

Original article

Identifying Stroke Caregivers' Coping Strategies: The Smile that has Struggled through the Tears-A Mixed-Method Research Approach

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Background: Sudden stroke had caused the caregivers minimal time to prepare for their role as carers. Some stroke caregivers were overwhelmed to adjust and accept new responsibilities. They need to reorganise their functions and establish new daily life routines in response to the chronic illness that happens with stroke survivors. **Objective:** This study aimed to determine and explore coping strategies employed by stroke caregivers. **Methods:** This mixed-method study involved 32 stroke caregivers from a community-based stroke rehabilitation centre in Kuching, Sarawak. **Results:** From quantitative analysis, most stroke caregivers employed problem-focused coping strategies (mean=56.66, SD=10.79), followed by emotion-focused coping strategies (mean=55.63, SD=10.29) in confronting the challenges of caring for stroke survivors. Data from qualitative findings revealed eight themes of coping strategies: adjustment to daily life, self-motivation, sharing with other people, acceptance, avoiding thinking about the problem, hoping stroke survivors will get better, emotion suppression and self-blame. **Conclusion:** This study's outcomes provide crucial information about the burdens held by stroke caregivers when taking care of stroke survivors. Stroke caregivers need to adapt better and suitable coping strategies. This will prevent them from becoming overwhelmed by the accumulated stress from caring burdens. The long-term effect of coping strategies should positively assist stroke caregivers in managing the burdens effectively and fostering satisfaction in their life.

Keywords: stroke; caregivers; coping strategies; problem-focused; emotion-focused

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Introduction:

Stroke is a condition when the blood supply to brain parts is reduced and interrupted. Oxygen and nutrients are essential for the brain to function. Thus any clot or rupture of the blood vessels might damage the brain cells ¹. Around the globe, out of four people with an age of more than 25 years old, one suffers from stroke ². Of the 12.2 million first stroke episodes, 6.5 million will die worldwide ². According to the WHO record, 110 million people suffer from stroke. The post-stroke event might demand assistance from stroke caregivers. Stroke survivors need their carers' attention, support and help ².

From admission until discharge, a holistic stroke survivors-stroke caregivers-centred approach to post-stroke care might be needed, not without challenges ³. Stroke caregivers experienced burdens from caregiving duties ⁴. Furthermore, being emotionally, mentally and physically exhausted to cater to stroke survivors' needs ⁵. The demand for caring often overwhelmed stroke caregivers ⁶. Due to the sudden nature of stroke, caregivers were less prepared for the new roles. Rapid adaptation and modification of daily life routines were crucial. Stroke caregivers developed strategies to confront the demand of caregiving. Coping could be described as thoughts and efforts to manage stressful situations ⁷. Coping strategies involve evaluating situations, exploring for details, combining both conceptual and solid sense, retrieving resources, and keeping up with support ⁸⁻¹⁰. Stroke caregivers' ability to acknowledge burdens from caregiving would result in successful coping. Appropriate arrangement and positive coping strategies would provide effective strain management ¹¹.

Adapting from the caregiving tasks acquires flexibility in planning and decision-making. This allows caregivers to secure strength and capacity to accept the circumstances as part of daily life challenges ¹². Problem-focused and emotion-focused coping were established by Lazarus and Folkman ¹³, discussing various ways of managing stressful situations. Problem-focused coping involves adjusting and controlling the sources of burden, while emotion-focused coping establishes emotional stability ^{14, 15}. Efficient coping strategies often correspond with positive and negative adaptation ¹⁶, while lacking coping skills would heighten unpleasant events or feelings ¹⁷. Most stroke caregivers employed positive coping strategies to confront caregiving's burden, including active coping, acceptance, positive

reframing and planning ¹¹. Vericilerinin et al. ¹⁸ agreed that caregivers who use effective problem-focused coping strategies would experience reduced caregiving burden as caregivers were able to confront the problematic situation and adapt well to the process of caring duties. In contrast, Ramazanu et al. ¹⁹ reported that stroke caregivers could not cope with stroke effectively in the community due to insufficient preparation to adapt and handle stroke survivors at home after hospitalization.

Besides problem-focused coping, stroke caregivers in various studies also employed emotion-focused coping when dealing with caregiving burdens. The objective of emotion-focused coping is to reduce the negativity and unpleasant emotions that arise from an unfavourable situation instead of trying to resolve the problem ^{20, 21}. Caregivers reported having depressive symptoms associated with less proactive coping, less daily social support and high emotional discomfort ^{22, 23}. Stroke caregivers experience emotional distress immediately after caring for disabled family members ²⁴. Rodriguez-Perez et al. ²⁵ agreed that active emotion-focused coping by recognition, reappraisal and acceptance of the caregiving situation would improve caregivers' emotional health.

Sharing and expressing physical and emotional stress should be encouraged among stroke caregivers. The role of stroke caregivers was needed in managing stroke survivors. From admission until the rehabilitation program, more focus on care is always deliberated toward stroke survivors, leaving aside stroke caregivers. Stroke caregivers' well-being is essential because stroke survivors depend on their caregivers daily. Furthermore, healthcare providers would be more aware of identifying stroke caregivers' needs. A systematic and organized gathering of information on stroke caregiving would identify and highlight caregivers' strengths. Family caregivers could also determine resources such as any helper besides primary caregivers. Ideally, caring for stroke survivors requires teamwork. However, some families might not have enough support from their members. Hence, this study aimed to determine and explore coping strategies employed by stroke caregivers while caring for stroke survivors in Kuching, Sarawak.

Methods and Material:

Research design

This cross-sectional study aimed to assess and explore coping strategies stroke caregivers used to confront

while caring for stroke survivors. This study also embarked on a convergent parallel mixed methods research design. The quantitative and qualitative data collection and analysis was concurrently conducted in the same phase of the research process. Both the quantitative and qualitative components were equally weighed. The analysis was done independently. However, the results was interpreted together ²⁶.

Mixed-method research is a technique to investigate and explore, integrating quantitative and qualitative procedures into one study to deliver a wide-ranging point of view ²⁷⁻²⁹. Generally, mixed methods research constitutes a study that requires gathering, exploring and explaining quantitative and qualitative data either in one study or in a chain of studies to analyse similar fundamental circumstances ³⁰. Mixed methods research design also benefits researchers in providing a more thorough understanding of a research problem. Creswell and Creswell ³¹ proposed that a combination of quantitative and qualitative approaches would give a greater comprehension of research issues than a single method alone.

Research setting

This study was conducted at one of the community-based stroke rehabilitation centres in Kuching, Sarawak. The rehabilitation centre operates every Monday to Friday except for weekends and public holidays. Scheduled stroke survivors and other patients come on different days of the week. Some of them enrolled on their session for two days per week, and others only underwent rehabilitation therapy for one day per week. They were allowed to choose a morning or afternoon session based on their preference or caregivers' convenience. Each stroke survivor or other patient had scheduled rehabilitation sessions for two hours, either in the morning or afternoon session. Three main programs run for stroke survivors include independence, activities and exercises. For the independence aspect, patients are encouraged to use their skills safely and to the best they can, such as mobility, dressing, eating and socialising. For the activities component, structured activities are conducted with the therapist's support to improve other skills that are hand function, communication, socialisation, memory, concentration and higher-level thinking skills. Such activities would help to improve patients' flexibility of muscles and joints, muscle strength, coordination, fitness, balance, and walking for exercise programmes. The exercise session at the centre in conducted in a small group of patients with similar physical activities. This study

included all 32 primary caregivers of stroke survivors at the centre. All of the stroke caregivers agreed and consented to in this study. Participants were recruited using a purposive sampling method. Purposive sampling is a technique for obtaining information-rich cases related to interest phenomena ³². This would involve identifying and selecting participants who were knowledgeable about or had experience with interest phenomena ³¹. The inclusion criteria for the respondents include primary caregivers of the stroke survivors, caregivers who live with the stroke survivors, the age of stroke caregivers are 18 years and above, and stroke caregivers who provide informed consent. The inclusion criteria for the respondents include an assistant or helper who assists primary stroke caregivers in providing caregiving tasks to the stroke survivors and the helper who comes once in a while and does not stay with the stroke survivors ¹⁸.

Research instruments

Two sets of questionnaires were used for data collection in this study. For the quantitative part, the questionnaire comprised caregivers' socio-demographic characteristics and Likert scale questions on coping strategies undertaken by stroke caregivers. The questions were adapted from the Coping Strategies Inventory ³³. There were 72 items of coping strategies with four main domains: Problem-Focused Engagement, Emotion-Focused Engagement, Problem-Focused Disengagement and Emotion-Focused Disengagement. All the item scores in each domain were summed up to determine the coping strategies employed by stroke caregivers ³³. For qualitative data, interviews were guided by question guidelines. It was a written list of open-ended questions used in one-to-one interview sessions with the recruited participants in this study. The questions were designed based on research questions, research objectives, and relevant literature on emotion-focused and problem-focused coping strategies under close guidance of supervisors.

Data collection and measures to prevent bias

There were a total of 32 stroke survivors enrolled at the rehabilitation centre. All of the 32 stroke caregivers were sampled quantitatively. For the qualitative part, interview sessions with 18 stroke caregivers were conducted individually by the researcher at the rehabilitation centre. The researchers were convinced that interviewing respondents directly without others' assistance would ensure the researcher was well-informed by obtaining a rich and broader

view of data. This would benefit the researcher in interpreting and analysing the data correctly. The interviewing process was also discussed and under the close guidance of supervisors to prevent biases. The researcher encouraged and motivated the stroke caregivers to provide sufficient details to the questions and informed them that their information was important for this research. The researcher used probing questions to obtain more information and rephrase the information to ensure that the participants conveyed the right information. The researcher avoided displaying disagreements when viewpoints expressed by the stroke caregivers contradicted the researcher's ideas. Rather, the researchers allow the participants to describe and express their experiences and thought. In a research interview, the researcher refrained from expressing opinions on the questions covered during the interview session ³⁴.

Data analysis

In this study, data analysis for quantitative data was done using the Statistical Package for Social Sciences version 27.0 ³⁵. Statistical analysis was included as descriptive statistics. In descriptive statistics, mean and standard deviation were used to describe continuous variables. Qualitative data were analysed manually by adopting the steps developed by Putit ³⁶ with prior permission. As described by Putit (1010), there are nine analysis stages of analysis. However, only six main essential and relevant steps were adopted under the guidance of supervisors. In our study, six steps involved were (i) *research questions and data*, (ii) *thematic questions from the interview*, (iii) *transcribing verbatim*, (iv) *coding*, (v) *indexing categories*, and (vi) *emerging themes*. The qualitative data were analysed manually using a conventional content analysis approach ³⁷. The coding categories derived directly from the text data in conventional content analysis ^{38,39}. Data analysis began after the first interview was conducted, and this process continued with the other interview sessions ⁴⁰. The transcripts are fundamental for data analysis, and it is important to produce written transcripts representative of the spoken word ⁴¹.

Rigour of qualitative data analysis

Trustworthiness or rigour of qualitative research ensures the degree of confidence in data, interpretation, and methods used to ensure the quality of a study ^{39,42,43}. Trustworthiness involves establishing credibility, transferability, dependability, and conformability ⁴⁴. To achieve the study's credibility, the researcher

committed prolonged engagement in the data collection phase, transcriptions, and data analysis. The researcher did all the interviews, as it helped to understand the respondents' situation adequately. Transferability is findings from a study that has applicability in other contexts. In this study, the target respondents were stroke caregivers who agreed to be interviewed and could provide relevant data that matched the study's objectives ³⁹. The dependability is used to show consistent and repeated findings. This study stopped data collection after the sampling reached data saturation to facilitate dependability. Similar results from other literature were referred to confirm our results ⁴⁵. Nevertheless, there were some significant findings that emerge especially from the interview data.

Integration of quantitative and qualitative data

The integration of quantitative and qualitative data could enrich the value of mixed methods research ^{26, 46}. Three approaches could implement the data integration, viz at the design, methods, and research interpretation and reporting levels ²⁶. Our study integrates the data at the interpretation and reporting level. Again, there are three approaches to integrating qualitative and quantitative data at the interpretation and reporting levels. These are (i) integrating through narrative, (ii) integrating through data transformation, and (iii) integrating through joint displays ^{47, 48}. A joint array of quantitative and qualitative results are displayed in our study. This integration combines quantitative and qualitative data through visual means. This would help establish the latest comprehension and ideas from the knowledge obtained from quantitative and qualitative studies. Finally, a narrative discussion was made, including the quantitative and qualitative findings ^{49, 50}.

Ethical Clearance:

Ethical approval for this study was obtained from the Research and Ethics Committee of the Faculty of Medicine and Health Sciences (Ref: UNIMAS/NC-21.02/03-02 Jld.02 (74), 17.03.2017), Universiti Malaysia Sarawak (UNIMAS). Permission to conduct this study at the community stroke rehabilitation centre was obtained through a letter of approval from the centre. Before each interview was conducted, written informed consent was obtained from every respondent. They were given information regarding the study's objectives and data collection method. They were informed that their participation in this study was voluntary and they had the right to

withdraw from the study at any time. The respondents were assured anonymity and confidentiality of their personal information and data as collected. Respondents who agreed to participate in this study were asked to sign the informed consent form.

Results:

Characteristics of stroke caregivers

The mean age of the caregivers was 52.2(13.9) years. Most of the caregivers were female (90.6%), and only 9.4% were male. More than half (53.1%) of the caregivers were Chinese, followed by Malays (31.3%), Iban (6.3%). More than two-fifths (43.8%) of the caregivers had a secondary level of education, followed by a bachelor's degree (21.9%) and diploma (12.5%). However, 9.4% had no formal education. Half of the caregivers were engaged in any job (50%), 31.3% were unemployed, and another 18.8% were retired. More than four-fifths (84.4%) of the caregivers were married, and 12.5% were single. However, 3.1% were divorced. The analysis found that 46.9% of the caregivers were spouses, another 37.5% was their child, and 9.4% were siblings (Table 1).

Table 1 Characteristics of stroke caregivers

Characteristics	n	%
Age of caregiver's (years)	Mean =52.2, SD=13.9 yrs	
Gender		
Male	3	9.4
Female	29	90.6
Race		
Chinese	17	53.1
Malay	10	31.3
Bidayuh	2	6.3
Iban	1	3.1
Others	2	6.3
Level of Education		
No Formal Schooling	3	9.4
Primary School	3	9.4
Secondary School	14	43.8
Diploma	4	12.5
Bachelor's Degree	7	21.9
Masters/PhD	1	3.1
Employment status		
Employed	16	50.0
Unemployed	10	31.3
Retired	6	18.8
Marital Status		

Characteristics	n	%
Single	4	12.5
Married	27	84.4
Divorced	1	3.1
Relationship with the stroke patient		
Spouse	15	46.9
Child	12	37.5
Sibling	3	9.4
Others	2	6.3

Coping strategies in terms of engagement and disengagement

Table 2 depicts the summary of coping strategies undertaken by caregivers. The analysis revealed that the respondents had the highest mean score for problem-focused engagement (mean=56.66, SD=10.79), and the mean for emotion-focused engagement was 55.63(10.29). However, the mean score for problem-focused disengagement was 48.84 (11.07), and the emotion-focused disengagement was 33.41(9.21). The overall mean coping strategies by engagement was 3.11(0.51), and the coping strategy by disengagement was 2.28(0.50).

Table 2 Coping strategies in terms of engagement and disengagement

Score	Mean	SD	Min	Max
Engagement				
Problem Focused				
Problem-solving	27.97	5.54	14.00	38.00
Cognitive restructuring	28.69	5.78	16.00	38.00
<i>Problem-focused engagement</i>	56.66	10.79	30.00	76.00
Emotion-focused				
Express emotion	25.78	5.51	16.00	44.00
Social Support	29.84	6.10	16.00	41.00
<i>Emotion-focused engagement</i>	55.63	10.29	37.00	83.00
Engagement (mean)	3.11	0.51	2.06	4.14
Engagement (Total)	112.28	18.28	74.00	149.00
Disengagement				
Problem Focused				
Problem avoidance	22.16	4.65	13.00	29.00
Wishful thinking	26.69	7.90	9.00	41.00
<i>Problem-focused disengagement</i>	48.84	11.07	26.00	67.00

Score	Mean	SD	Min	Max
Emotion-focused				
Self-criticism	15.94	5.39	9.00	31.00
Social withdrawal	17.47	5.78	10.00	32.00
<i>Emotion-focused disengagement</i>	<i>33.41</i>	<i>9.21</i>	<i>19.00</i>	<i>54.00</i>
Disengagement (mean)	2.28	0.50	1.25	3.25
Disengagement (Total)	82.25	18.03	45.00	117.00

Themes, sub-themes and excerpt of coping strategies for stroke

Based on the problem and emotion-focused coping, Tobin ³³ categorised it as engagement or disengagement. It is then further expanded into eight subcategories: problem-solving, cognitive restructuring, problem avoidance, wishful thinking, social support, express emotions, social withdrawal, and self-criticism. In our study, eight themes were identified from the data collected based on these categories and subcategories. Table 3 presents the categories, subcategories, themes and quotes of stroke caregivers' coping strategies.

Table 3 Categories, subcategories, themes and quotes of stroke caregivers' coping strategies

Categories	Subcategories	Themes	Quotes
Problem Focused Engagement	Problem Solving	Adjustment to daily life	I fight with time. Every morning, I will ensure my children go to school, manage our store, drive my children to tuition class, and care for my husband. Last time, my husband send our children to school (<i>Wee, 43 years</i>).
	Cognitive Restructuring	Self-motivation	I always tell myself that I must be strong. Ignore whatever negative saying around me. People will say anything. I will try to improve my life (<i>Rokiah, 46 years</i>).
Problem Focused Disengagement	Problem Avoidance	Avoid thinking about the problem	I always try to ignore thinking about my current situation. My husband suddenly falls ill and I was not prepared. My life has changed 360 degrees (<i>Sarah, 43 years</i>).
	Wishful Thinking	Hope stroke survivors will get better	I want my life to return just like before. I wish my husband would recover from his illness (<i>Faridah, 56 years</i>).
Emotion Focused Engagement	Social Support	Sharing with other people	I shared and conveyed my feelings with my children. This will increase my spirit in caring for my husband (<i>Nadia, 72 years</i>).
	Express Emotions	Acceptance	If my husband is fated to get this illness, we also cannot stop it (<i>Ramlah, 42 years</i>).
Emotion Focused Disengagement	Social Withdrawal	Emotion Suppression	I keep my feeling to myself because if other people look at our problem, they will sympathise with us. But we must face the problem and carry the burden. People who see it are not the same as those who went through it (<i>Wee, 43 years</i>).
	Self-criticism	Self-blame	I blame myself because I did not know my mother had underlying hypertension. She went for a blood pressure check-up but ignored the result from the doctor. If only I had known earlier, maybe her stroke can be avoided (<i>Maria, 31 years</i>).

Integration of quantitative and qualitative data

Integration occurs as the quantitative and qualitative data are combined, and information supports each other ⁵¹. Rai ⁵² agreed that integrating quantitative and qualitative data would enhance the value of research findings. In this study, quantitative and qualitative data were integrated using joint displays. Joint displays can be described as “a way to integrate the data by bringing the data together through a visual means to draw out new insights beyond the information gained from the separate quantitative and qualitative results”⁴⁹. Joint displays for this study are illustrated in Table 4.

Table 4 Joint displays of stroke caregivers' coping strategies

Quantitative Findings	Qualitative Findings (Example of excerpt)	Interpretations										
<table border="1"> <caption>Data for Figure 1: Mean (SD) for Coping Strategies</caption> <thead> <tr> <th>Coping Strategy</th> <th>Mean (SD)</th> </tr> </thead> <tbody> <tr> <td>Problem-focused engagement</td> <td>56.66 (10.79)</td> </tr> <tr> <td>Emotion-focused engagement</td> <td>55.63 (10.29)</td> </tr> <tr> <td>Problem-focused disengagement</td> <td>48.84 (11.07)</td> </tr> <tr> <td>Emotion-focused disengagement</td> <td>33.41 (9.21)</td> </tr> </tbody> </table>	Coping Strategy	Mean (SD)	Problem-focused engagement	56.66 (10.79)	Emotion-focused engagement	55.63 (10.29)	Problem-focused disengagement	48.84 (11.07)	Emotion-focused disengagement	33.41 (9.21)	<p>1. Problem-focused engagement Problem-solving: <i>I fight with time. Every morning, I will ensure my children attend school, manage our store, drive my children to tuition classes, and care for my husband. Last time, my husband was the one who sent our children to school (Wee, 43 years).</i></p> <p>2. Emotion-focused engagement Express emotions: <i>We have to accept this situation. If he is fated to have this illness, we cannot avoid it (Hasnah, 64 years).</i></p> <p>3. Problem-focused disengagement Wishful thinking: <i>Sometimes, I feel I want to have a smooth and easy life. When I feel stressed, I do not want to think about what happened because it will make me worry more (Linda, 27 years).</i></p> <p>4. Emotion-focused disengagement Self-criticism: <i>I blame myself because I did not know my mother had underlying hypertension. If only I had known earlier, her stroke might be avoided (Maria, 31 years).</i></p>	<p>Stroke caregivers employed various ways of coping strategies in confronting burdens from caregiving. Caregivers who accept the caregiving role as part of their life, responsibility or reciprocal love between spouses and parents-children reported using positive coping strategies. Those caregivers who utilised physical surrounding or family resources and connected it with their inner strength would report using effective coping strategies. Cultural and religious backgrounds also influence caregivers' coping strategies. Most caregivers were among family members and believed God had a proper plan for them in life. Caregivers who provide positive experiences in coping with stroke would manage their situation correctly over time.</p>
Coping Strategy	Mean (SD)											
Problem-focused engagement	56.66 (10.79)											
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Discussion:

Caring for stroke survivors can be challenging and demanding. Stroke caregivers can develop potential negative implications for their health, work, financial, emotional, and social relationships, and quality of life. In this study, the most adapting coping strategies undertaken by stroke caregivers were problem-focused coping strategies. Stroke caregivers also employed emotion-focused coping strategies.

To cope with caring for stroke survivors, caregivers adopt different strategies in their daily lives. Coping includes adjusting to and tolerating unwanted situations that cause life changes and is perceived as stressful ⁵³. In this study, caregivers need to adjust their daily life routine, which they never did before. A positive adjustment to chronic illness such as stroke can result in positive emotional well-being, appropriate actions and better development of the stroke caregivers' self-worth. Christie and Khatun ⁵⁴ agreed that the strengths, abilities, and resources available to stroke caregivers would contribute to positive adjustments and health issues. A positive adjustment to chronic illness such as stroke can result in positive emotional well-being, appropriate actions, and better development of the stroke caregivers' self-worth. Stroke caregivers would plan and implement proper strategies to confront the changes in their daily lives ⁵⁵. Another coping strategy that stroke

caregivers used was self-motivation. Self-motivation is one's ability to do something and complete a task without influencing other people or situations ⁵⁶. In this study, stroke caregivers also motivate themselves to deal with stress and obstacles in their daily lives. They fight their negative feelings and do not want to surrender their life to fate. Stroke caregivers' ability to motivate themselves to foster their decision to tolerate the hardships of caregiving. This is important to their and stroke survivors' well-being ⁵⁷. Furthermore, maximising the self-determination of the stroke caregivers and optimising lifestyle choices resulting from the burden of caring for stroke survivors provide positive effects in dealing with stress from caregiving ⁵⁸. In our study, stroke caregivers chose to motivate themselves to enhance their strategies and create a positive mindset to act in different challenges that arise from caring for stroke survivors effectively and efficiently.

Besides problem-focused coping strategies, stroke caregivers also employed emotion-focused coping strategies while caring for stroke survivors. A load of caregiving negatively impacted the physical and emotional of stroke caregivers. Caring for stroke survivors do not necessarily about gathering information on stroke, gaining caregiving skills, adequate support from other people such as peers and family members are essential resources for the

caregivers. This could only be achieved when stroke caregivers physically or emotionally share their burdens with others. Caregivers need help and support to avoid a sense of overwhelming due to the burden of caring. In the present study, caregivers always share their problems with their children, mother, and friends. In return, they gave the caregivers the emotional support they needed to strengthen and motivate them to face caregiving challenges. Findings from the present study consistent with previous studies ^{59, 60}, where most stroke caregivers use social support as one of their coping strategies. Kumar et al. ⁵⁹ revealed that caregivers seek social help, including discussing their problems with family members and friends. They also identified a few ways of solutions and tried to solve the problem one by one. Rodriguez-Perez et al. ²⁵ found that caregivers who seek social support would adapt and cope more with caregiving burdens. Caregivers with high satisfaction with social backing portray positive influence as they experience better caregiving roles. It improves their mental well-being and vitality ⁶¹.

However, this study contradicted Ong et al. ⁶². The study found that emotional support was positively associated with psychological distress and considered a maladaptive coping strategy. The study also explained that seeking emotional support from friends or relatives could be problematic. Nevertheless, Lewis and Rook ⁶³ reported that an abundance of social support would lead to more psychological distress, particularly when the given support was controlling and directive. Hence, social support might be useful and practical if it matches the caregivers' needs ⁶⁴.

Adapting to the sudden and long-term implications of stroke is a complex process for stroke caregivers. The confirmation of being diagnosed as a stroke patient starts a prolonged and taxing situation affecting stroke survivors and their caregivers ³. King et al. ⁶⁵ revealed that non-white spousal caregivers who reported having affirmative acceptance of life changes after stroke were less anxious and viewed caregiving as less stressful than White caregivers. Kraaij and Garnefski ⁶⁶ acknowledged the acceptance of chronic illness as a cognitive coping strategy. The study elaborated that an acceptable coping strategy would be more effective for adjusting to chronic illness. For example, stroke is a chronic condition that both survivors and caregivers need to accept as a stroke has a strong influence on changing their previous healthy lives before the stroke. The present

study's finding was consistent with Kumar et al. ⁵⁹. The study reported that the acceptance coping strategy was the highest coping strategy employed by stroke caregivers to overcome stressful caregiving experiences.

Strengths and limitations

The strengths of this study to be highlighted. This study applied convergent parallel mixed methods design. Mixed methods allow for a deeper understanding, especially in the context of respondents' experiences ³¹. The strength of using convergent parallel mixed methods includes the researcher's ability to compare quantitative and qualitative data that were useful in understanding and reflecting respondents' points of view ⁶⁷. Stroke caregivers employed different coping strategies that emphasised positive coping skills. Some caregivers highlighted development in positive attitudes such as accepting reality, being grateful and mastering caring skills.

As in other study, we encountered some limitations. Firstly, this study was conducted in one of the community rehabilitation centre after stroke survivors were discharged home. Hence, caregivers' coping strategies during acute hospitalisation could not be determined. Future research should include data collection during admission and in-hospital rehabilitation clinics as it covers major administrative divisions of Sarawak, enriching the findings in terms of different ethnicities, cultural backgrounds, and socioeconomic status. Secondly, the sample size recruited for this study was small and did not cover Sarawak's whole population. Therefore, the generalisation of the result was limited. A more extensive and diverse sample would allow more sophisticated analyses, and the findings would represent the population. The respondents in this study mainly consist of female stroke caregivers. Thus, coping strategies between both genders could not be differentiated. Future research needs to include an equal number of male and female participants. This is because different genders may have employed coping mechanisms in different life perspectives.

Conclusion:

Due to its sudden onset, stroke commonly causes stroke caregivers to be in an ill-prepared position to deal with the impairments caused to stroke survivors, including physical, emotional, and social functions. Findings from this study also suggest that stroke caregivers also use a lot of problem-focused coping strategies. They better controlled the

presenting burdens and confronted the challenges during their caregiving period. Stroke caregivers also applied an emotion-focused coping strategy. This was because stroke events are uncontrolled, and the burdens that stroke caregivers need to face daily are regular and long-term. Hence, most of the time, stroke caregivers handle their situations with emotional management. Stroke caregivers need to have adapted better and suitable coping strategies. This will prevent them from becoming overwhelmed by the accumulated stress that originates from caring burdens. The long-term effect of coping strategies should positively assist stroke caregivers in managing the burdens effectively and fostering satisfaction in their life. Healthcare providers might encourage family members to meet and discuss the division of responsibilities and acknowledge stroke survivors' and primary caregivers' needs, abilities and limitations.

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Author's contribution

This study was made possible through the collaborative efforts of MMR, NBS, MTA, ABS, MF, ZBT, and LHK, who were responsible for data gathering and idea generation. MMR and ZBP spearheaded the study design, while SBS and MMR took charge of data gathering. MMR and SBS did the writing and submission of the manuscript. The final draft was then reviewed, edited, and approved by all authors.

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Competing interest

The authors declare that they have no competing interests.

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