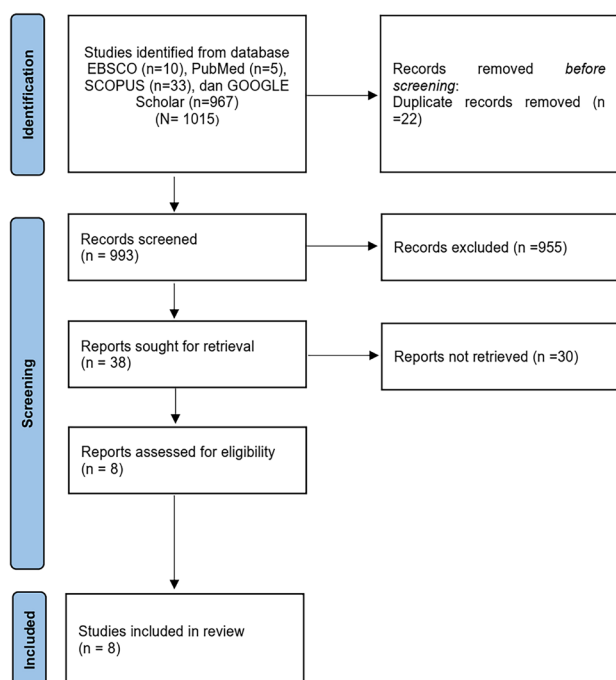


Figure 1: The article selection process

RESULTS

This scoping review yielded 8 articles from seven countries. Of these; one study was conducted in the Saudi Arabia, two in China, one in the German, one in India, one in Ethiopia, one in Jordan, and one in Spain. They included articles with discussion on: quality of life, anxiety/depression, and stress. Mostly those articles reported anxiety/depression among stroke survivors, as well as stress could deteriorate quality of life for stroke survivors. Depression found 36% in Saudi Arabia, 38.7% of patient got some complains, and 2.1% patients got

extreme complain of anxiety/ depression in Germany, 62% of the stroke patients were diagnosed to have depression in India, 32.2% of patients have depressive symptoms in Ethiopia, 74.5% for depression in Jordan, 23% of the patient was reported Anxiety or depression in China, and 85% got mild and moderate, 15% got extreme Anxiety/depression in Spain. However, one study found that the quality of life after the pandemic was higher than before the pandemic but the score of quality of life was still low.

DISCUSSION

In this section, we present findings about the description of the quality of life and psychological disorders experienced by stroke survivors during pandemic of the COVID-19.

Quality of life among stroke survivors during the covid pandemic

The findings showed that the quality of life of stroke survivors during this pandemic COVID-19 was in the low category: 29.1-25.5 it scored from 0 (minimum) to 100 (maximum) (Table III). Also in China reported that the quality of life of stroke survivors was low, either before or after the pandemic, although one study showed during the pandemic their quality of life improves (21). The condition of the low quality of life of stroke survivors is due to the condition of their physical health who have limitations or disabilities, this happens because a stroke attacks the central nervous system so that sometimes after a stroke, sequelae of a stroke appear. The impact of a stroke could affect physical, emotional, intellectual, social, and spiritual aspects (22).

Age can also determine the quality of life of stroke survivors. Dhamoon et al. (2014) reported in their study mention that agelderly was a consistent predictor of a decrease in quality of life all over time in across all domains of stroke survivors (23). Therefore, stroke survivors need to get physical and mental support from those closest to them to improve anxiety, stress, depression and the quality of life. This result was consistent with previous study showed that a positive relation between perceived social support and stroke survivors' HRQoL (24). This support can be obtained from family, group friends or from health workers.

Psychological disorders experienced by stroke survivors during the covid

The results of the analysis of data from several articles obtained, it was found that anxiety, depression, and stress were experienced by stroke survivors. Anxiety was experienced by stroke survivors in Saudi Arabia, Germany, India, Ethiopia, Jordan, Spain, and China (14-16, 18). The majority of patients with strokes suffered from psychological problems such as anxiety, stress, and depression (5). The psychological changed after

Table III. Summarizing and reporting the results

Authors and year	Location	Objectives	Research methods	Outcomes
(14) Ahmed et al. (2020)	Saudi Arabia	To evaluate the impact of COVID-19 pandemic on the rates of post-stroke depression (PSD) and anxiety (PSA)	A total of 52 participants, including 28 males and 24 females were included in current study. All patients were assessed for Follow-up at 90 days was conducted in outpatient clinics or via telemedicine communication. PSD and PSA were also assessed using Hospital Anxiety and Depression Scale (HADS).	Depression and anxiety symptoms were present in 18 (36%) and 16 (32%) participants respectively. Depression was mild in 5 (10%), moderate in 7 (14%), and severe in 6 (12%) patients. Anxiety levels were mild, moderate and severe in 6 (12%), 7 (14%) and 3 (6%) patients respectively.
(15) Deb-Chatterji, et al. (2020)	German	To determine patient-reported health-related quality of life (HRQoL) after stroke thrombectomy in clinical practice, and to identify predictors of better HRQoL.	504 consecutive patients, at 90 days, functional outcome was assessed by the mRS, and patient-reported HRQoL by the EuroQol Group 5 Dimension (EQ-5D) Self-report Questionnaire, consisting of five health domains.	52.9 % patients no complain, 38.7% of patient got some complains, and 2.1% patients got extreme complain of anxiety/ depression
(16) Kumar, et al (2020)	India	To assess the prevalence and predictors of post-stroke depression and anxiety in a tertiary care hospital in Mandya	three months cross-sectional study evaluated and assessed 100 stroke survivors using the structural interview schedule, General Health Questionnaire (GHQ-28) and Hospital Anxiety and Depression Scale (HADS)	About 62% of them were diagnosed to have depression and 52% of them used alcohol and 7% of them had anxiety symptoms.
(17) Tsehayneh (2020)	Ethiopia	To identify poststroke depression in Ethiopia	A cross-sectional study on all patients aged above 18 years and diagnosed with stroke in the past two years who attended the neurology follow-up clinics of Tikur Anbessa Specialized Hospital (TASH) and Zewditu Memorial Hospital (ZMH) was done by using a structured questionnaire containing Patient Health Questionnaire-9 (PHQ-9) depression screening tool	Of 84 patients who were eligible for the study, 32.2% of patients have depressive symptoms.
(18) Almhdawi et al. (2021)	Jordan	To explore levels of depression, anxiety, and stress symptoms and identified their predictors among Jordanian individuals with stroke	a cross-sectional study explored levels of depression, anxiety, and stress symptoms and identified their predictors among Jordanian individuals with stroke. Outcome measures included Depression Anxiety Stress Scale, FuglMeyer assessment, goniometry, hand-held dynamometry, nine-hole peg test, Ashworth scale, Motor Activity Log, ten-meter walk test, and 12-item Short-Form health survey (SF-12).	A total of 153 individuals participated in the study. Proportions of participants with mental health symptoms were 74.5% for depression, 52.9% for anxiety, and 68% for stress
(19) Huang et al. (2021)	China	To describe the long-term health consequences of patients with COVID-19 who have been discharged from hospital and investigate the associated risk factors	In total, 1733 of 2469 discharged patients with COVID-19 were enrolled after 736 were excluded. Cohort study of patients with confirmed COVID-19 who had been discharged from Jin Yin-tan Hospital (Wuhan, China). All patients were interviewed with a series of questionnaires for evaluation of symptoms and health related quality of life	Fatigue or muscle weakness (63%, 1038 of 1655) and sleep difficulties (26%, 437 of 1655) were the most common symptoms. Anxiety or depression was reported among 23% (367 of 1617) of patients
(20) Rodriguez-Hernández (2021)	Spain	To evaluate the influence of conventional rehabilitation combined with virtual reality on improving quality of life related to post-stroke health	A total of 43 participants with subacute stroke. Health-related quality of life as measured by the EuroQoL-5 dimensions instrument (EQ-5D-5L) and EuroQoL visual analog scale (EQ-VAS)	85% got mild and moderate, 15% got extreme Anxiety/ depression. Score of EuroQoL visual analog scale (EQ-VAS) showed 29.1-25.5 it scores from 0 (minimum) to 100 (maximum).
(21) Zhao (2021)	China	To evaluate the QOL of Chinese patients with stroke during the pandemic and explore the associated variables	The QOL of patients with stroke was measured using PCS and MCS. The physical component score (PCS) contains four concepts: physical functioning (PF), role limitations due to physical problems (RP), bodily pain (BP), and general health (GH); the mental component score (MCS) also contains four dimensions: The PCS and MCS values range from 0 to 100, and higher scores indicate better QOL	PCS and MCS were higher among the stroke patients during the pandemic (44.20 ± 18.92 and 54.24 ± 19.08) than before the pandemic (37.98 ± 14.52 and 43.50 ± 20.94). The QOL of Chinese stroke patients was higher during than before the COVID19 pandemic. Pandemic stress aggravated stroke patients' QOL.

a stroke, such as depression, could lead to a worse condition (25). The patients with strokes had problems on spiritual experiences that consisted loss of control and feeling fear of relapse, disorder in sense of self and the experience of time, disconnection, dependence, and loss and hopelessness (26). Changes could be occur in stroke survivors who have an unfavorable impact, this psychological disorder can also affect the anxiety, stress, depression, and quality of life of stroke survivors (27) Therefore, a health worker who works for the benefit and safety of patients, must pay attention to changes that could be there in stroke survivors, especially psychological changes because this will worsen the quality of life of stroke survivors. This was consistent with previous study reported that worse health status in the previous year of the stroke survivor was higher levels of disability and lower HRQoL(28).

In this section, we explored matters relating to implications of the COVID-19 pandemic with the quality of life and psychological disorders of stroke survivors. The results of the study showed that before and after the covid pandemic, the quality of life, anxiety, stress, and depression were mostly low or have moderate and extreme disorders, although there was one article there was an increase in the quality of life during the pandemic but it was still in the low category. This has implications for the quality of care for stroke survivors. The COVID-19 pandemic and the condition of stroke survivors have contributed to the decline in anxiety, stress, depression, and quality of life among stroke survivors. Therefore, it is a challenge for health workers to be able to play a bigger role in efforts to improve the condition of stroke survivors to be even better, especially during this covid-19 pandemic. Several attempts have been made to improve services to stroke patients. During this COVID-19 pandemic, the pre-hospital and in-hospital acute stroke pathways were reorganized to prioritize COVID-19 management (29). In addition, family and social support is important in maintaining and improving the quality of life and psychological stroke survivors.

CONCLUSION

Physical and mental conditions due to stroke contribute in reducing the health status of stroke survivors. In addition, the COVID-19 pandemic, the condition of stroke survivors is low. In general, the quality of life of stroke survivors is low, as well as psychological disorders experienced by stroke survivors are anxiety, stress, and depression in moderate and severe liver. Support from health providers, family, and social workers is needed to improve anxiety, stress, depression, and maintain the quality of life and psychology of stroke survivors.

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